PJ10KPS-CA

User & Technical Manual

R.V.R. ELETTRONICA

BROADCAST EQUIPMENT

CE

Rev. 2.1

CE

EC Declaration of conformity

R.V.R. Elettronica S.p.A. declares that this transmitter is in conformity to the essential requirements and to other relevant regulations settled by the 1999/5/CE directive.

Validity of the EC declaration of conformity.

WARNING: the conformity of this product is not valid if the product is used in conditions not authorized by R.V.R. Elettronica as described in the user manual.
Examples of conditions in which the conformity is not valid (indicative list):
The connection between the exciter and the amplifier (i) indicated in the present document is not done properly;
The components used are different from those used and recommended by R.V.R. Elettronica S.p.A.;
The additional devices used are not suitable and/or are generating signals which are not suitable to those supported by the product;
The product is used in operative conditions different from the normal working conditions for which the product was designed (temperature, humidity, supply voltage, …);
Any modification on parts of the product without any prior authorization from R.V.R. Elettronica S.p.A..

Limitations for the use of the product in the EEC member countries.

This product is a radio transmitter for FM broadcasting .
It can work on operative frequencies which are not harmonized in the EEC member countries.
Whoever uses this product, should obtain the authorization from the spectrum local administrative authority before starting using it.
The user is responsible for the configuration of the working frequency, the output power, and for the other characteristics of the installation to which the transmitter described in the present documentation is part of, in order to respect the limitations described in the authorization received by the competent local authority.

Waste Electrical or Electronic Equipment (WEEE)

This symbol indicates that you should not discard waste electrical or electronic equipment (WEEE) in the trash. For proper disposal, contact your local recycling/reuse or hazardous waste center.

CAUTION

Do discard waste electrical or electronic equipment (WEEE) in the trash. For proper disposal, contact your local recycling/reuse or hazardous waste center.

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1. Introduction

This manual describes the PJ10KPS-CA, a solid-state RF amplifier designed for frequency modulation sound broadcasting, manufactured by **R.V.R. Elettronica S.p.A.**..A control system for the exciters is built into the machine so that in order to have a system with redundant exciters, all that needs to be done is to include two exciters in the transmitter such as, for example, the PTX30LCD exciters made by R.V.R. Elettronica S.p.A.

This manual is written as a general guide for those having previous knowledge and experience with this kind of equipment, well conscious of the risks connected with the operation of electrical equipment.

It is not intended to contain a complete statement of all safety rules which should be observed by personnel in using this or other electronic equipment.

The installation, use and maintenance of this piece of equipment involve risks both for the personnel performing them and for the device itself, that shall be used only by trained personnel.

. for injury or damage resulting from improper procedures or practices by untrained/unqualified personnel in the handling of this unit.

Please observe all local codes and fire protection standards in the operations of this unit.

WARNING: always disconnect power before opening covers or removing any part of this unit. Use appropriate grounding procedures to short out capacitors and high voltage points before servicing.

WARNING: this device can irradiate radio frequency waves, and if it's not installed following the instructions contained in the manual and local regulations it could generate interferences in radio communications.

In a residential place this equipment can cause hash. In this case can be requested to user to take the necessary measures.

R.V.R. Elettronica S.p.A. reserves the right to modify the design and/or the technical specifications of the product and this manual without notice.

2. Warranty

Any product of R.V.R. Elettronica is covered by a 24 (twenty four) month warranty.

For components like tubes for power amplifiers, the original manufacturer's warranty applies. R.V.R. Elettronica S.p.A. extends to the original end-user purchaser all manufacturers warranties which are transferable and all claims are to be made directly to R.V.R. per indicated procedures.

Warranty shall not include:

1 You damn that are verified each other during the consignment of the machine to the R.V.R. for possible reparations;
2 Any unauthorized repair/modification;
3 Incidental/consequential damages as a result of any defect;
4 Nominal non-incidental defects
5 Re-shipment costs or insurance of the unit or replacement units/parts

Any damage to the goods must be reported to the carrier in writing on the shipment receipt.

Any discrepancy or damage discovered subsequent to delivery, shall be reported to **R.V.R. Elettronica** within 5 (five) days from delivery date.

To claim your rights under this warranty, you should follow this procedure:

1 Contact the dealer or distributor where you purchased the unit. Describe the problem and, so that a possible easy solution can be detected.

2 Dealers and Distributors are supplied with all the information about problems that may occur and usually they can repair the unit quicker than what the manufacturer could do. Very often installing errors are discovered by dealers.

3 If your dealer cannot help you, contact R.V.R. Elettronica and explain the problem. If it is decided to return the unit to the factory, R.V.R. Elettronica will mail you a regular authorization with all the necessary instructions to send back the goods.

4 When you receive the authorization, you can return the unit. Pack it carefully for the shipment, preferably using the original packing and seal the package perfectly. The customer always assumes the risks of loss (i.e., R.V.R. is never responsible for damage or loss), until the package reaches R.V.R. premises. For this reason, we suggest you to insure the goods for the whole value. Shipment must be effected C.I.F. (PREPAID) to the address specified by R.V.R.'s service manager on the authorization

5 DO NOT RETURN UNITS WITHOUT OUR AUTHORIZATION AS THEY WILL BE REFUSED

6 Be sure to enclose a written technical report where mention all the problems found and a copy of your original invoice establishing the starting date of the warranty.

Replacement and warranty parts may be ordered from the following address. Be sure to include the equipment model and serial number as well as part description and part number.

R.V.R. Elettronica SpA
Via del Fonditore, 2/2c
40138 BOLOGNA
ITALY
Tel. +39 051 6010506
email: info@rvr.it
Web: www.rvr.it

3. First Aid

The personnel employed in the installation, use and maintenance of the device, shall be familiar with theory and practice of first aid..

3.1 Treatment of electrical shocks

3.1.1 If the victim is not responsive

Follow the A-B-C's of basic life support

- Place victim flat on his back on a hard surface
- Open airway: lift up neck, push forehead back (Fig. 3-1).
- Clear out mouth if necessary and observe for breathing
- if not breathing, begin artificial breathing (Figure 3-2): tilt head, pinch nostrils, make airtight seal, four quick full breaths. Remember mouth to mouth resuscitation must be commenced as soon as possible

Figura 3-1

Figura 3-2

- Check carotid pulse (Fig 3-3); if pulse is absent, begin artificial circulation (Fig. 3-4) depressing sternum (Fig. 3-5)

Figura 3-3

Figura 3-4

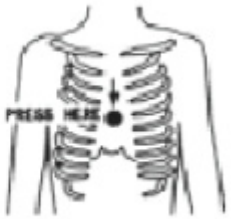


Figura 3-5

- In case of only one rescuer, 15 compressions alternated to two breaths.
- If there are two rescuers, the rhythm shall be of one brath each 5 compressions.
- Do not interrupt the rhythm of compressions when the second person is giving brath.
- Call for medical assistance as soon as possible.

3.1.2 If victim is responsive

- Keep them warm
- Keep them as quiet as possible
- Loosen their clothing (a reclining position is recommended)
- Call for medical help as soon as possible

3.2 Treatment of electrical Burns

3.2.1 Extensive burned and broken skin

- Cover area with clean sheet or cloth
- Do not break blisters, remove tissue, remove adhered particles of clothing, or apply any salve or ointment.
- Treat victim for shock as required.
- Arrange transportation to a hospital as quickly as possible.
- If arms or legs are affected keep them elevated

If medical help will not be available within an hour and the victim is conscious and not vomiting, give him a weak solution of salt and soda: 1 level teaspoonful of salt and 1/2 level teaspoonful of baking soda to each quart of water (neither hot or cold). Allow victim to sip slowly about 4 ounces (half a glass) over a period of 15 minutes. Discontinue fluid if vomiting occurs.

DO NOT give alcohol

3.2.2 Less severe burns

- Apply cool (not ice cold) compresses using the cleansed available cloth article.
- Do not break blisters, remove tissue, remove adhered particles of clothing, or apply salve or ointment.
- Apply clean dry dressing if necessary.
- Treat victim for shock as required.
- Arrange transportation to a hospital as quickly as possible
- If arms or legs are affected keep them elevated.

4. General Description

The PJ10KPS-CA is a RF amplifier for frequency modulation sound broadcasting. It is a fully solid-state apparatus of modern design that uses MOSFET as active components in the FM amplifying modules. This chapter briefly describes the machine's main features.

4.1 Composition

The PJ10KPS-CA transmitter is made up of modules inserted in a 19" rack. The main apparatuses are:

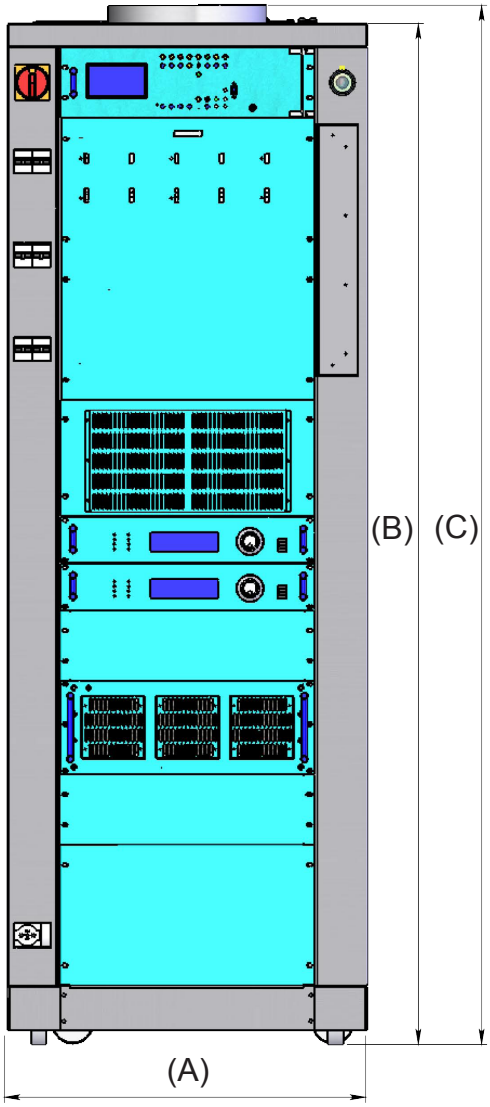
- 5 RF amplifier modules at 2.2 kW nominal
- 1 Control unit (CU)
- 1 Splitter/Input RF
- 1 Dummy load

In configuration standard it comes supplied with Rack from 32 unit.
Other dimensions of the Rack always from 19" but with various heights (40 unit) are available upon request.

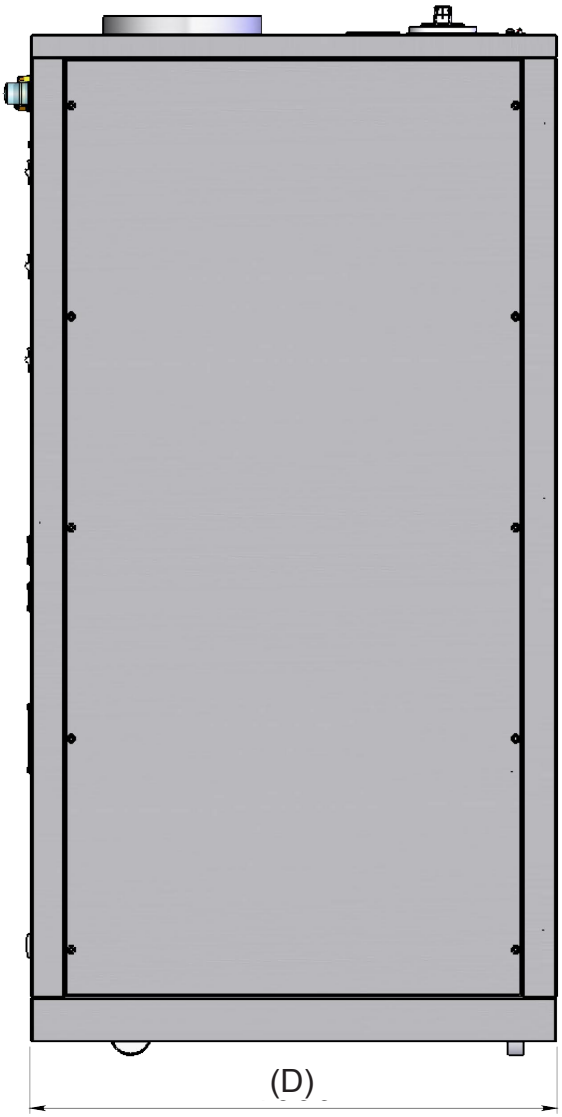
RACK SIZE

	A	B	C	D
32U	685	1580	1615	1000
40U	685	1935	1970	1000

FRONTAL VIEW



SIDE VIEW



The amplifier is supplied complete with all its parts, not really "modules", essential for its operation such as the fans for dissipating the heat generated by the machine inside the room and all the accessories for the electrical and RF wiring. As a rule, the amplifier is supplied as a complete transmitter therefore the two FM exciters that it manages will be provided and connected (a service exciter and a spare exciter).

4.2 Technical specifications

Frequency range:	87.5 to 108.0 MHz without any tunings
Nominal RF power:	10,000 W
Power supply voltage:	400V ±10% AC Three-phase, 3F+N 220V ±10% AC Three-phase, 3F+N 220V ±10% AC Mono-Phase 50/60 Hz
Frequency:	50/60Hz ±2Hz
Exciting power:	Max 30 W
Consumption:	± 14.7 KW Typical
Power factor:	> 0.95
Efficiency:	68/70 %
Weight:	350** kg (rack) - 18 kg (module)
Nominal frequency deviation:	± 75 KHz (peak)
Maximum frequency deviation:	± 100 KHz (peak)
Rated output (load) impedance:	50 ohm unbalanced
Permissible VSWR:	The permissible VSWR is 1.5:1 with full power with foldback beyond 1.5:1.
Harmonics suppression and spurious:	Typically 85 dB
RF power output connector size:	1-5/8” with EIA flange (on request 3-1/8” with EIA flange)
Max. frequency tollerance:	As per ITU (R)
Pilot tone stability:	As per ITU (R)
Ambient temperature range for operation:	0° C to + 45° C
Relative humidity:	95 %, non condensing.
Working altitude:	Up to 3000 meters AMSL *

* For working heights of over 3000 meters, there are (optionally) two possibilities, according to the particular needs of the site:

- extraction fan air
- fans to push the air inside the rack

**The value can differ in the event comes demanded the rack from 40 units

Typical power consumption of the machine:

Transmitter Power (KW)	Phase Current (I_R) Amp.	Phase Current (I_S) Amp.	Phase Current (I_T) Amp.	Neutral Current (I_N) Amp.
1	8.7	4.5	4.4	4.7
2	8.7	4.7	9.9	5.4
3	9.8	7.1	12.3	5.2
4	10.9	9.6	14.2	4.9
5	11.8	11.9	16.1	5
6	12.9	14.3	18.1	5.3
7	13.8	16.7	20.1	5.9
8	14.9	19.3	21.6	6.2
9	16.1	22.1	23.1	6.7
10	18.3	24.3	24.2	6.1

Additional important features of the PJ10KPS-CA are as follows:

- The 2.2 kW amplifying modules are implemented by means of plug-in technology: the individual modules may be removed for performing maintenance operations, for instance, without having to turn off the transmitter. The transmitter keeps working at reduced power even if the module has been removed. This operation may be carried out without any risk of damaging the module itself, or the amplifier as a whole, thanks to the control system and to the RF connectors, the power supply and the purposely designed data-exchange. For further information refer to the maintenance section.
- Each module is controlled by a microprocessor-based card that checks and adjusts its operating mode. The resulting data are transmitted to the control unit.
- The control unit manages the changeover of the two exciters both in automatic and manual mode.
- The amplifier can work as usual even if the control unit is not present. In fact, the control unit may be substituted temporarily with an electromechanical interface by means of which the user may give the ON and OFF commands to the machine. However, in this case all the numeric type information will be missing and the power level remains the last one enabled before removing the control unit.
- Immediate power foldback under severe / damaging fault conditions of VSWR. The power of transmitter should automatically come down to a suitable safe design limit, so that the transmitter and its subsystem does not get damaged due to load mis match. Details of fold back to be provided.

The foldback function, on the VSWR protection, works automatically on bias voltage and PA voltage, reducing them to ensure that the machine can work at maximum power, not to damage internal organs (mosfet, combiners and dummy load).

4.3 Options

The PJ10KPS-CA envisages the following options:

- Dual exciter
- N+1 configuration
- Different kinds of exciters
- Automatic restore after safety tripping or manual restore
- Isolation transformer with surge arresters
- Electromechanical telemetry

4.4 Operating principles

This description is based on the block diagram shown in Figure 4-1.

The PJ10KPS-CA amplifier essentially comprises two blocks:

- The Splitter-Coupler section
- The RF amplifier section

The Splitter-Coupler section performs all the treatment of the RF signal except for the power amplification.

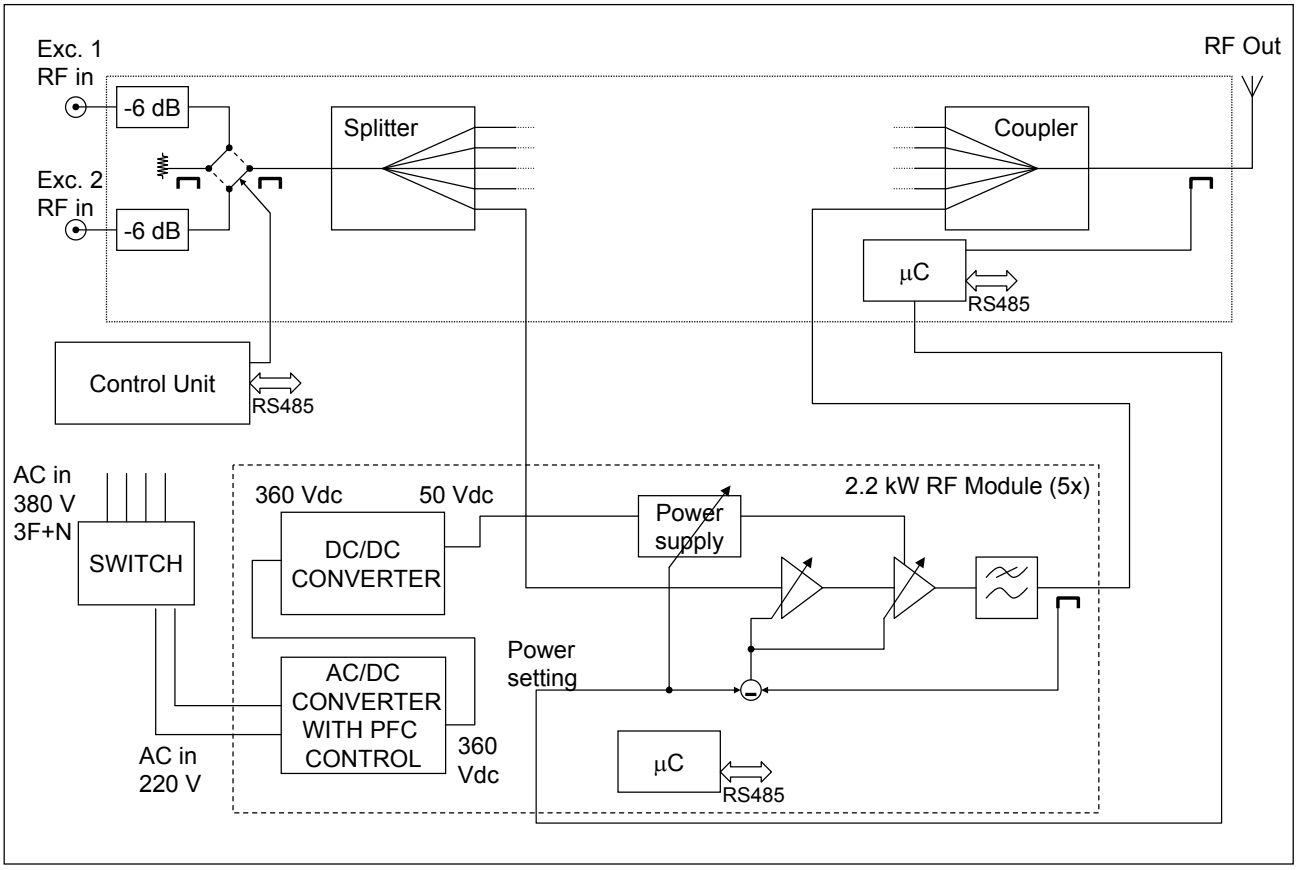


Figure 4-1 Block diagram of PJ10KPS-CA

The RF signals generated by two exciters (in the redundant configuration) are first attenuated by 6 dB to improve the uncoupling among the stages and then connected to a coaxial relay commanded by the control unit. One of the two signals is closed on a dummy load built into the machine whereas the other signal is connected to the input splitter. The power of both signals is measured by specific directional couplers.

The RF signal of the selected exciter is divided into five branches, each of which is passed to the input of an amplifying module.

The five RF amplifiers branches are recombined by the coupler at the output of the amplifying modules. The overall amplified RF signal is filtered by a low-pass filter for eliminating the harmonics and is therefore available at the output connector.

The Splitter-Coupler section is controlled by a microprocessor-based card, which makes the values detected at the various measuring points available for the user and for the diagnostics functions.

The system contains five RF sub-amplifier modules each of which is capable of supplying a maximum of 2.2 kW RF. Each RF sub-amplifier module incorporate a PFC (Power Factor Corrector) power supply that provides the utmost power efficiency for enhanced energy savings and environmental protection.

Each RF sub-amplifier module contains a first stage with gain that varies (driver) according to the MOSFET BLF175. The RF signal amplified by the driver is then separated into three branches, amplified by three LDMOS MRF6VP11KHR5, recombined and filtered by a low-pass filter (Figure 4-2).

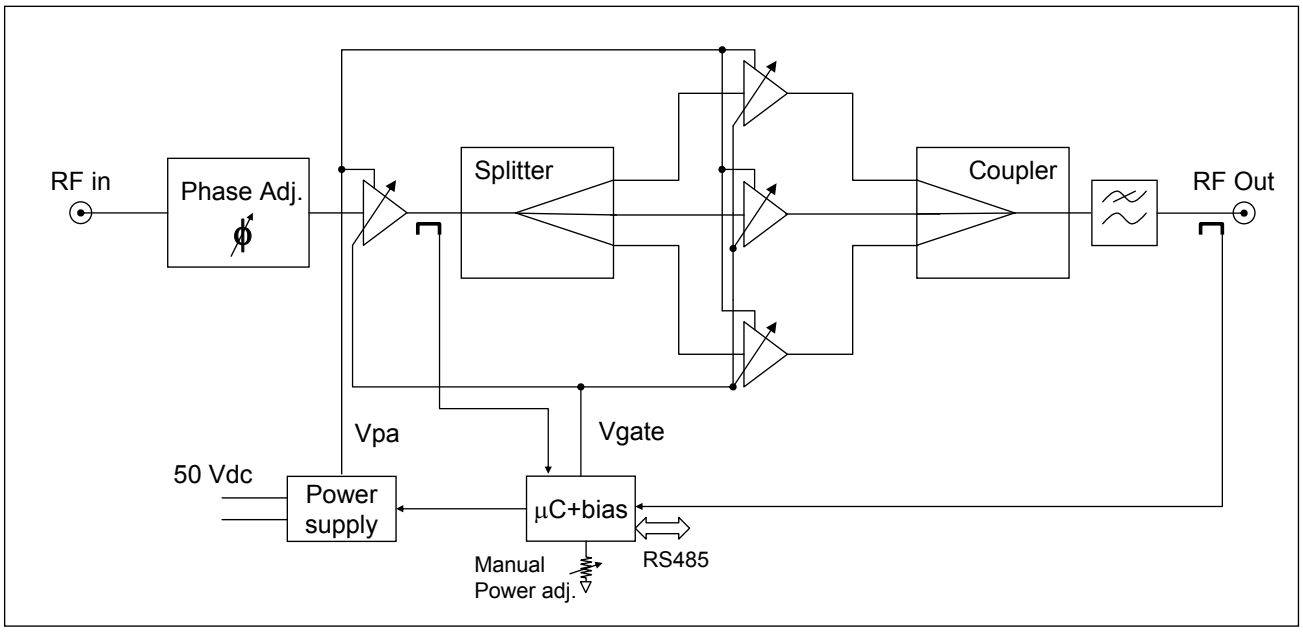


Figure 4-2 Block diagram of RF sub-amplifier module

Each RF sub-amplifier module is controlled by a microprocessor-based card, connected to the other microprocessor-based cards of the system by means of a RS485 type bus.

Each RF sub-amplifier module runs the Automatic Power Control function for regulating the supplied power: the gain of the amplifying stages and the voltage supplied by the switching power supply unit are regulated so that the power that is output from the RF sub-amplifier module corresponds, if possible, to the set level.

The overall power that the PJ10KPS-CA must supply is controlled by the microprocessorbased card of the splitter-combiner section according to the settings made on the control unit for the NOMINAL POWER and LOWER POWER parameters.

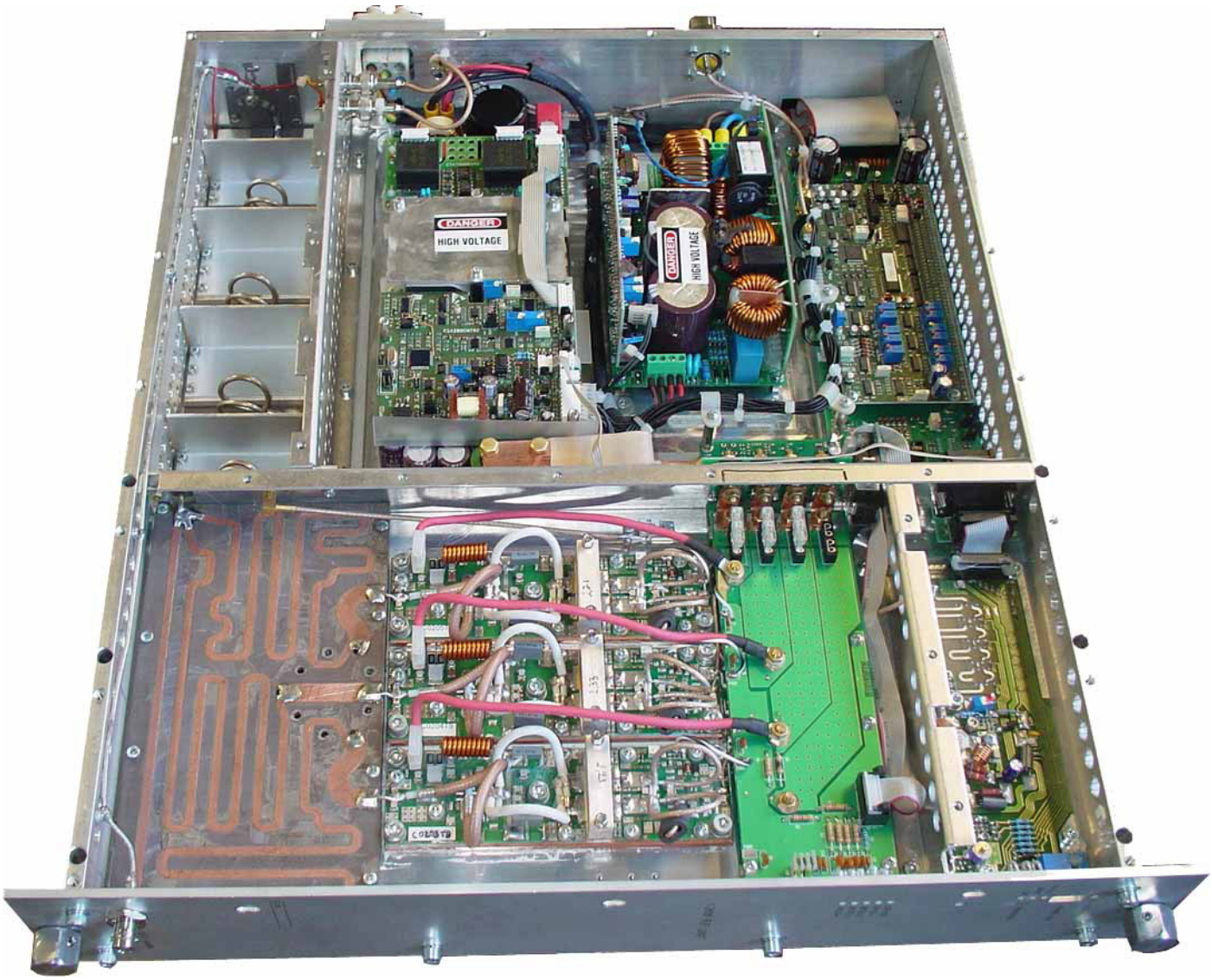


Figure 4-3 Internal view of RF sub-amplifier module

4.5 Datasheet of MRF6VP11KHR5

Freescale Semiconductor
Technical Data

Document Number: MRF6VP11KH
Rev. 7, 4/2010

RoHS

RF Power Field Effect Transistor

N-Channel Enhancement-Mode Lateral MOSFET

Designed primarily for pulsed wideband applications with frequencies up to 150 MHz. Device is unmatched and is suitable for use in industrial, medical and scientific applications.

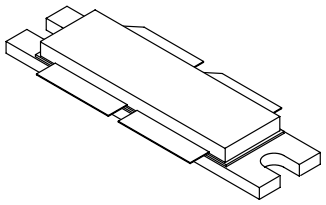
- Typical Pulsed Performance at 130 MHz: V_{DD} = 50 Volts, I_{DQ} = 150 mA, P_{out} = 1000 Watts Peak (200 W Avg.), Pulse Width = 100 μsec, Duty Cycle = 20%
  - Power Gain — 26 dB
  - Drain Efficiency — 71%
- Capable of Handling 10:1 VSWR, @ 50 Vdc, 130 MHz, 1000 Watts Peak Power

Features

- Characterized with Series Equivalent Large-Signal Impedance Parameters
- CW Operation Capability with Adequate Cooling
- Qualified Up to a Maximum of 50 V_{DD} Operation
- Integrated ESD Protection
- Designed for Push-Pull Operation
- Greater Negative Gate-Source Voltage Range for Improved Class C Operation
- RoHS Compliant
- In Tape and Reel. R6 Suffix = 150 Units per 56 mm, 13 inch Reel.

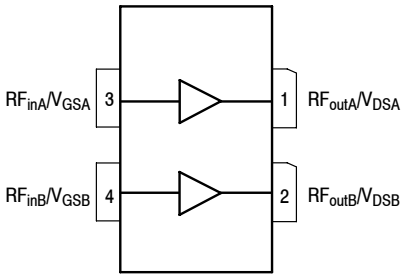
MRF6VP11KHR6

**1.8-150 MHz, 1000 W, 50 V
LATERAL N-CHANNEL
BROADBAND
RF POWER MOSFET**



**CASE 375D-05, STYLE 1
NI-1230**

PART IS PUSH-PULL



(Top View)

Figure 1. Pin Connections

Table 1. Maximum Ratings

Rating	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	-0.5, +110	Vdc
Gate-Source Voltage	V_{GS}	-6.0, +10	Vdc
Storage Temperature Range	T_{stg}	-65 to +150	°C
Case Operating Temperature	T_C	150	°C
Operating Junction Temperature (1,2)	T_J	225	°C

Table 2. Thermal Characteristics

Characteristic	Symbol	Value (2,3)	Unit
Thermal Resistance, Junction to Case Case Temperature 80°C, 1000 W Pulsed, 100 μsec Pulse Width, 20% Duty Cycle Case Temperature 67°C, 1000 W CW, 100 MHz	 $Z_{\theta JC}$ $R_{\theta JC}$	 0.03 0.13	°C/W

1. Continuous use at maximum temperature will affect MTTF.
2. MTTF calculator available at http://www.freescale.com/rf. Select Software & Tools/Development Tools/Calculators to access MTTF calculators by product.
3. Refer to AN1955, *Thermal Measurement Methodology of RF Power Amplifiers.* Go to http://www.freescale.com/rf.

freescale semiconductor

Table 3. ESD Protection Characteristics

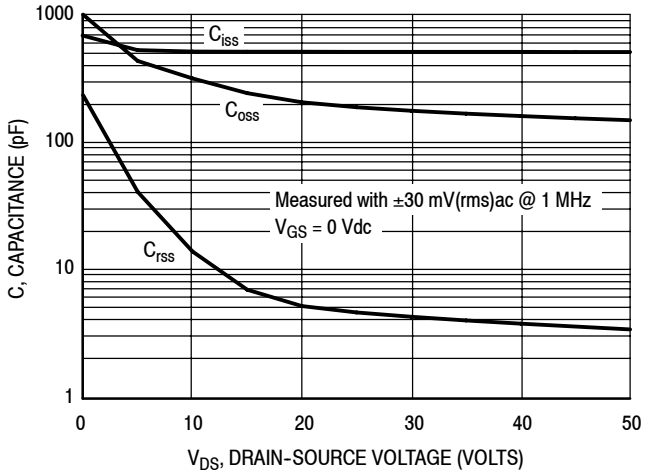
Test Methodology	Class
Human Body Model (per JESD22-A114)	2 (Minimum)
Machine Model (per EIA/JESD22-A115)	A (Minimum)
Charge Device Model (per JESD22-C101)	IV (Minimum)

Table 4. Electrical Characteristics (T_A = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Off Characteristics (1)					
Gate-Source Leakage Current (V_{GS} = 5 Vdc, V_{DS} = 0 Vdc)	I_{GSS}	—	—	10	μAdc
Drain-Source Breakdown Voltage (I_D = 300 mA, V_{GS} = 0 Vdc)	$V_{(BR)DSS}$	110	—	—	Vdc
Zero Gate Voltage Drain Leakage Current (V_{DS} = 50 Vdc, V_{GS} = 0 Vdc)	I_{DSS}	—	—	100	μAdc
Zero Gate Voltage Drain Leakage Current (V_{DS} = 100 Vdc, V_{GS} = 0 Vdc)	I_{DSS}	—	—	5	mA
On Characteristics					
Gate Threshold Voltage (1) (V_{DS} = 10 Vdc, I_D = 1600 μAdc)	$V_{GS(th)}$	1	1.63	3	Vdc
Gate Quiescent Voltage (2) (V_{DD} = 50 Vdc, I_D = 150 mAdc, Measured in Functional Test)	$V_{GS(Q)}$	1.5	2.2	3.5	Vdc
Drain-Source On-Voltage (1) (V_{GS} = 10 Vdc, I_D = 4 Adc)	$V_{DS(on)}$	—	0.28	—	Vdc
Dynamic Characteristics (1)					
Reverse Transfer Capacitance (V_{DS} = 50 Vdc ± 30 mV(rms)ac @ 1 MHz, V_{GS} = 0 Vdc)	C_{rss}	—	3.3	—	pF
Output Capacitance (V_{DS} = 50 Vdc ± 30 mV(rms)ac @ 1 MHz, V_{GS} = 0 Vdc)	C_{oss}	—	147	—	pF
Input Capacitance (V_{DS} = 50 Vdc, V_{GS} = 0 Vdc ± 30 mV(rms)ac @ 1 MHz)	C_{iss}	—	506	—	pF
Functional Tests (2) (In Freescale Test Fixture, 50 ohm system) V_{DD} = 50 Vdc, I_{DQ} = 150 mA, P_{out} = 1000 W Peak (200 W Avg.), f = 130 MHz, 100 μsec Pulse Width, 20% Duty Cycle					
Power Gain	G_{ps}	24	26	28	dB
Drain Efficiency	η_D	69	71	—	%
Input Return Loss	IRL	—	-16	-9	dB

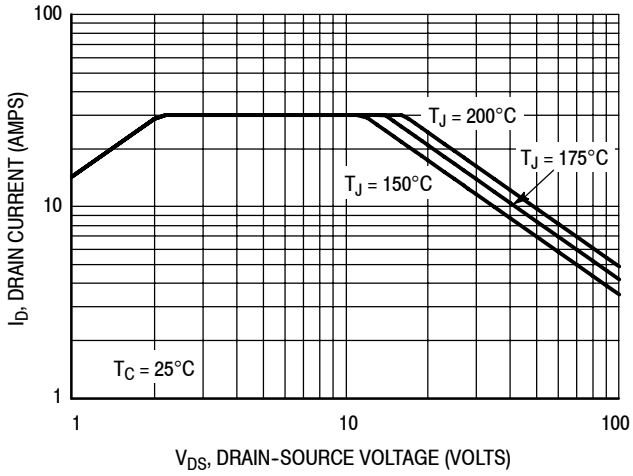
1. Each side of device measured separately.
2. Measurement made with device in push-pull configuration.

TYPICAL CHARACTERISTICS



Note: Each side of device measured separately.

Figure 4. Capacitance versus Drain-Source Voltage



Note: Each side of device measured separately.

Figure 5. DC Safe Operating Area

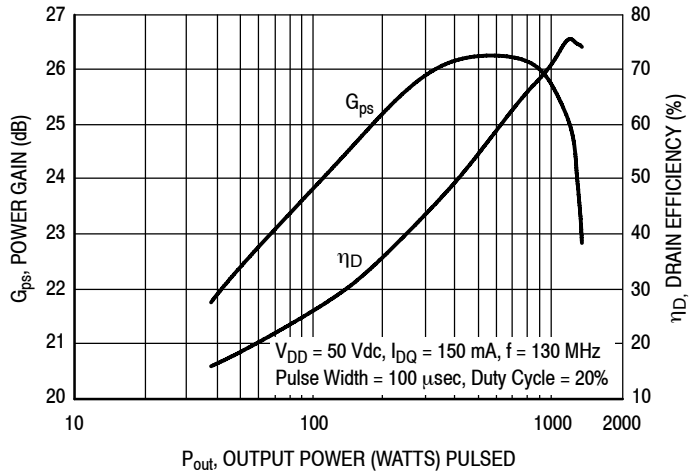


Figure 6. Pulsed Power Gain and Drain Efficiency versus Output Power

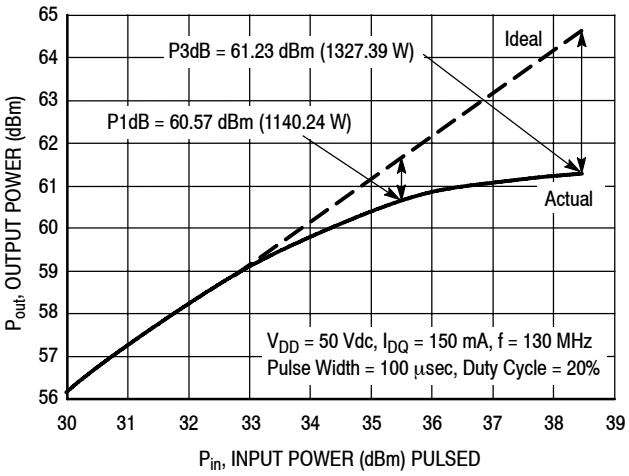


Figure 7. Pulsed Output Power versus Input Power

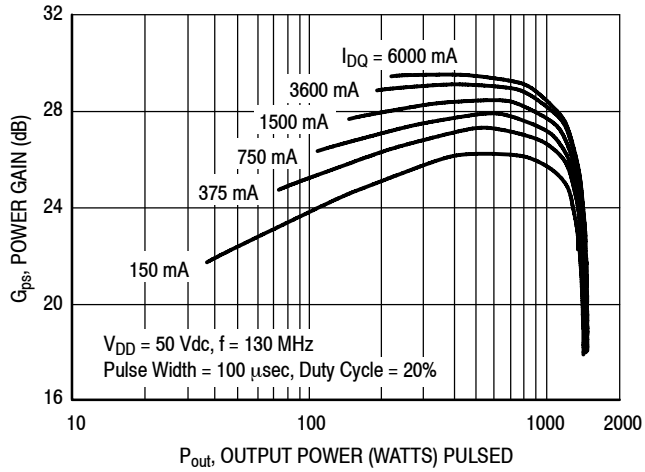


Figure 8. Pulsed Power Gain versus Output Power

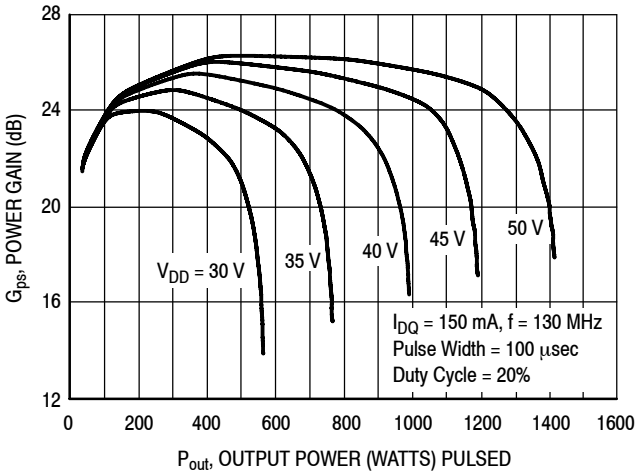


Figure 9. Pulsed Power Gain versus Output Power

TYPICAL CHARACTERISTICS

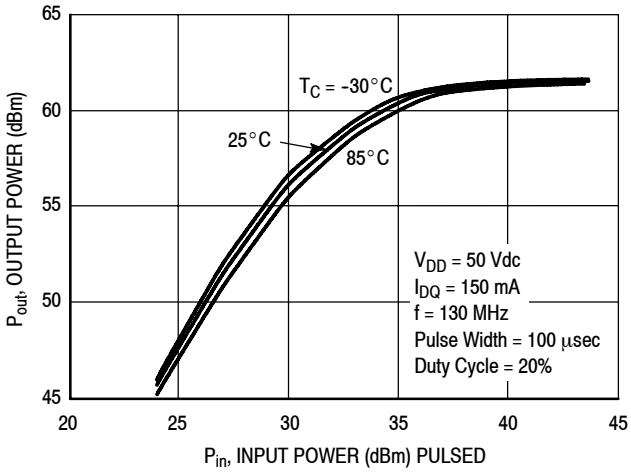


Figure 10. Pulsed Output Power versus Input Power

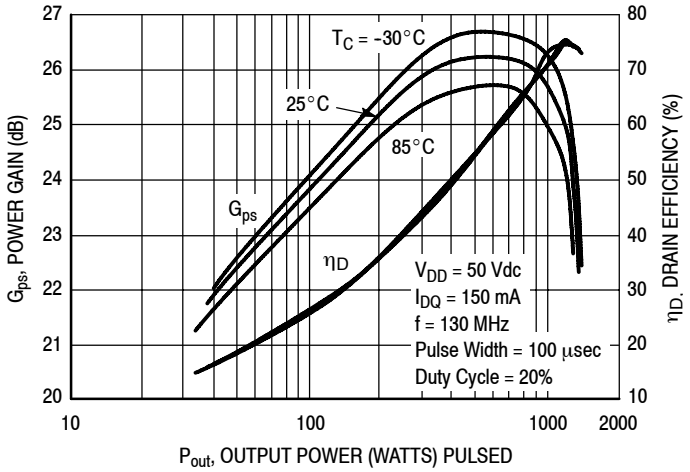


Figure 11. Pulsed Power Gain and Drain Efficiency versus Output Power

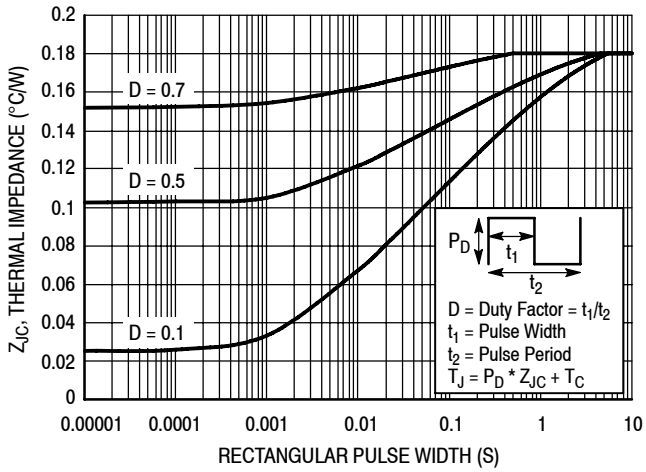
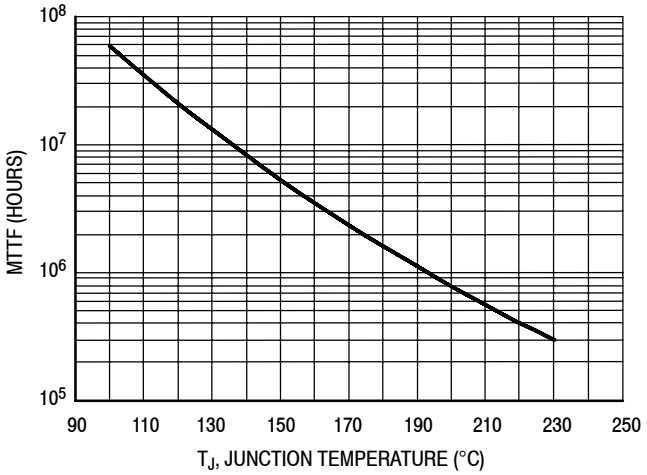


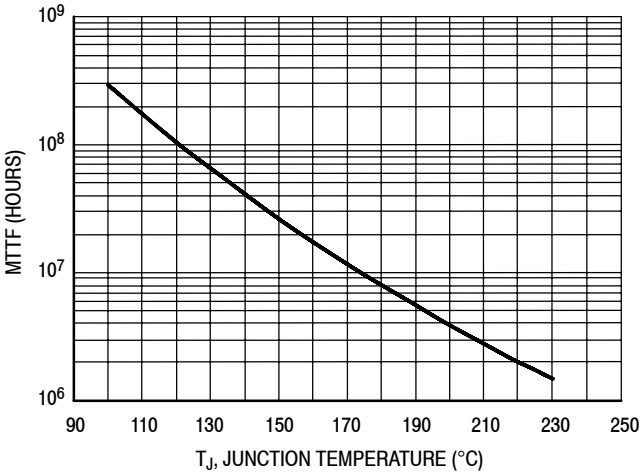
Figure 12. Maximum Transient Thermal Impedance



This above graph displays calculated MTTF in hours when the device is operated at V_{DD} = 50 Vdc, P_{out} = 1000 W CW, and η_D = 72%.

MTTF calculator available at http://www.freescale.com/rf. Select Software & Tools/Development Tools/Calculators to access MTTF calculators by product.

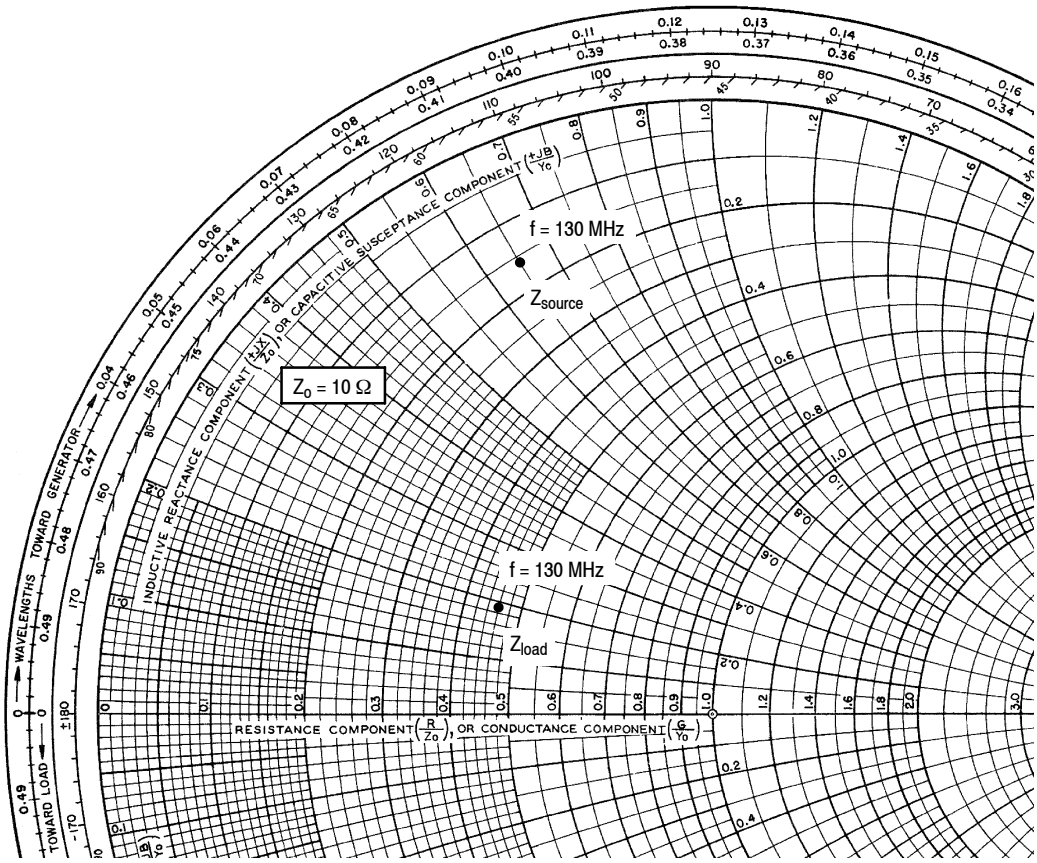
Figure 13. MTTF versus Junction Temperature – CW



This above graph displays calculated MTTF in hours when the device is operated at V_{DD} = 50 Vdc, P_{out} = 1000 W Peak, Pulse Width = 100 μsec, Duty Cycle = 20%, and η_D = 71%.

MTTF calculator available at http://www.freescale.com/rf. Select Software & Tools/Development Tools/Calculators to access MTTF calculators by product.

Figure 14. MTTF versus Junction Temperature – Pulsed



V_{DD} = 50 Vdc, I_{DQ} = 150 mA, P_{out} = 1000 W Peak

f MHz	Z_{source} Ω	Z_{load} Ω
130	1.58 + j6.47	4.6 + j1.85

Z_{source} = Test circuit impedance as measured from gate to gate, balanced configuration.

Z_{load} = Test circuit impedance as measured from drain to drain, balanced configuration.

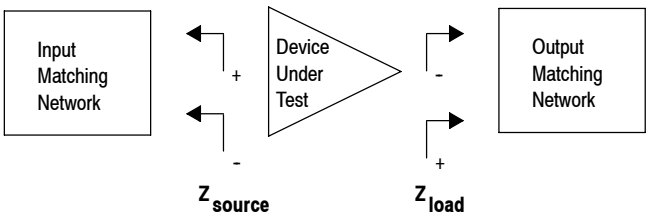
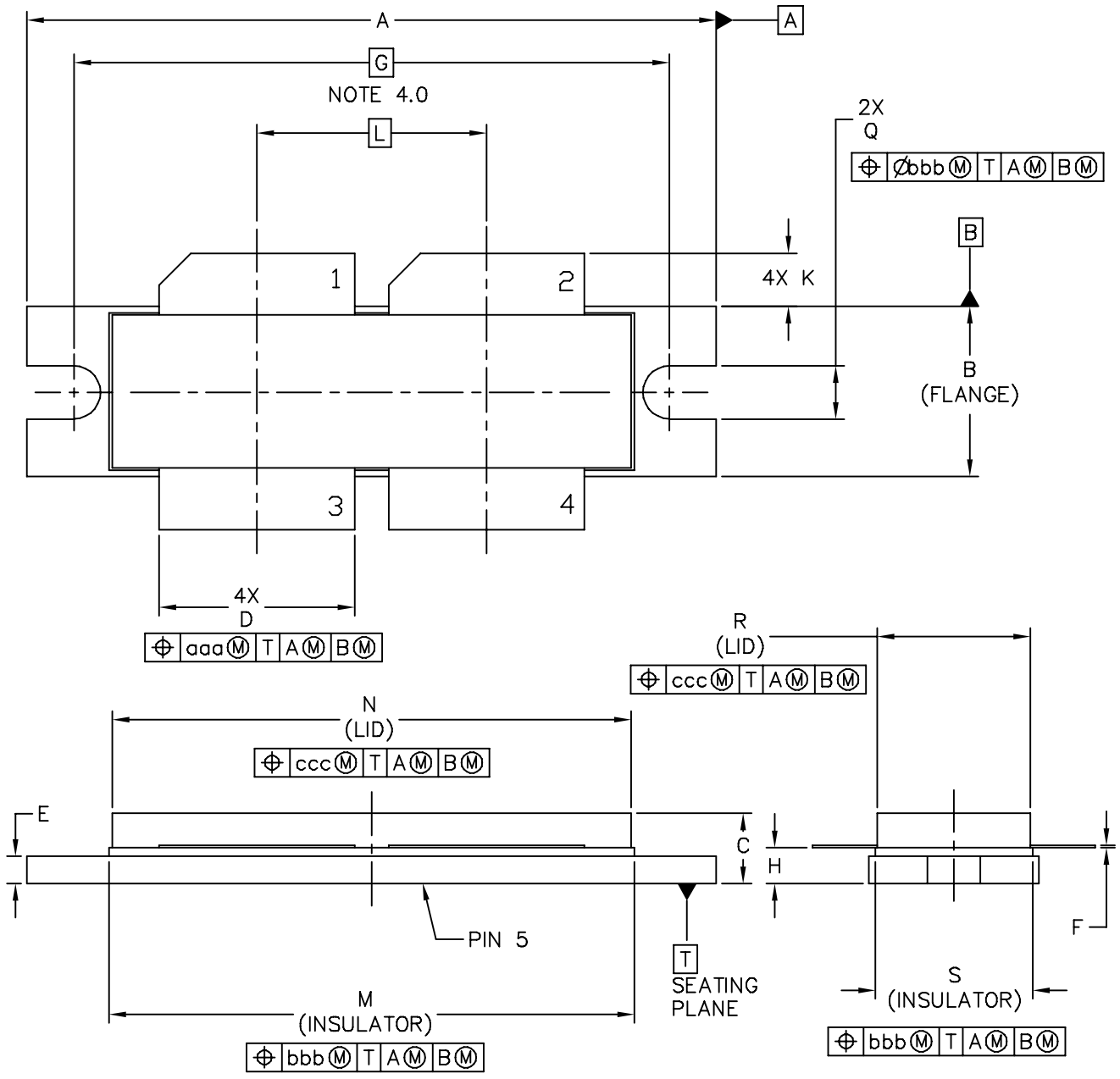


Figure 15. Series Equivalent Source and Load Impedance

PACKAGE DIMENSIONS



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TITLE: NI−1230	DOCUMENT NO: 98ASB16977C	REV: E
	CASE NUMBER: 375D−05	31 MAR 2005
	STANDARD: NON−JEDEC	

NOTES:

1. 0 INTERPRET DIMENSIONS AND TOLERANCES
PER ASME Y14. 5M–1994.

2. 0 CONTROLLING DIMENSION: INCH

3. 0 DIMENSION H IS MEASURED . 030 (0. 762)
AWAY FROM PACKAGE BODY.

4. 0 RECOMMENDED BOLT CENTER DIMENSION OF
1. 52 (38. 61) BASED ON M3 SCREW.

STYLE 1:
PIN 1 – DRAIN
2 – DRAIN
3 – GATE
4 – GATE
5 – SOURCE

DIM	INCH MIN	INCH MAX	MILLIMETER MIN	MILLIMETER MAX	DIM	INCH MIN	INCH MAX	MILLIMETER MIN	MILLIMETER MAX
A	1.615	1.625	41.02	41.28	N	1.218	1.242	30.94	31.55
B	.395	.405	10.03	10.29	Q	.120	.130	3.05	3.3
C	.150	.200	3.81	5.08	R	.355	.365	9.01	9.27
D	.455	.465	11.56	11.81	S	.365	.375	9.27	9.53
E	.062	.066	1.57	1.68					
F	.004	.007	0.1	0.18					
G	1.400 BSC		35.56 BSC		aaa	.013		0.33	
H	.082	.090	2.08	2.29	bbb	.010		0.25	
K	.117	.137	2.97	3.48	ccc	.020		0.51	
L	.540 BSC		13.72 BSC						
M	1.219	1.241	30.96	31.52					

MECHANICAL OUTLINE | PRINT VERSION NOT TO SCALE

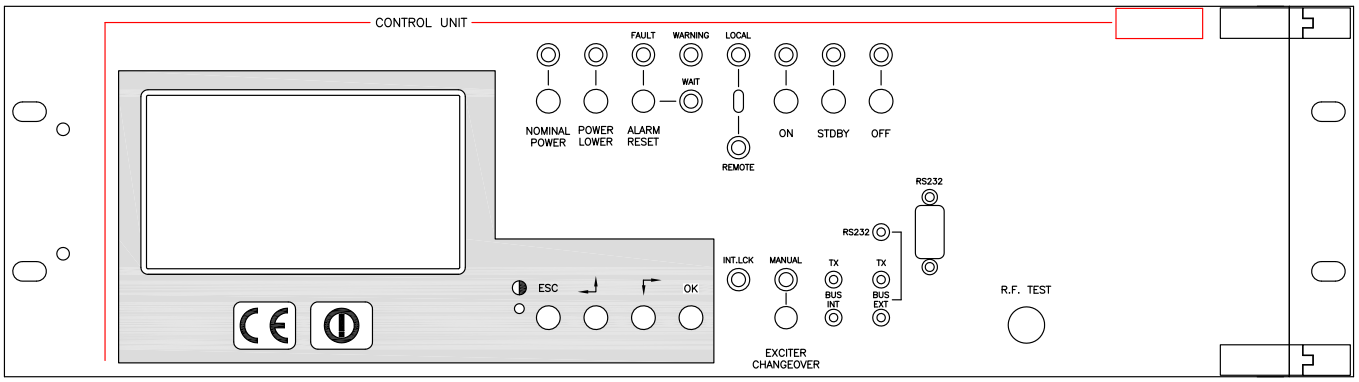
TITLE:	DOCUMENT NO: 98ASB16977C	REV: E
NI–1230	CASE NUMBER: 375D–05	31 MAR 2005
	STANDARD: NON–JEDEC	

5. Control unit (CU)

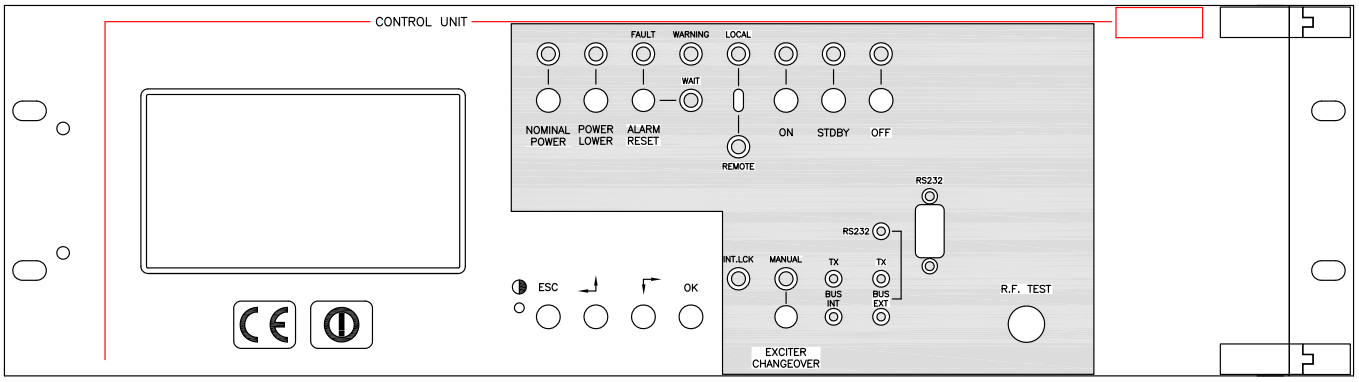
The operator controls and checks the status of the PJ10KPS-CA by means of the control unit (CU).

Two control groups are present on this unit:

• LCD and scroll buttons



• Buttons, selector switches and LEDs



5.1 LCD Display

The operator uses the control software of the transmitter by means of a series of menus that are displayed on the LCD. Four specific keys are provided for scrolling through the menus, performing the settings and giving the commands:

Pulsante	Descrizione
OK	Click this button to access a sub-menu, to enter the editing mode or to confirm a modified value.
ESC	Click this button to exit from a menu or to cancel the modification of a value.
	Click this button to scroll inside a menu (to the right or down) or to reduce the value of a parameter being modified.
	Click this button to scroll inside a menu (to the left or up) or to increase the value of a parameter being modified.
	Trimmer for the regulation of the contrast of display the LCD

When the operator is not using the various buttons to navigate, the LCD displays the preset screenful that shows the “Output Power” that it indicates the forward and reflected output power (Figure 5-1).
As indicated on the preset screenful, push the ESC button to access at the “Overall Status” menù (Figure 5-2).

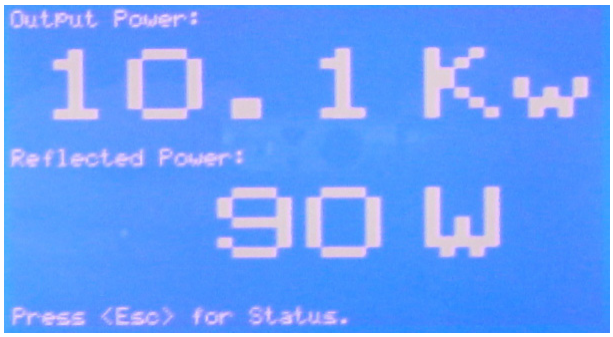


Figure 5-1

5.1.1 Overall Status Menu

This menu includes only indications, therefore the user cannot insert any input in its different lines.(Figure 5-2).

Menù Line	Description
Timer (when enabled)	Indication of the start and stop times of the automatic power reduction feature - see “Settings” menù
Control unit	Status of the control unit (Off or On) and indication of the exciter actually connected to the amplifier (Exct.1 or Exct.2)
Power supply	Status of the power supply board
R.F. Combiner	Status of the RF combiner
R.F. Unit - N	Status of the Rf power amplifier number N (1° from the left)
Hours	Timer counting the hours of operation of the transmitter. For example, this indication is useful in order to define when a maintenance operation can be made

By pressing the Esc key as indicated on the last line, you can shift to the exchange screen from which you can have access to the “Select” menu (Figure 5-3).

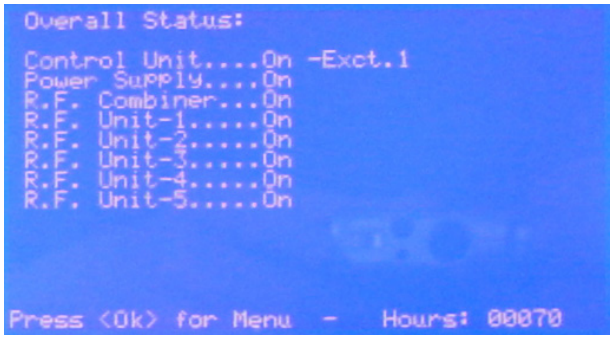


Figure 5-2

5.1.2 Select menu

This is the exchange menu from which you can select the different sub-menus that compose the software.(Figure 5-3).

In order to enter a sub-menu, select the correspondent line with the arrow buttons and press OK key.

Menu Line	Description
Control unit	General status of the PJ10KPS-CA
Power supply	Status of the power supply board
R.F. Combiner	Status of the RF combiner
R.F. Units	Status of the RF power amplifiers
Alarms	Summary of the occured alarms
Service	Service menu for the switching on/off of the modules
Settings	Setting of the parameters (i.e. Power levels)
Exciters	Parameters of the exciters (i.e. output power, on air exciter)
Info	Information concerning the configuration of the PJ10KPS-CA
Release	Information concerning the hardware and software versions of the modules composing the unit
Modem	Settings related to the optional telemetry system

To return to the predefined menu press key ESC many times.

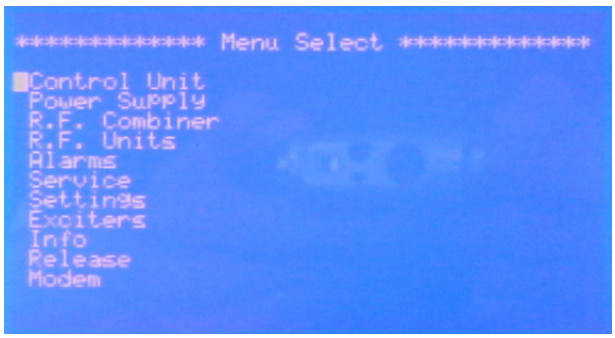


Figura 5-3

5.1.3 Control Unit menu

Informative menu on the inputs and the outputs of the CU of the machine.(Figure 5-4).

Menu Line	Description
Ext Intl	Input status “external interlock” (JP4/4 parallel interface)
Aux Intl	Input status “auxiliary interlock” (JP4/5)
Exc1 A.Audio	Input status “audio alarm exciter 1” (JP4/8)
Exc2 A.Audio	Input status “audio alarm exciter 2” (JP4/9)
L.P. Timer	Input status of the modality of automatic reduction of the power

Reserve 2	Input status “Reserve 2” (JP8/3)
Reserve 3	Input status “Reserve 3” (JP8/4)
Reserve 4	Input status “Reserve 4” (JP8/5)
Relay Exc	Exciters exchange relay status (Off = exciter 1 on air)
Exc-1 Mute	Exciter 1 interlock status (Off = RF power enabled)
Exc-2 Mute	Exciter 2 interlock status (Off = RF power enabled)
Audio Alarm	Output Audio Alarm status (JP47/1)
Exc’s Mains	Exciters power supply status (On = power supply enabled)
Stand_by (In)	“Stand by” input line status
Stand_by (Out)	“Stand by” output line status from the control unit
Total Eff	Total efficiency of the machine

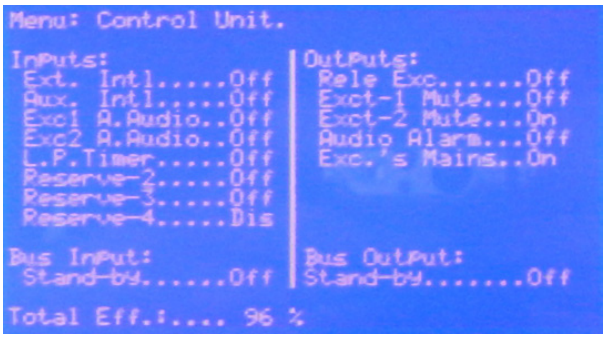


Figure 5-4

5.1.4 Power supply menu

informative menu of PJ10KPS-CA of the machine (Figure 5-5).

Menu Line	Description
Bus Fan	Supply voltage of the fans input
Room T	Temperature of the air at the input of the unit
Safety	Status of the safety arrest button. On indicates the functioning is enabled, Alr means the unit was arrested through the button
Mains	Status of the main voltage supply. Ok indicates the presence of all phases and that their sequence is corrected, Alr means that it must verify the presence of all phases,their sequence or the fuse of one or more phases, to protection of the threephase control *
Clk. Blower	Indicates the state of thermostat outlet air
C.B. Pwr. Fan	Indicates the state of motor protection switch input air
C.B. Blower	Indicates the state of motor protection switch output air
Top Blower	Indicates the state of the exhaust fan
K.M.G.	Indicates the status of the contactor general, of the machine (not used)
Power Fan	Indicates the state of input fan

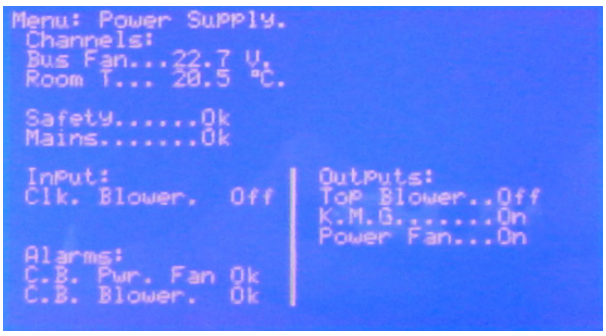


Figure 5-5

* The threephase control and the relative fuses are found on electromechanical section.

5.1.5 R.F. Combiner menu

This menu contains the information related to the RF part of the complete transmitter. (Figure 5-6).

Menu Line	Description
Fwd	Overall emitted RF power of the transmitter
Rfl	Reflected RF power of the antenna
Unbal	Unbalancement RF power: sum of the power dissipated on the internal resistors due to unbalanecement in the RF modules
Rej.IT	Temperature of the load resistors dissipating the unbalancement power
Exhaust	Temperature of the exhaust air (top of the transmitter)
S.W.R.	Standing Wave Ratio, calculated by the Control Unit on the basis of the measured forward and reflected power
(External) Fwd	Forward power of an external transmitter (when configured for this function)
(External) Rfl	Reflected power of an external transmitter (when configured for this function)
(External) Unbal	Unbalancement power of an external transmitter (when configured for this function)
Main Exc	Output power of the exciter currently on air (the one connected to the input of the RF modules)
Stby Exc	Output power of the exciter currently on the internal dummy load
Temp	Status of the temperature alarm (sensor included in the combiner)
RF-Enb	RF output enable: “On” means that the RF combiner unit is giving its permission for the regular operation of the transmitter
Aux.Fan	Switch for an auxiliary fan (not used in the current configurations)
SET1	Status of the output “SET1”. See the Settings Menu
SET2	Status of the output “SET2”. See the Settings Menu
SET3	Status of the output “SET3”. See the Settings Menu
SET4	Status of the output “SET4”. See the Settings Menu

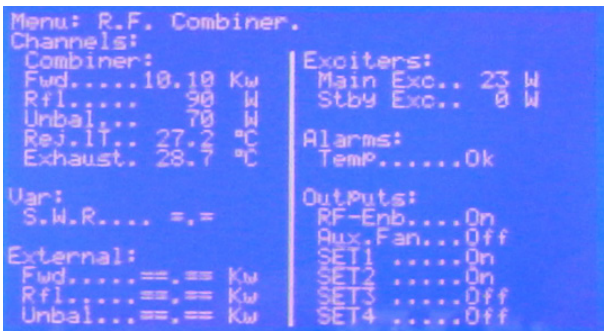


Figure 5-6

5.1.6 R.F. Units menu

Information menu showing the status of the RF power amplifier modules. (Figure 5-8). It is composed of 5 screens, one for each module, that can be scrolled using the arrow buttons.

Menu Line	Description
Fwd	Measurement of the forward power of the amplifier module
Rfl	Measurement of the reflected power of the amplifier module
Input	Measurement of the driving power at the input of the amplifier module
V.P.A.	Measurement supply voltage of the module (generated from the switching power supply included in each module)
Bias.V	Polarization voltage of the mosfet
Temp	Module temperature
Driver.I	Measurement of the current absorbed by the preamplifier stage
MOS-N (1-3)	Measurement of the current absorbed by the MOS N amplifier module (each RF module contains 3 MOS modules)
Total I	Measurement of the total current absorbed by the RF module
Eff	Efficiency of the amplifier module
(Alarms) Temp	Temperature alarm
(Alarms) PS-Alr	Anomaly in power supply
(Alarms) Unit.Intl	State of the RF module interlock micro-switch
(Alarms) Unbal	Not used
RF-Enb	Enabled of power distribution from part of the module
Fan	Percentage of fan speed of the cooling tray

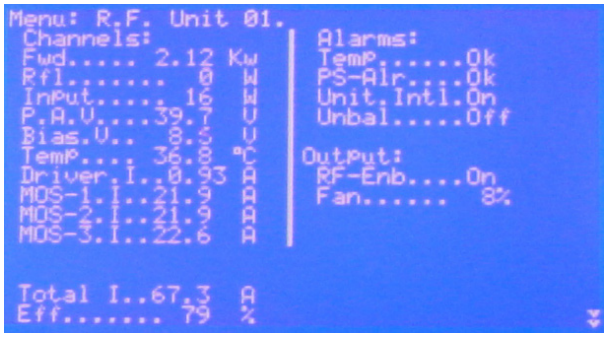


Figure 5-8

5.1.7 Alarms menu

This screen describes all the registered events which are relevant to determine the probable causes of any dysfunction. The screen is composed of a variable number of pages (up to 10) in function of the number of events occurred (Figure 5-9). The last events in chronological order are shown in the first page and so on. To shift to the different pages, use the arrow buttons

It is not possible to cancel the alarms visualized in this menu if not by personal RVR

Menu Column	Description
Unit	Module of the system which generated the failure
Err	Type of failure and description. **For more information see chapter 5.3**
Time	Time (hrs and minutes) at which the failure occured
Date	Date at which the failure occured

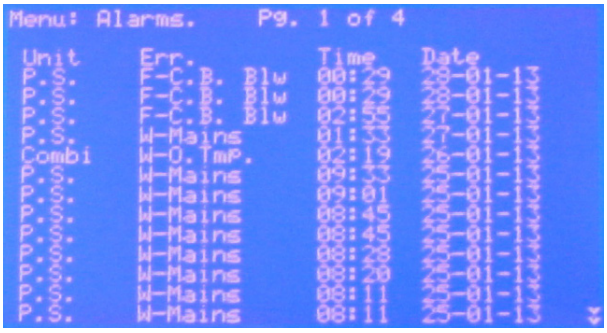


Figure 5-9

5.1.8 Service menu

This menu is normally used during the maintenance operations. When this screen is visualized, the Control Unit checks the status of the modules of the unit more frequently in order to have a visualization of the different parameters as fast as possible. When this menu is entered, all the secondary functions are interrupted, therefore a possible alarm may not be visualized and registered immediately; when exiting this menu all the alarms which were temporarily put in “stand-by” are registered. If the user sets some modules in OFF modality, these will be automatically reactivated when exiting the menu. This menu is deactivated after 60 minutes if no key is selected. (Figure 5-10).

Menu Line	Description
Fwd	Forward power globally emitted by the amplifier
Unb	Unbalancing power dissipated in the dummy load connected to the combiner
RF Unit1 - On	Fields used to switch ON and OFF the amplifier modules.
Fwd	Forward power generated by the RF module
Rfl	Reflect power from the RF module

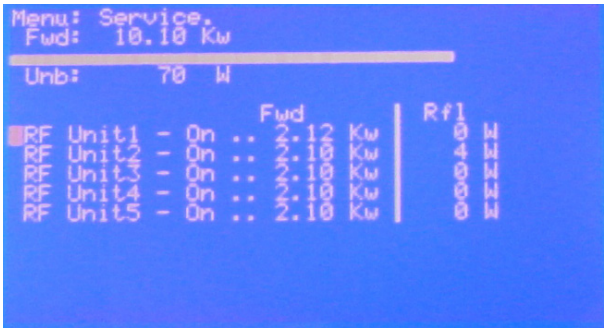


Figure 5-10

5.1.9 Settings menu

This menu is used for the settings of the unit. It is therefore the menu which is used more often apart from the possible maintenance operations.(Figure 5-11).

Menu Line	Description
Nominal Pwr	Setting of the level of nominal power, expressed as a percentage of the maximum power level. This is the level that the PJ10KPS-CA must reach when the Power Nominal button is pressed, except in case of dysfunction
Low Power	Setting of the reduced power level, expressed as a percentage of the maximum power level. This is the level that the PJ10KPS-CA must reach when the Power Lower button is pressed, except in case of dysfunction.
SET1	Level (Limit) at which the first “Power Good” level SET1 is launched. This level is expressed as a percentage of the full-scale to which SET1 is connected, indicated in the column Assign
SET2	Level (Limit) at which the second “Power Good” level SET2 is launched. This level is expressed as a percentage of the full-scale to which SET2 is connected, indicated in the column Assign
SET3	Level (Limit) at which the first “Reflected power” level SET3 is launched. This level is expressed as a percentage of the full-scale to which SET3 is connected, indicated in the column Assign
SET4	Level (Limit) at which the second “Reflected power” level SET4 is launched. This level is expressed as a percentage of the full-scale to which SET4 is connected, indicated in the column Assign
Exc’ wait time	Delay before assuming the on air exciter is faulty
Talk Address	Address of the unit in the RS485 network
Time	Visualization and setting of the internal clock of the unit
Date	Visualization and setting of the internal calendar of the unit
L.P. Timer	Setting of the automatic power reduction feature: this can be “Auto” (enabled) or “Manual” (disabled). The feature consists in reducing the power to the low power level and then returning to the nominal power at fixed times. The start and stop times are set in this menu selecting “Auto”.
Write Config	Button for the registration of the configurations in each module of the unit.

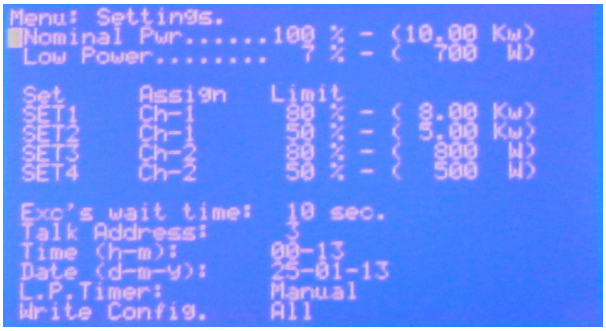


Figure 5-11

5.1.10 Exciters menu

This menu is used to configure the settings of the exciters (Figure 5-12).

Menu Line	Description
Main Exc	Output power of the exciter currently on air
Stdby Exc	Output power of the exciter currently on the internal dummy load
Main Exciter	Visualization of the “on air” exciter. When positioning the cursor on this line, with the arrow buttons and by pressing Enter, it is possible to operate the switching between the on air exciter and the exciter on dummy load.
Exct.1	Status of the exciter 1. By positioning the cursor on this line with the arrow buttons and by pressing Enter it is possible to switch on and off the exciter.
Exct.2	Same as Exct.1 for the second exciter

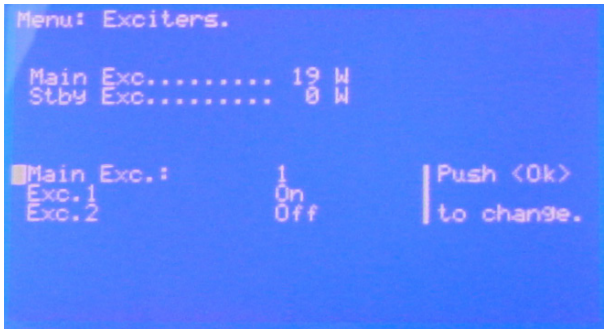
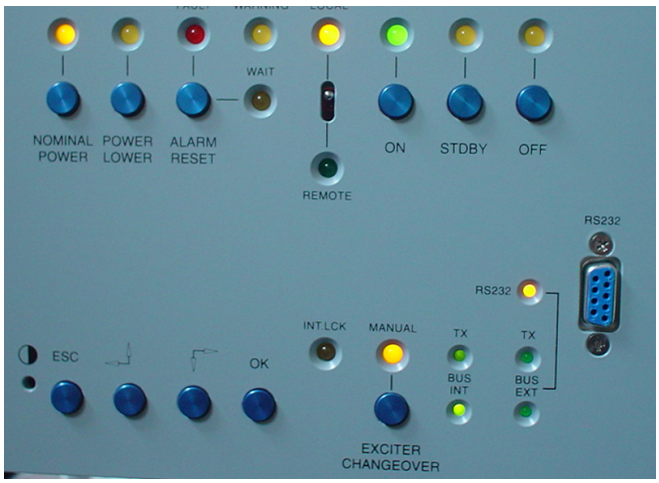


Figure 5-12



Note: the exchange of the exciter and the relative cursor are available only if the logic of exchange is set to manual and the yellow LED is lit.

5.1.11 Info menu

This screen informs the user about the configuration of the transmitter. (Figure 5-13).

Menu Line	Description
S.N.	Serial number of the transmitter
Talk Addr.	Address of the RS485 port of the transmitter,it must be obligatorily 3
Baud Rate	Baud rate of the serial port
Software V.	Software version installed in the CU
Exciter	Number of the exciters in the transmitter: this can be “Single” or “Dual”
Cfg. N+1	Configuration of the transmitter as a N+1 system
External	Checking of the external Fwd, Rfl, Unbal values (Enabled or Disabled)
Reset Safety	Reboot the machine after the intervention of the SAFETY alarm. It must always be “Auto”
Polarization	The machine is designed to be able to transmit in the future, even with digital signals. To do this we need to change parameters on both the tensions of active devices, both on the readings of the parameters. Activating the “Analog”, the machine operates in classic analog configuration, putting “Digital” can process and transmit the digital signals.

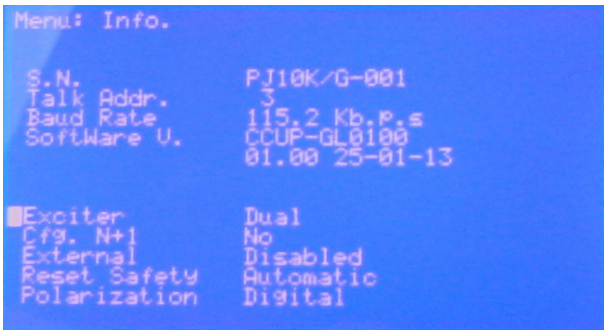
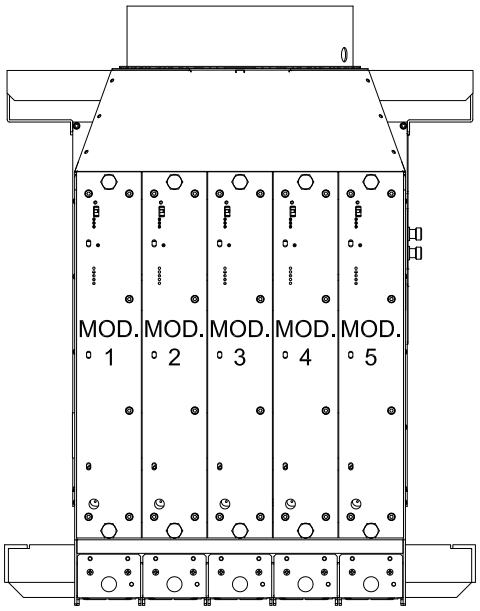


Figure 5-13

5.1.12 Release menu

This menu is composed of 2 screens, that can be scrolled using the arrow buttons. The first show the address, the kind of configuration, the software version and the hardware version of all the microprocessor boards of the transmitter (Figure 5-14), the second shows the serial numbers of the modules (Figure 5-14a).

Menu Line	Description
Control unit	Information on the CU
Power supply	Information on the power supply
RF Combiner	Information of the RF combiner
RF Unit 1	Information on module 1
RF Unit 2	Information on module 2
RF Unit 3	Information on module 3
RF Unit 4	Information on module 4
RF Unit 5	Information on module 5



Menu Line	Description
S.N. -1	Year of production of the module
S.N. -2	Serial number of the module

Figure 5-14

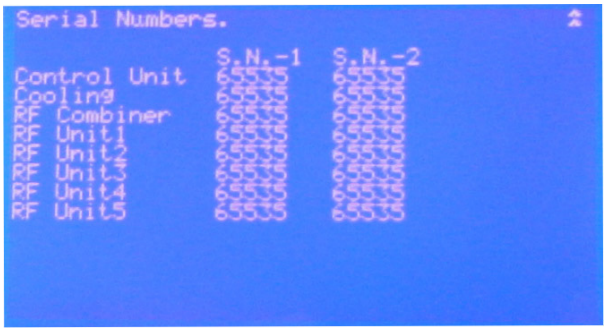


Figure 5-14a

5.1.13 Modem menu

This screen informs the user about the configuration of the optional telemetry GSM (Figure 5-15). The parameters on this screen can be displayed only if the selector switch on the CU is located at a REMOTE location, if it is placed in the LOCAL screen appears as in Figure 5-15a. If you have not installed the telemetry box, the screen will appear the figure 5-15b.

Menu Line	Description
I.D.	Identification of the address of the transmitter, usually 1. In the case of multiple transmitters in N +1 configuration will be given numbers in ascending order, one for each transmitter
Name	Mnemonic name of the station, like place or frequency
S.C.N	Service center number of your mobile operator
Info	Name of service provider
Dial	Normally, ATDT
Phone	Phone numbers that will receive the alert messages
Level	GSM signal level
Status	State Modem
Retry	Number of messages to send. We suggest to set this value to at least 2, in case of problems with the SMS Service Centre.
Type	Modem type, usually GSM

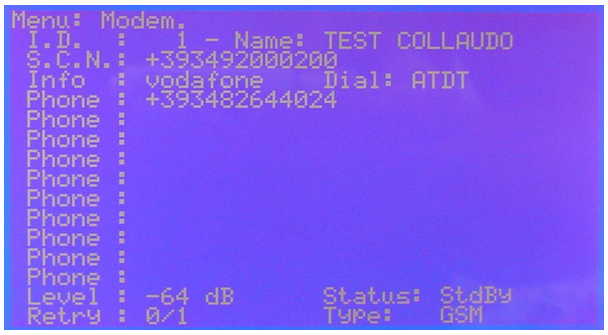


Figure 5-15

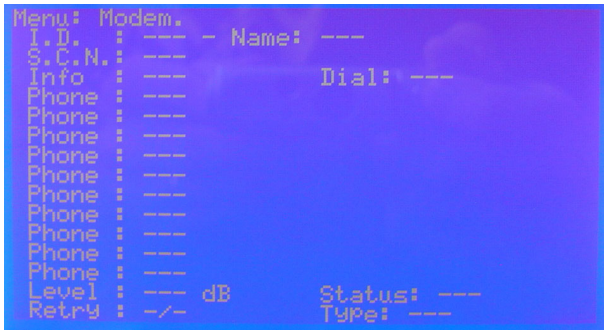


Figure 5-15a

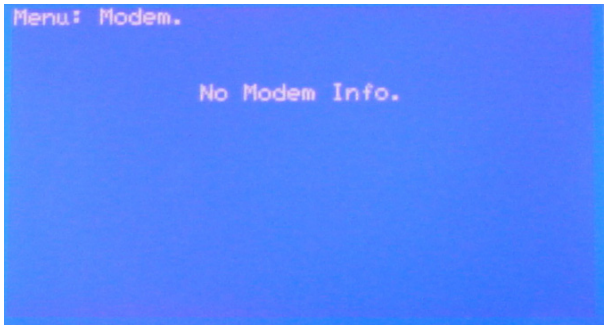


Figure 5-15b

5.2 Buttons, selector switches and LEDs

The typical machine-control operations are performed using the buttons of the control unit's panel. Specific LEDs correspond to each button and selector switch for indicating the machine's status.(Figure 5-16).

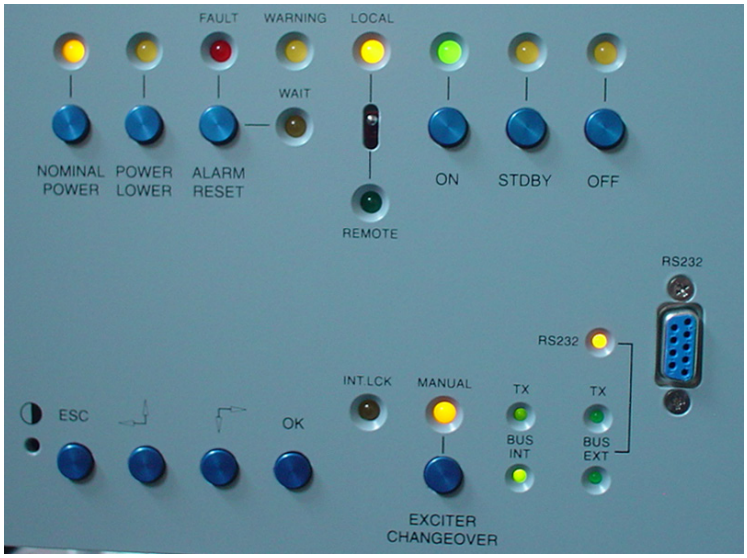


Figure 5-16

The functions performed by the controls are as follows:

Funzione	Descrizione
OFF	Button for turning off the machine. A LED signals that the machine is OFF. In this status, the exciters and the pumps,are off.
STDBY	Button for setting the machine in standby. In this status the transmitter does not emit any power, but is ready to start the transmission: the main blower is on, the RF modules are not powered, the exciters are on but locked by means of an interlock. The stand-by is used to test the exciters, in fact in manual modality the operator could arrange them in base to the own requirements; coming from an "On" in manual modality, the system does not touch the interlock. Stand-by status is signalled from a LED. In manual and in stand-by the inhibit of the device doesn't intervene on the interlock of the exciters. This could necessary when the apparatus is in configuration n+1 for verify if the exciters are operational.
ON	Button for turning on the transmitter. The RF power supply is activated. If the command is set to MANUAL CHANGEOVER EXCITER (led on), exciters will block interlock and have to go through in "exciters menu" of CU to enable them manually.The exciters should deliver a power of at least 15 W to start the transmitter.

LOC/REM	Selector switch for setting the transmitter in remote or local mode. In local mode the buttons and the controls via the menus are active. In remote mode the buttons and the controls via the menus are inhibited and the commands may be given only remotely via the parallel interface or via the remote control software.
ALARM RESET	Button to reset the alarm type FAULT or WARNING.
POWER LOWER	Click this button to set the transmitter for supplying the nominal power level. A specific LED signals this setting. The value that corresponds to the nominal level is set by the operator using the menu settings (see 5.1.9)
NOMINAL POWER	Click this button to set the transmitter for supplying the reduced power level. A specific LED signals this set-ting. The value that corresponds to the reduced level is set by the operator using the menus. (see 5.1.9)
EXCITER CHANGEOVER	Use this button to set the changeover system in manual or automatic mode. The signaling LED turns on when the manual mode is selected. On performing a changeover, the exciter connected to the amplifier is deviated toward the internal dummy load and vice-versa. The operator must use the exciters menu to perform the changeover in manual mode.
LED WARNING	This LED indicates an attention condition (something is not working properly, but the amplifier is still running)
LED FAULT	This LED indicates a fault (the amplifier is blocked, and required the intervention of an operator for the restoration)
LED WAIT	This LED indicates the status of waiting (the amplifier is temporarily disabled, but will be reactivated automatically when the blockage is removed, or after a set period of time depending on the type of protection)
LED INT.LCK	This LED indicates an external inhibition. This check is run on the parallel interface (JP4/4)
LED TX-BUS INT	These LEDs indicate the activity of the serial bus 485 through which the CU acquires the status every second of the modules
LED RS-232 TX-BUS EXT	These LEDs indicate the communication between the CU and a PC connected to the RS-232

5.3 Alarms

The menu Alarms of the control unit reports all the events connected to possible malfunctioning of the equipment or due to external causes.
Each registration contains the reference to the concerned module, the kind of event and its date and hour.

The module that detected the event is indicated by one of the following acronyms:
- C.U. (Control Unit)
- P.S. (Power supply)
- R.F. X (RF module number X - from 1 to 5)
- Combi (Combiner/Splitter)

The type of event allows to identify the origin and the consequence of the fault. The first letter of the type of event can be one of the following:

W "Wait" event that causes the temporary block of the piece of equipment that will be removed as soon as the problem is solved.

R "Retry", event that causes a temporary block of the piece of equipment, that will effect a restart attempt after a fixed lapse of time. (Max. 8 attempts)

F "Fault", event that causes the block of the equipment and requires the intervetion of an operator for the restart.

E "Error", event that doesn't cause the interruption of the supply of power, but can reduce the functions of the equipment (e.g cannot be done the changeover function of the exciters)

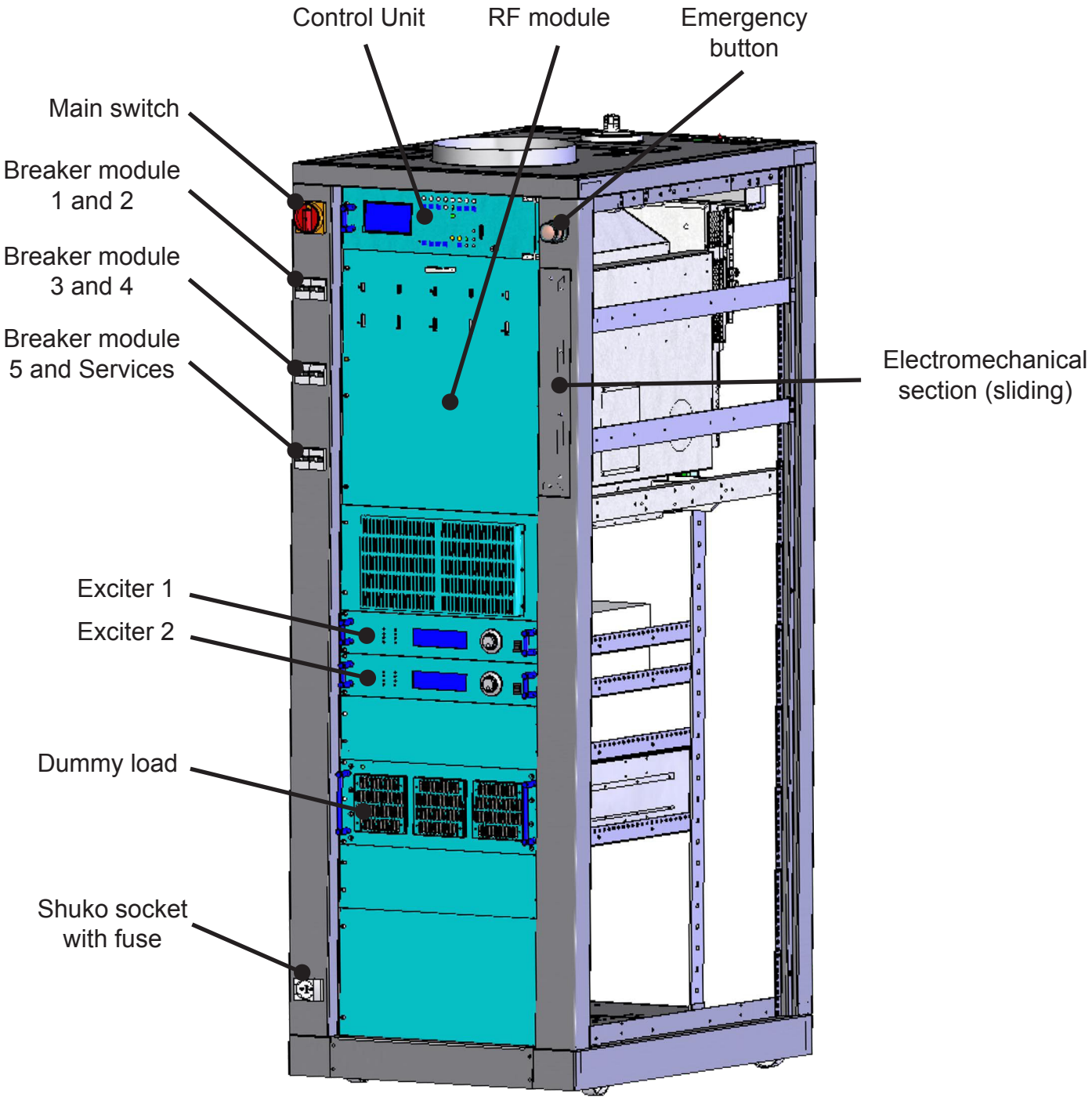
The possible event types are listed in the table below.

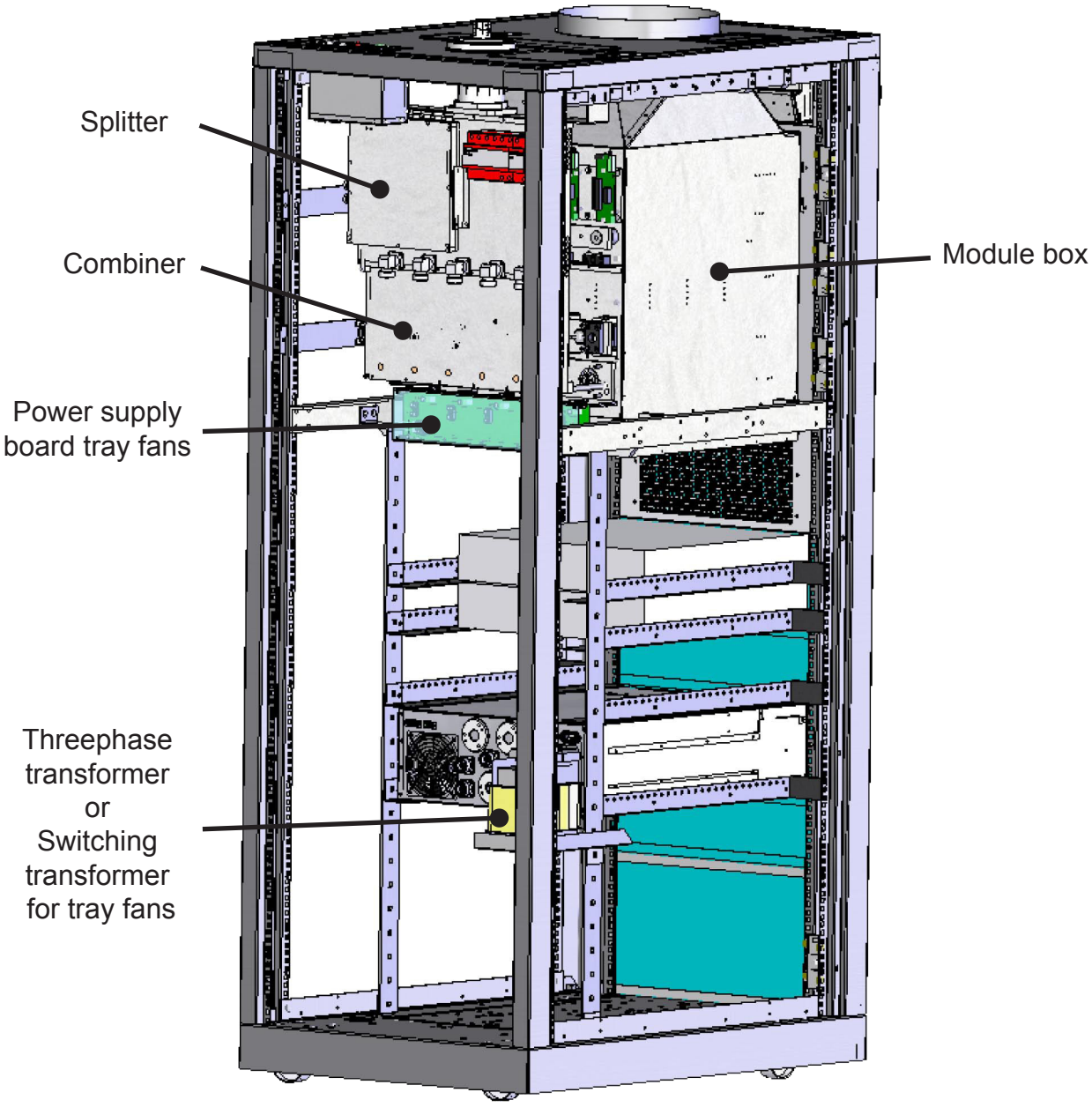
Code	Meaning
Control Unit	
-E.Intl	external interlock
-A.Intl	ausiliary interlock
-Audio-1	audio alarm of exciter 1 is active
-Audio-2	audio alarm of exciter 2 is active
-L.P.Tmr.	Low power timer active
-Ris-2	reserve 2 input is active
-Ris-3	reserve 3 input is active
-Ris-4	reserve 4 input is active
-Mute Flt	"Mute fault": the mute commands (i.e. the interlock commands for the exciters) are not working, they are not connected or the connection is wrong
-Xchg Exc	a changeover of the exciters has been performed
-Cfg. N+1	The machine is in Fault status because three changeover attempts havebeen performed (N+1 configuration)
Power Supply	
-Tmp.	the air inlet temperature is too high
-Mains	the phase sequence is not correct
-C.B. Top	The circuit breaker of the air extractor motor blocked it
-C.B. Blw	The circuit breaker of the blowers transformer blocked it

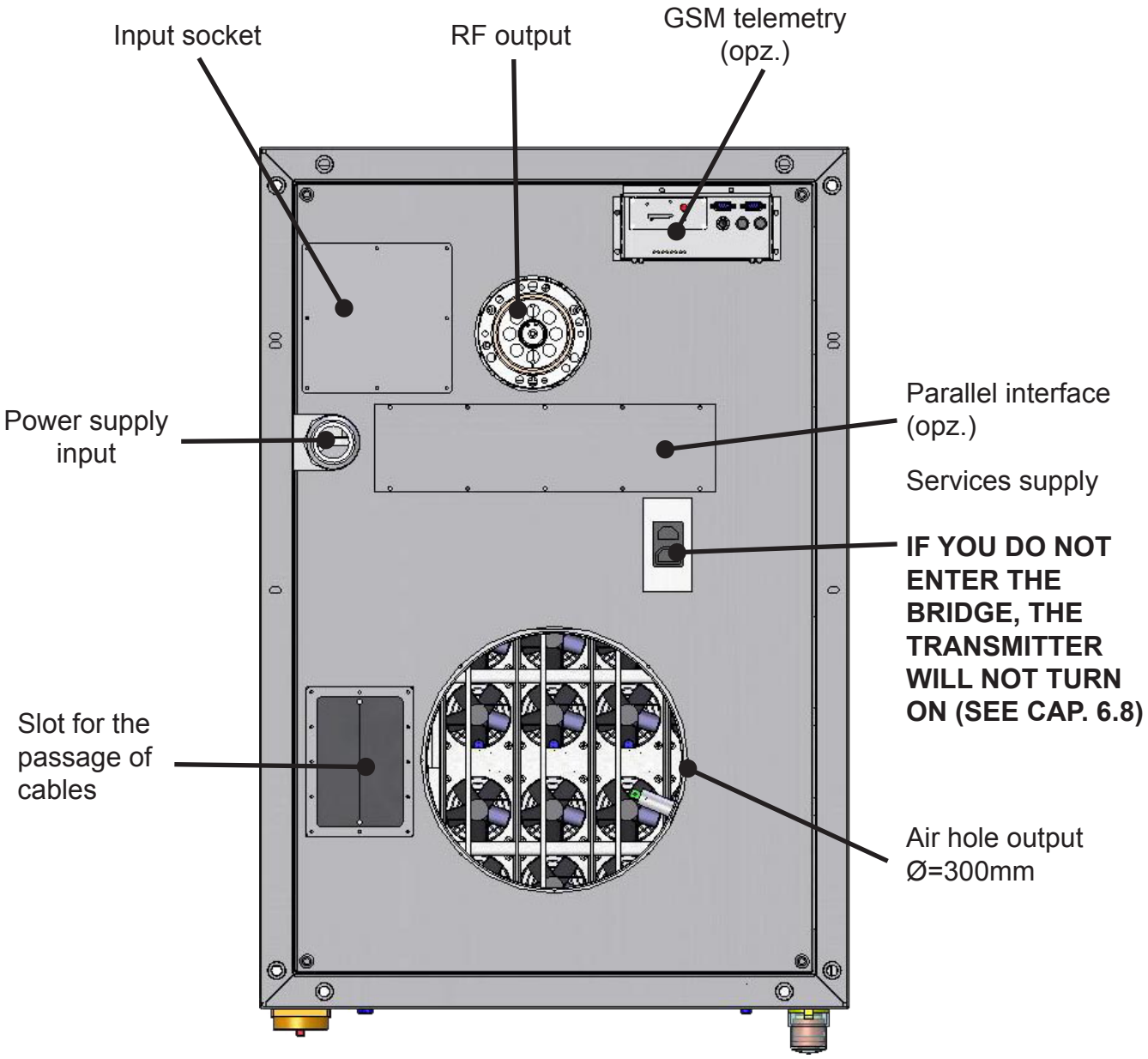
Combiner	
-Fwd	forward power above its limit
-Rfl	reflected power above its limit
-O.dvr In	overdrive (main exciter)
-O.dvr Ld	Too much power dissipated on the internal dummy load (stand by exciter)
-Unbal	Unbalancement power above its limit
-Rej.l.T	Overheating of the unbalancement (rejection) load resistors
-Exhaust	Exhaust overheating
-S.W.R.	SWR above its limit
-Ext.Alr.	external alarm for future use
R.F. Unit	
-Fwd	forward power alarm module
-Rfl	reflected power alarm module
-In	alarm input power module
-Tmp.	high temperature alarm
-Drv. I	driver current above its limit
-Mos 1 I	high current alarm mos1
-Mos 2 I	high current alarm mos2
-Mos 3 I	high current alarm mos3
-Eff.	efficiency too low
-PS-Alr	the power supply is not supplied or is broken
-O.Tmp.	overheating on the module's heatsink
-Unbal	unbalancement power above its limit
General	
-Replay err.	wrong answer by the module interrogated
-Safety	emergency button pressed
Time-out	the module does not respond
Default Talk Address: 31	default address for configuration
Device not configured	control unit is not configured
Waiting for Retry: xxxx sec.	to reset the pause time, press ok
Start Up in Progress	starting up
Please Wait	please wait.....

6. Wiring diagrams

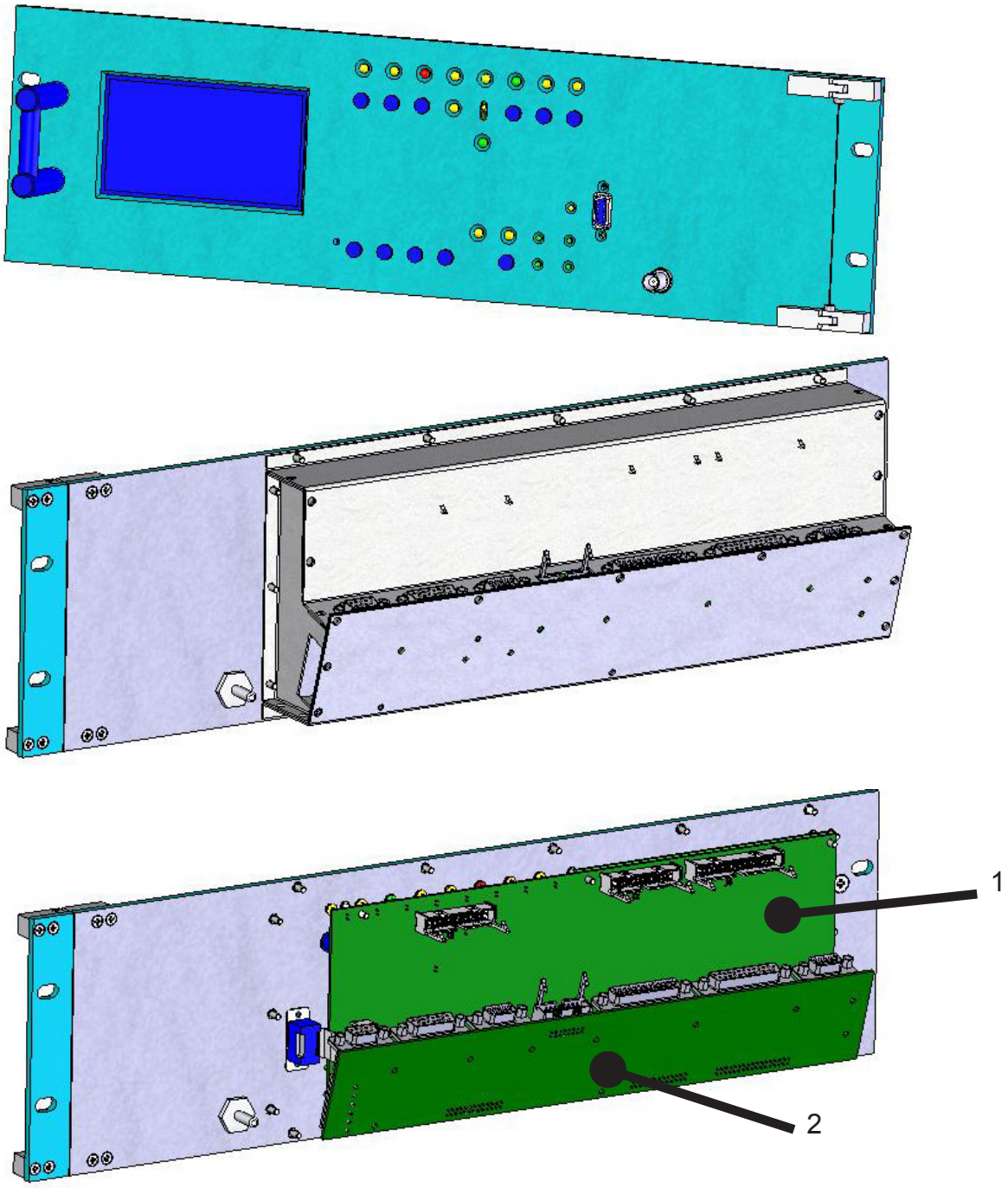
GENERAL VIEW




Splitter
Combiner
Power supply board tray fans
Threephase transformer or Switching transformer for tray fans
Module box

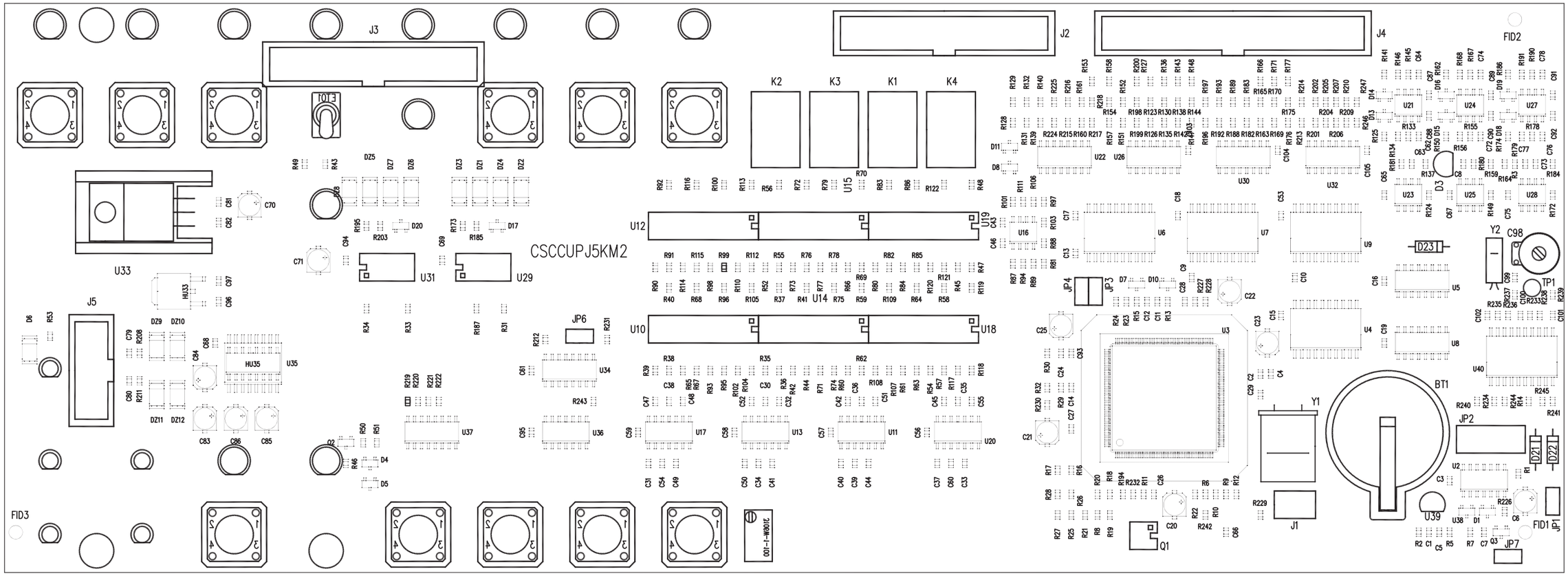

Input socket
RF output
GSM telemetry (opz.)
Power supply input
Parallel interface (opz.)
Services supply
IF YOU DO NOT ENTER THE BRIDGE, THE TRANSMITTER WILL NOT TURN ON (SEE CAP. 6.8)
Slot for the passage of cables
Air hole output Ø=300mm

6.1 Control unit (CU)



1 **CCU board (SLCCUPJ5KM2)**
2 **CCU motherboard (SLCCU1PJ5KM2)**

6.1.1 CCU board (SLCCUPJ5KM2)



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Autore:	Griptech - Rev.: Canazza	Data:	07/10/2002	Codice Progetto:	<>
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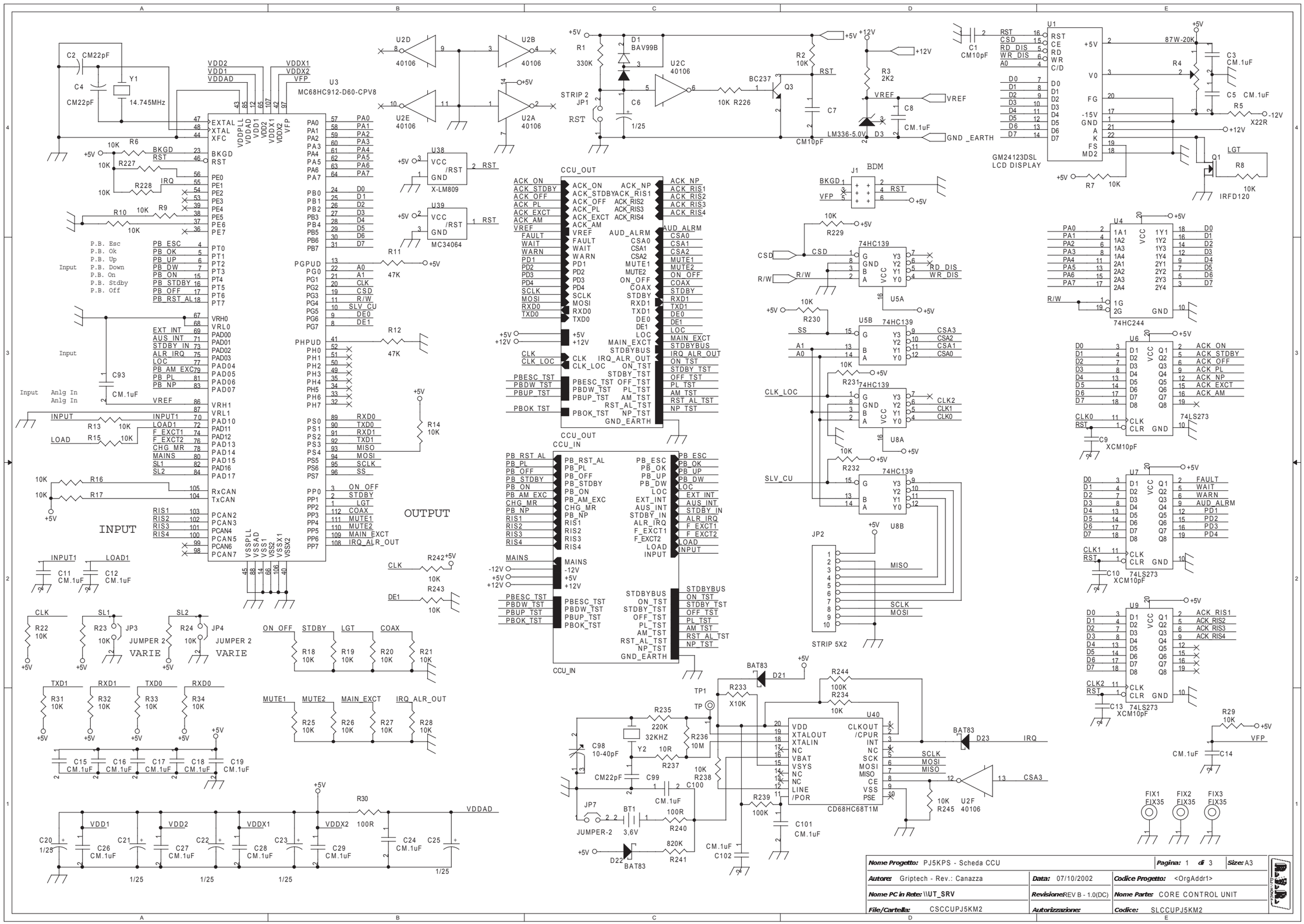
File/Cartella:	PJ5_CCU_MNT.DWG	Autorizzazione:		Codice:	SLCCUPJ5KM2
Scala: <>	Materiale: <>	Trattamento:	<>	Profilo:	<>


U3
MC68HC912-D60-CPV8
INPUT
OUTPUT
CCU_OUT
CCU_IN
U1
GM24123DSL
LCD DISPLAY
U4
74HC244
U5A
U5B
U8A
U8B
74HC139
U6
U7
U9
74LS273
U40
CD68HC68T1M
U2A
U2B
U2C
U2D
U2E
U2F
40106
J1
BDM
JP1
JP2
STRIP 5X2
JUMPER 2
VARIE
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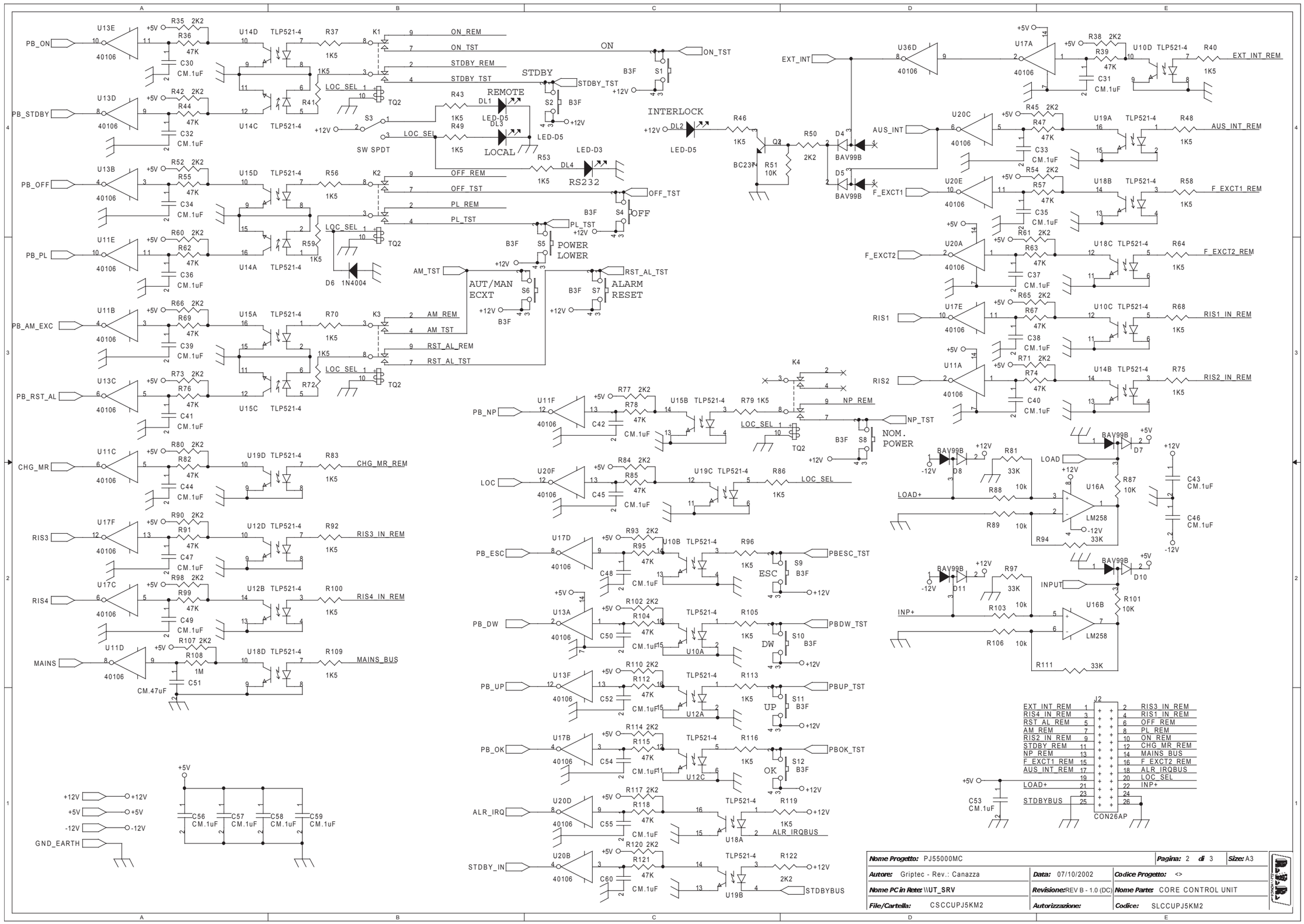
Pagina: 1 di 3
Size: A3
Autore: Griptech - Rev.: Canazza
Data: 07/10/2002
Codice Progetto: <OrgAddr1>
Nome PC in Rete: \\UT_SRV
Revisione: REV B - 1.0(DC)
Nome Parte: CORE CONTROL UNIT
File/Cartella: CSCCUPJ5KM2
Autorizzazione:
Codice: SLCCUPJ5KM2



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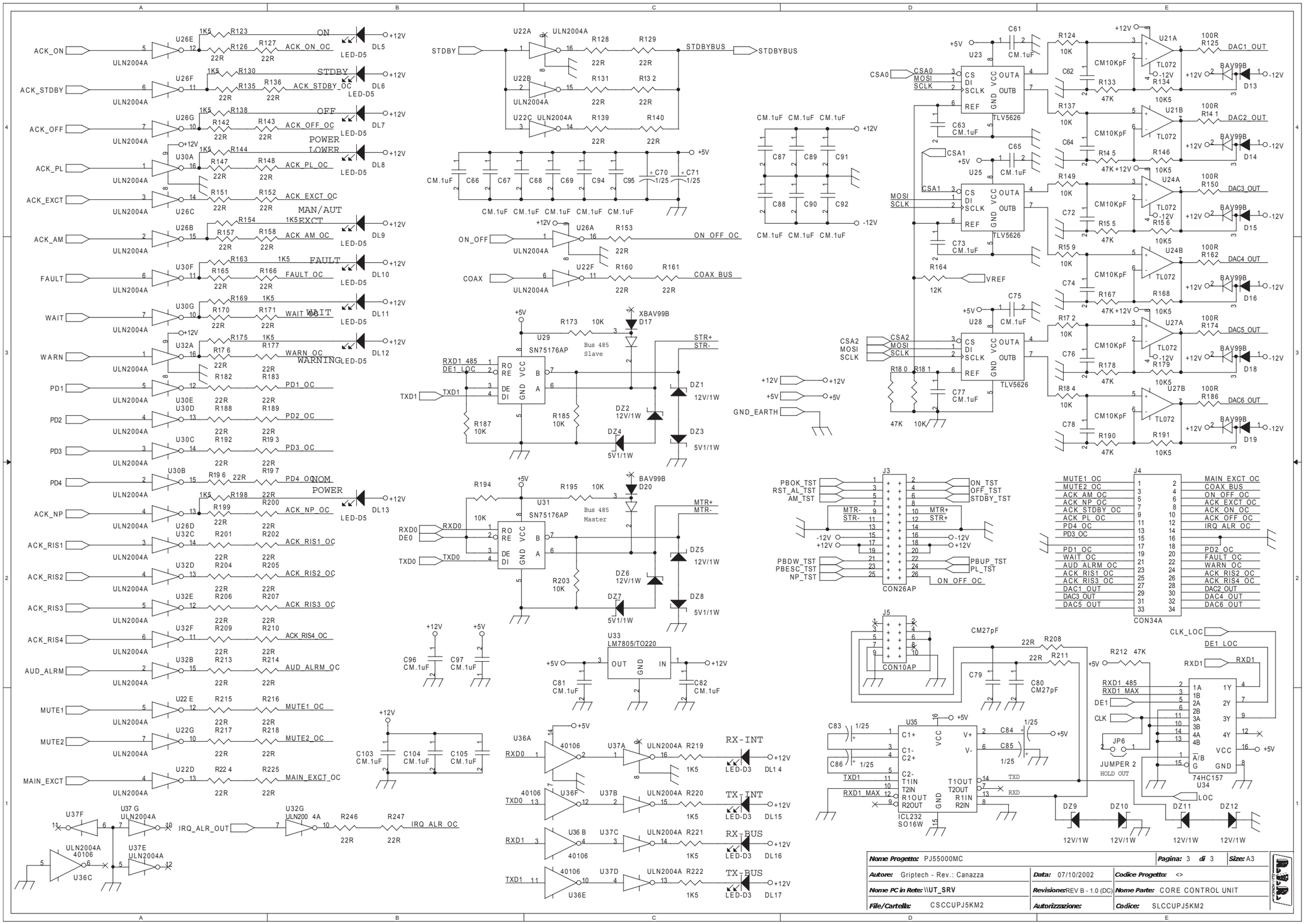
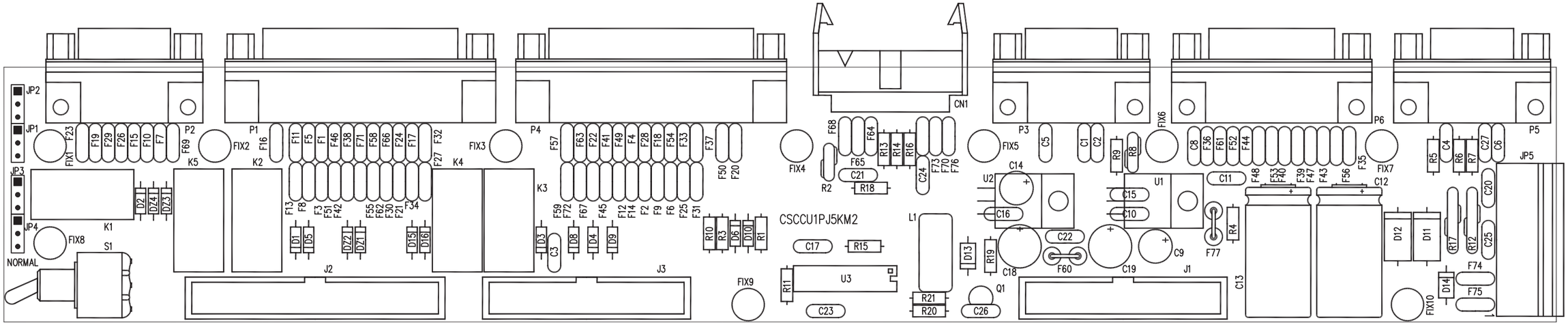
Autore: Griptec - Rev.: Canazza	**Data:** 07/10/2002	**Codice Progetto:** <>	
Nome PC in Rete: \\UT_SRV	**Revisione:** REV B - 1.0 (DC)	**Nome Parte:** CORE CONTROL UNIT	
File/Cartella: CSCCUPJ5KM2	**Autorizzazione:**	**Codice:** SLCCUPJ5KM2	


ACK_ON
ACK_STDBY
ACK_OFF
ACK_PL
ACK_EXCT
ACK_AM
FAULT
WAIT
WARN
PD1
PD2
PD3
PD4
ACK_NP
ACK_RIS1
ACK_RIS2
ACK_RIS3
ACK_RIS4
AUD_ALRM
MUTE1
MUTE2
MAIN_EXCT
ULN2004A
ON
STDBY
OFF
POWER
LOWER
MAN/AUT
EXCT
FAULT
WAIT
WARNING
LED-D5
+12V
STDBY
STDBYBUS
ON_OFF
ON_OFF_OC
COAX
COAX_BUS
SN75176AP
Bus 485
Slave
Master
RXD1 485
DE1_LOC
TXD1
RXD0
DE0
TXD0
XBAV99B
BAV99B
STR+
STR-
MTR+
MTR-
DZ1
DZ2
DZ3
DZ4
DZ5
DZ6
DZ7
DZ8
12V/1W
5V1/1W
RX-INT
TX-INT
RX-BUS
TX-BUS
LED-D3
IRQ_ALR_OUT
IRQ_ALR_OC
LM7805/TO220
CSA0
CSA1
CSA2
MOSI
SCLK
VREF
TLV5626
TL072
DAC1_OUT
DAC2_OUT
DAC3_OUT
DAC4_OUT
DAC5_OUT
DAC6_OUT
PBOK_TST
RST_AL_TST
AM_TST
PBDW_TST
PBESC_TST
NP_TST
ON_TST
OFF_TST
STDBY_TST
PBUP_TST
PL_TST
CON26AP
CON34A
CON10AP
MAIN_EXCT_OC
COAX_BUS
ON_OFF_OC
ACK_EXCT_OC
ACK_ON_OC
ACK_OFF_OC
IRQ_ALR_OC
PD2_OC
FAULT_OC
WARN_OC
CLK_LOC
DE1_LOC
RXD1
CLK
74HC157
JUMPER 2
HOLD OUT
ICL232
SO16W
Nome Progetto: PJ55000MC
Pagina: 3 di 3
Size: A3
Autore: Griptech - Rev.: Canazza
Data: 07/10/2002
Codice Progetto: <>
Nome PC in Rete: \\UT_SRV
Revisione: REV B - 1.0 (DC)
Nome Parte: CORE CONTROL UNIT
File/Cartella: CSCCUPJ5KM2
Autorizzazione:
Codice: SLCCUPJ5KM2

Item	Quantity	Reference	Part
1	1	BT1	3,6V
2	2	C1,C7	CM10pF
3	3	C2,C4,C99	CM22pF
4	75	C3,C5,C8,C11,C12,C14,C15,C16,C17,C18,C19, C24,C26,C27,C28,C29,C30,C31,C32,C33,C34, C35,C36,C37,C38,C39,C40,C41,C42,C43,C44, C45,C46,C47,C48,C49,C50,C52,C53,C54,C55, C56,C57,C58,C59,C60,C61,C63,C65,C66,C67, C68,C69,C73,C75,C77,C81,C82,C87,C88,C89, C90,C91,C92,C93,C94,C95,C96,C97,C100, C101,C102,C103,C104,C105	CM.1uF
5	12	C6,C20,C21,C22,C23,C25,C70,C71,C83,C84, C85,C86	1/25
6	3	C9,C10,C13	XCM10pF
7	1	C51	CM.47uF
8	6	C62,C64,C72,C74,C76,C78	CM10KpF
9	2	C80,C79	CM27pF
10	1	C98	10-40pF
11	12	DL1,DL2,DL3,DL5,DL6,DL7,DL8,DL9,DL10, DL11,DL12,DL13	LED-D5
12	5	DL4,DL14,DL15,DL16,DL17	LED-D3
13	8	DZ1,DZ2,DZ5,DZ6,DZ9,DZ10, DZ11,DZ12	12V/1W
14	4	DZ3,DZ4,DZ7,DZ8	5V1/1W
15	14	D1,D4,D5,D7,D8,D10,D11,D13,D14,D15,D16, D18,D19,D20	BAV99B
16	1	D3	LM336-5.0V
17	1	D6	1N4004
18	1	D17	XBAV99B
19	3	D21,D22,D23	BAT83
20	3	FIX1,FIX2,FIX3	FIX35
21	1	JP1	STRIP 2
22	1	JP2	STRIP 5X2
23	3	JP3,JP4,JP6	JUMPER 2
24	1	JP7	JUMPER-2
25	1	J1	BDM
26	2	J3,J2	CON26AP
27	1	J4	CON34A
28	1	J5	CON10AP
29	4	K1,K2,K3,K4	TQ2
30	1	Q1	IRFD120
31	2	Q3,Q2	BC237
32	1	R1	330K
33	59	R2,R6,R7,R8,R9,R10,R13,R14,R15,R16,R17, R18,R19,R20,R21,R22,R23,R24,R25,R26,R27, R28,R29,R31,R32,R33,R34,R51,R87,R88,R89, R101,R103,R106,R124,R137,R149,R159,R172, R173,R181,R184,R185,R187,R194,R195,R203, R226,R227,R228,R229,R230,R231,R232,R234, R238,R242,R243,R245	10K
34	27	R3,R35,R38,R42,R45,R50,R52,R54,R60,R61, R65,R66,R71,R73,R77,R80,R84,R90,R93,R98, R102,R107,R110,R114,R117,R120,R122	2K2
35	1	R4	87W-20K
36	1	R5	X22R
37	33	R11,R12,R36,R39,R44,R47,R55,R57,R62,R63, R67,R69,R74,R76,R78,R82,R85,R91,R95,R99, R104,R112,R115,R118,R121,R133,R145,R155, R167,R178,R180,R190,R212	47K
38	8	R30,R125,R141,R150,R162,R174,R186,R240	100R
39	40	R37,R40,R41,R43,R46,R48,R49,R53,R56,R58, R59,R64,R68,R70,R72,R75,R79,R83,R86,R92, R96,R100,R105,R109,R113,R116,R119,R123, R130,R138,R144,R154,R163,R169,R175,R198, R219,R220,R221,R222	1K5
40	4	R81,R94,R97,R111	33K
41	1	R108	1M
42	57	R126,R127,R128,R129,R131,R132,R135,R136, R139,R140,R142,R143,R147,R148,R151,R152, R153,R157,R158,R160,R161,R165,R166,R170, R171,R176,R177,R182,R183,R188,R189,R192, R193,R196,R197,R199,R200,R201,R202,R204, R205,R206,R207,R208,R209,R210,R211,R213, R214,R215,R216,R217,R218,R224,R225,R246,R247	22R
43	6	R134,R146,R156,R168,R179,R191	10K5
44	1	R164	12K
45	1	R233	X10K
46	1	R235	220K
47	1	R236	10M
48	1	R237	10R
49	2	R239,R244	100K
50	1	R241	820K
51	11	S1,S2,S4,S5,S6,S7,S8,S9,S10,S11,S12	B3F
52	1	S3	SW SPDT
53	1	TP1	TP
54	1	U1	GM24123DSL
55	6	U2,U11,U13,U17,U20,U36	40106
56	1	U3	MC68HC912-D60-CPV8
57	1	U4	74HC244
58	2	U8,U5	74HC139
59	3	U6,U7,U9	74LS273
60	6	U10,U12,U14,U15,U18,U19	TLP521-4
61	1	U16	LM258
62	3	U21,U24,U27	TL072
63	5	U22,U26,U30,U32,U37	ULN2004A
64	3	U23,U25,U28	TLV5626
65	2	U29,U31	SN75176AP
66	1	U33	LM7805/TO220
67	1	U34	74HC157
68	1	U35	ICL232
69	1	U38	X-LM809
70	1	U39	MC34064
71	1	U40	CD68HC68T1M
72	1	Y1	14.745MHz
73	1	Y2	32KHZ

6.1.2 CCU motherboard (SLCCU1PJ5KM2)



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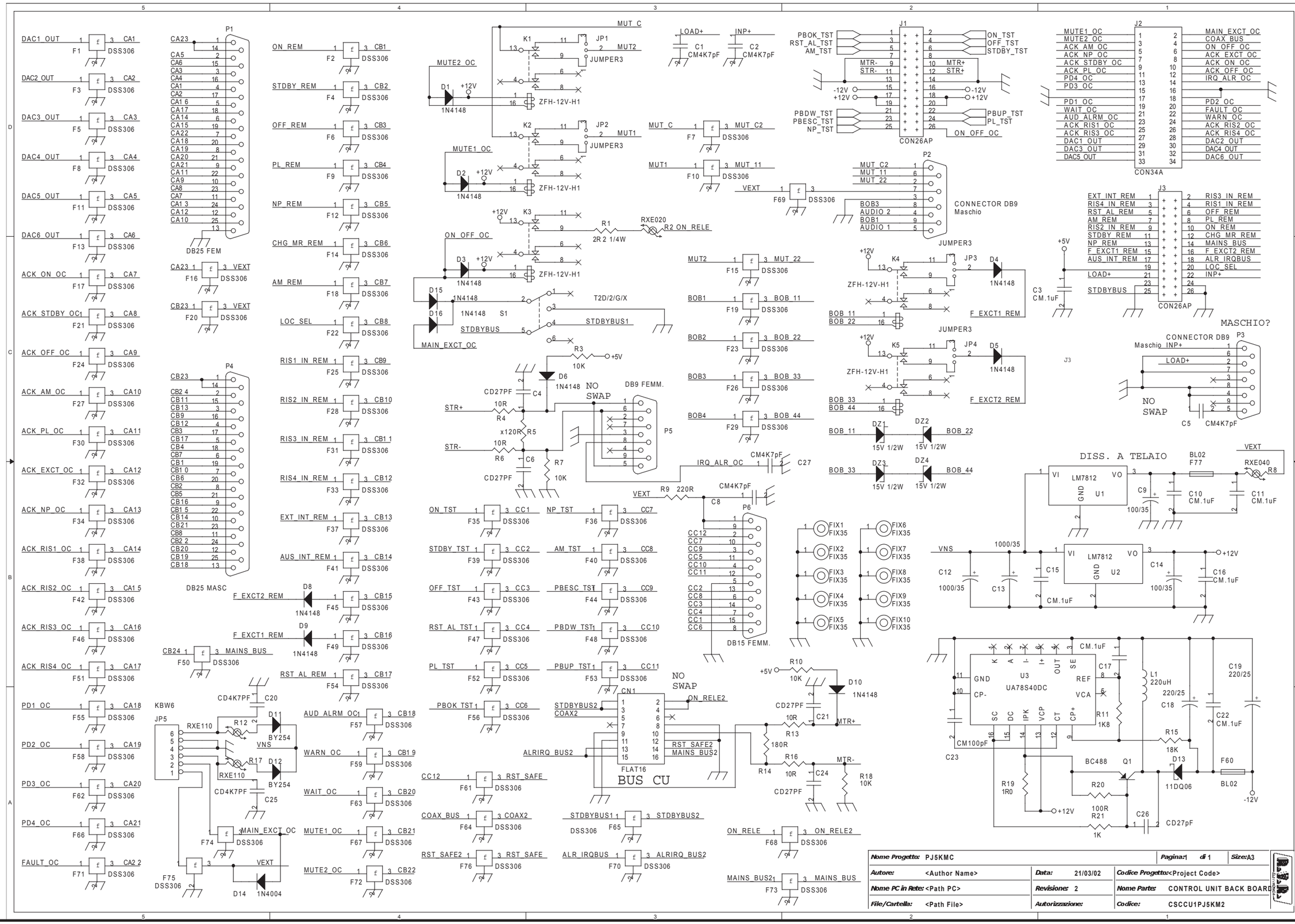
Autore:	Griptech - Rev.: Canazza	Data:	07/10/2002	Codice Progetto:	<>		
Nome PC in Rete:	\\UT_SRV	Revisione:	1.0 (DC)	Nome Parte:	Schedra madre CCU		
File/Cartella:	CCU1PJK5_1_LY.DWG	Autorizzazione:		Codice:	SLCCU1PJ5KM2		
Scala: <>	Materiale: <>	Trattamento:	<>	Profilo:	<>		

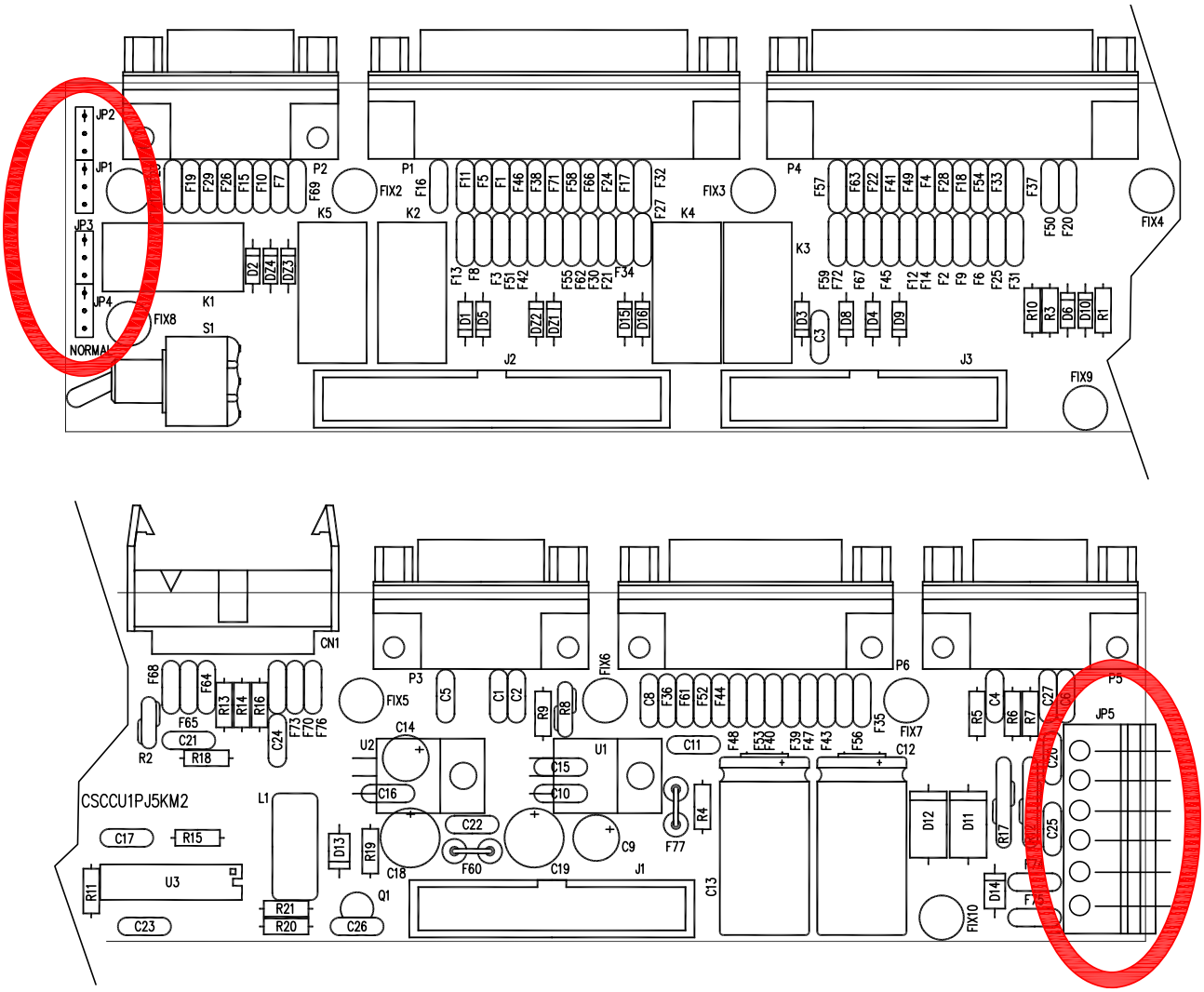


Nome Progetto: PJ5KMC				Pagina:1 di 1	Size:A3
Autore: <Author Name>		Data: 21/03/02		Codice Progetto:<Project Code>	
Nome PC in Rete: <Path PC>		Revisione: 2		Nome Parte: CONTROL UNIT BACK BOARD	
File/Cartella: <Path File>		Autorizzazione:		Codice: CSCCU1PJ5KM2	

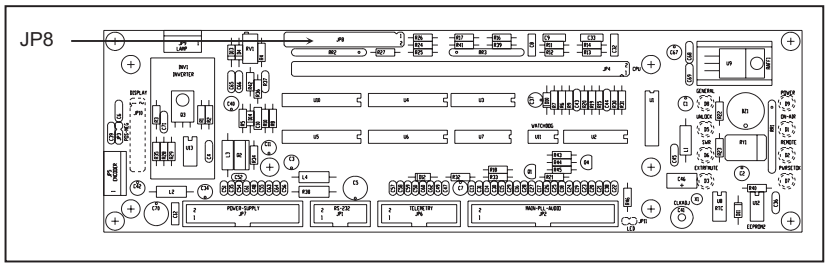
LISTA MATERIALI

Item	Quantity	Reference	Part
1	1	CN1	FLAT16
2	5	C1,C2,C5,C8,C27	CM4K7pF
3	7	C3,C10,C11,C15,C16,C17, C22	CM.1uF
4	5	C4,C6,C21,C24,C26	CD27pF
5	2	C9,C14	100/35
6	2	C12,C13	1000/35
7	2	C19,C18	220/25
8	2	C25,C20	CD4K7PF
9	1	C23	CM100pF
10	4	DZ1,DZ2,DZ3,DZ4	15V 1/2W
11	11	D1,D2,D3,D4,D5,D6,D8,D9, D10,D15,D16	1N4148
12	2	D11,D12	BY254
13	1	D13	11DQ06
14	1	D14	1N4004
15	10	FIX1,FIX2,FIX3,FIX4,FIX5,FIX6,FIX7,FIX8, FIX9,FIX10	FIX35
16	75	F1,F2,F3,F4,F5,F6,F7,F8,F9,F10,F11,F12, F13,F14,F15,F16,F17,F18,F19,F20,F21,F22, F23,F24,F25,F26,F27,F28,F29,F30,F31,F32, F33,F34,F35,F36,F37,F38,F39,F40,F41,F42, F43,F44,F45,F46,F47,F48,F49,F50,F51,F52, F53,F54,F55,F56,F57,F58,F59,F61,F62,F63, F64,F65,F66,F67,F68,F69,F70,F71,F72,F73, F74,F75,F76	DSS306
17	2	F77,F60	BL02
18	4	JP1,JP2,JP3,JP4	JUMPER3
19	1	JP5	KBW6
20	2	J3,J1	CON26AP
21	1	J2	CON34A
22	5	K1,K2,K3,K4,K5	ZFH-12V-H1
23	1	L1	220uH
24	1	P1	DB25 FEM
25	2	P2,P3	CONNECTOR DB9
26	1	P4	DB25 MASC
27	1	P5	DB9 FEMM.
28	1	P6	DB15 FEMM.
29	1	Q1	BC488
30	1	R1	2R2 1/4W
31	1	R2	RXE020
32	4	R3,R7,R10,R18	10K
33	4	R4,R6,R13,R16	10R
34	1	R5	x120R
35	1	R8	RXE040
36	1	R9	220R
37	1	R11	1K8
38	2	R12,R17	RXE110
39	1	R14	180R
40	1	R15	18K
41	1	R19	1R0
42	1	R20	100R
43	1	R21	1K
44	1	S1	T2D/2/G/X
45	2	U1,U2	LM7812
46	1	U3	UA78S40DC

6.1.3 Settings



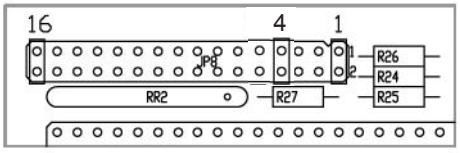
Leaving the jumpers as shown in the figure, the audio alarm is active, that is, when the audio is no longer present at the exciter, at the time of on air, the system automatically switches on the other exciter.
Removing the jumpers the audio alarm is disabled. We must also disable the control “ExPwr” on the related modulator, to do this must be removed from the connector JP8 of panel card (located in the front of the PTX-LCD), the “Jump 4” if the modulator mounts the CPU 8-bit, instead you have to remove the “Jump 5” if the modulator is equipped with the 16-bit CPU.



Panel card

Meaning Jump JP8 with 8-bit CPU

JP8 Position of panel card jumpers.

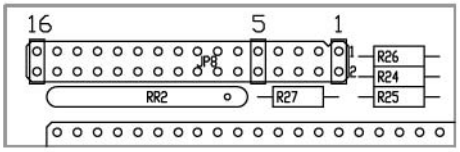


The software denotes jumper positions as follows (1 signifies a closed jumper, 0 open jumper, X any position):

Jump 4	Jump 5	Jump 6	Jump 7	Jump 8	Meaning
0	0	X	X	X	ExPwr, ExSts and ExFrq menu disabled
1	0	X	X	X	ExPwr and ExSts menu enabled, ExFrq menu disabled
0	1	X	X	X	ExPwr and ExSts menu disabled, ExFrq enabled
1	1	X	X	X	ExPwr, ExSts and ExFrq disabled
X	X	0	0	0	Default parameters set in case of exciter reset: CCIR for PLL at 10MHz
X	X	1	0	0	Default parameters set in case of exciter reset: FCC
X	X	0	1	0	Default parameters set in case of exciter reset: OIRT
X	X	1	1	0	Default parameters set in case of exciter reset: Japan
X	X	0	0	1	Default parameters set in case of exciter reset: Italy
X	X	1	0	1	Default parameters set in case of exciter reset: CSI
X	X	0	1	1	Default parameters set in case of exciter reset: China
X	X	1	1	1	Reserved for future applications

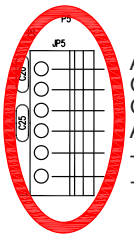
Meaning Jump JP8 with 16-bit CPU

JP8 Position of panel card jumpers.



The software denotes jumper positions as follows (1 signifies a closed jumper, 0 open jumper, X any position):

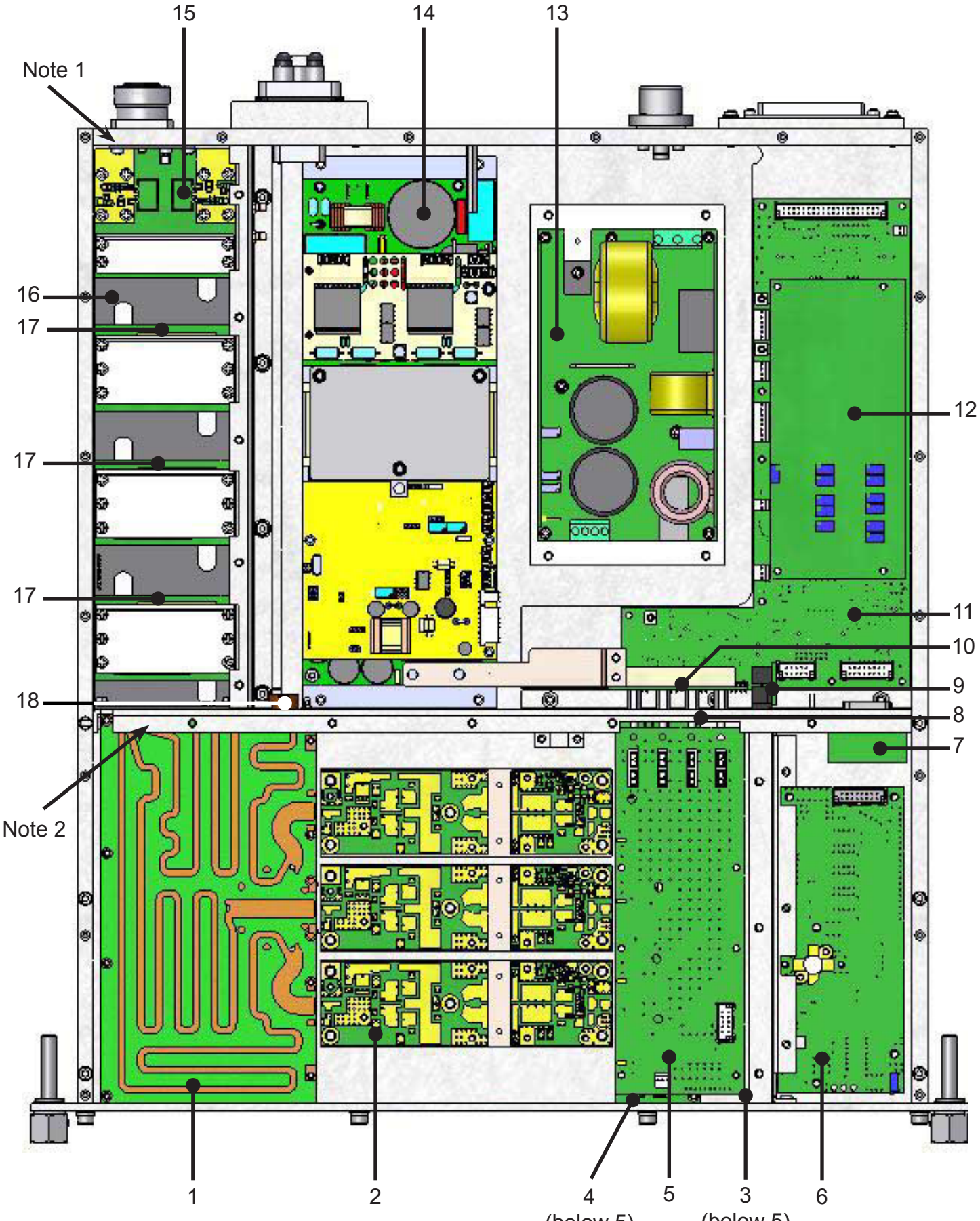
Jump 5	Jump 6	Jump 7	Jump 8	Jump 9	Jump 10	Jump 11	Jump 12	Jump 13	Jump 14	Meaning
0	0	X	X	X	X	X	X	X	X	ExPwr, ExSts and ExFrq menu disabled
1	0	X	X	X	X	X	X	X	X	ExPwr and ExSts menu enabled, ExFrq menu disabled
0	1	X	X	X	X	X	X	X	X	ExPwr and ExSts menu disabled, ExFrq enabled
1	1	X	X	X	X	X	X	X	X	ExPwr, ExSts and ExFrq disabled
X	X	0	0	0	X	X	X	X	X	Default parameters set in case of exciter reset: CCIR for PLL at 10MHz
X	X	1	0	0	X	X	X	X	X	Default parameters set in case of exciter reset: FCC
X	X	0	1	0	X	X	X	X	X	Default parameters set in case of exciter reset: OIRT
X	X	1	1	0	X	X	X	X	X	Default parameters set in case of exciter reset: Japan
X	X	0	0	1	X	X	X	X	X	Default parameters set in case of exciter reset: Italia
X	X	1	0	1	X	X	X	X	X	Default parameters set in case of exciter reset: CSI
X	X	0	1	1	X	X	X	X	X	Reserved for future applications
X	X	1	1	1	X	X	X	X	X	Reserved for future applications
X	X	X	X	X	1	X	X	X	X	MAINS alarm enabling. NOTE: in this case is necessary to move the two jumpers from positions 3-5 and 4-6 to the positions 1-3 and 2-4, of Supply card JP6 jumper(see fig. below)
X	X	X	X	X	X	1	X	X	X	TRDSP optional card presence
X	X	X	X	X	X	X	1	X	X	13 MHz Quartz frequency on PLL card
X	X	X	X	X	X	X	X	1	X	Telemetry optional card presence
X	X	X	X	X	X	X	X	X	1	SFN software version (only for TRDSP)



AC 18V
GND
GND
AC 18V
- RELE
+ RELE

Power supply pinout

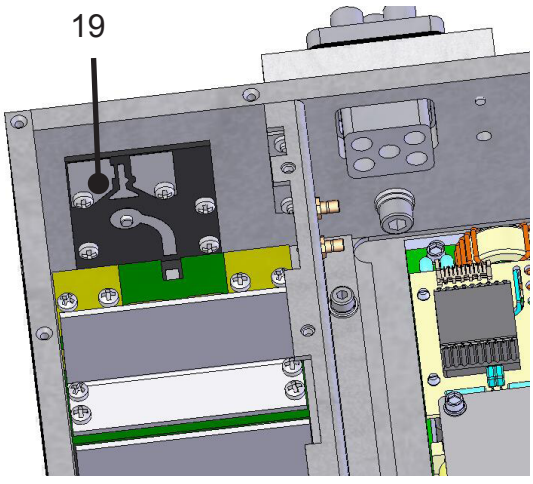
6.2 RF module



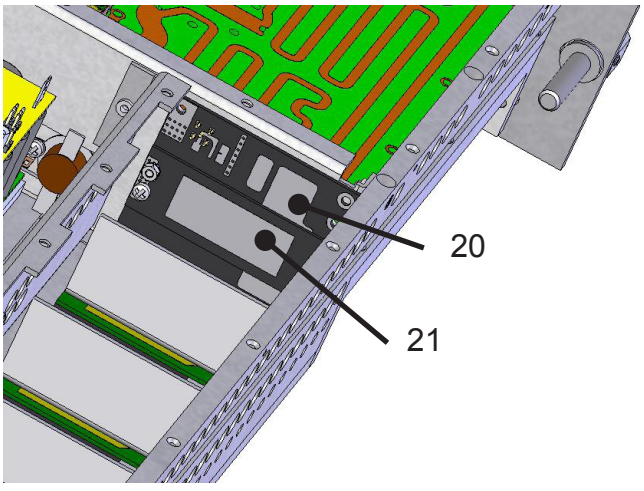
Internal view

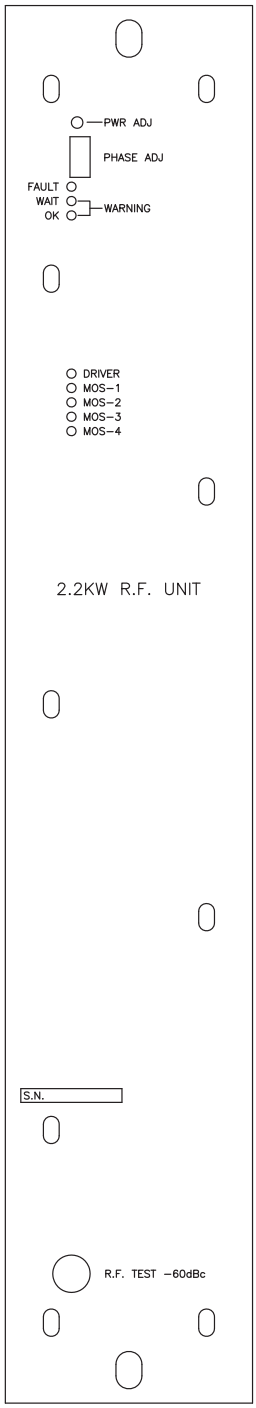
N°	Description	Code	Chapter
1	3-way combiner	CSCMBMOD2KPJ	6.2.1
2	Pallet mosfet	KKFIN237C	6.2.2
3	Temperature probe	SLSNDTMPJ5K	6.2.3
4	Splitter	CSSPLTEX1KL1	6.2.4
5	Fuses board	CSFU0359R1	6.2.5
6	Driver board	SLDRVRFPJ5M	6.2.6
7	Db-15 connector filtered	SLDB15FFILF1	/
8	Pass through board	CSFI0368R1	6.2.7
9	Db-9 connector filtered	SLDB9MFILF1	/
10	Shunt board	CSMT0367R1	6.2.8
11	Bias board	SLBI0358R01V01	6.2.9
12	CPU board	CPUPJ5KMC2	6.2.10
13	PFC	KPFC154	6.2.11
14	Power supply	PSL4280	6.2.12
15	Directional coupler	CSDCLPFPJ1KM	6.2.13
16	Low pass filter 1	CSLPF1MOD2KW	6.2.13
17	Capacitor 1	CSB1LPFPJ1KM	6.2.15
18	Temperature sensor 90° NA	SETBMET90NA	/
19	Card outlet connector	SLOUTRFPJ5K1	6.2.16
20	First capacitance low pass filter	CSLP0372R1	6.2.17
21	Low pass filter 2	CSLPF2MOD2KW	6.2.18

Note 1

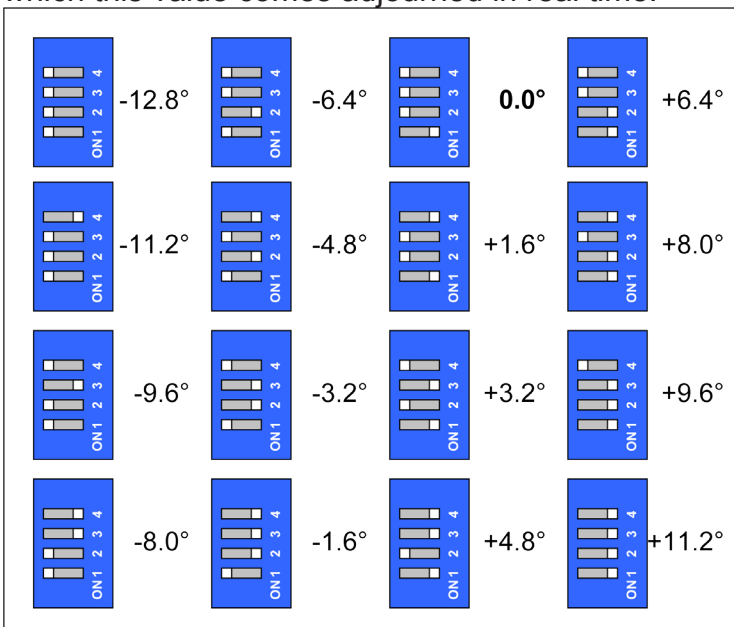


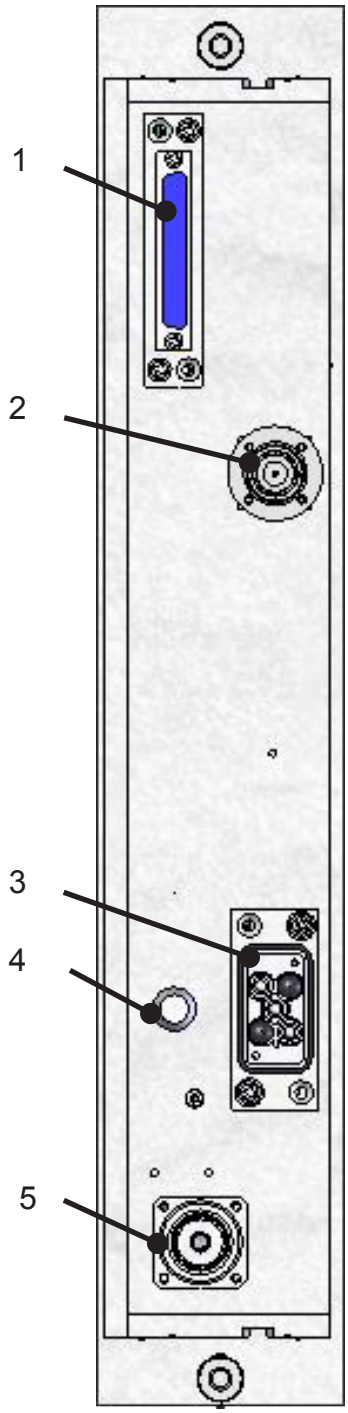
Note 2





Front view

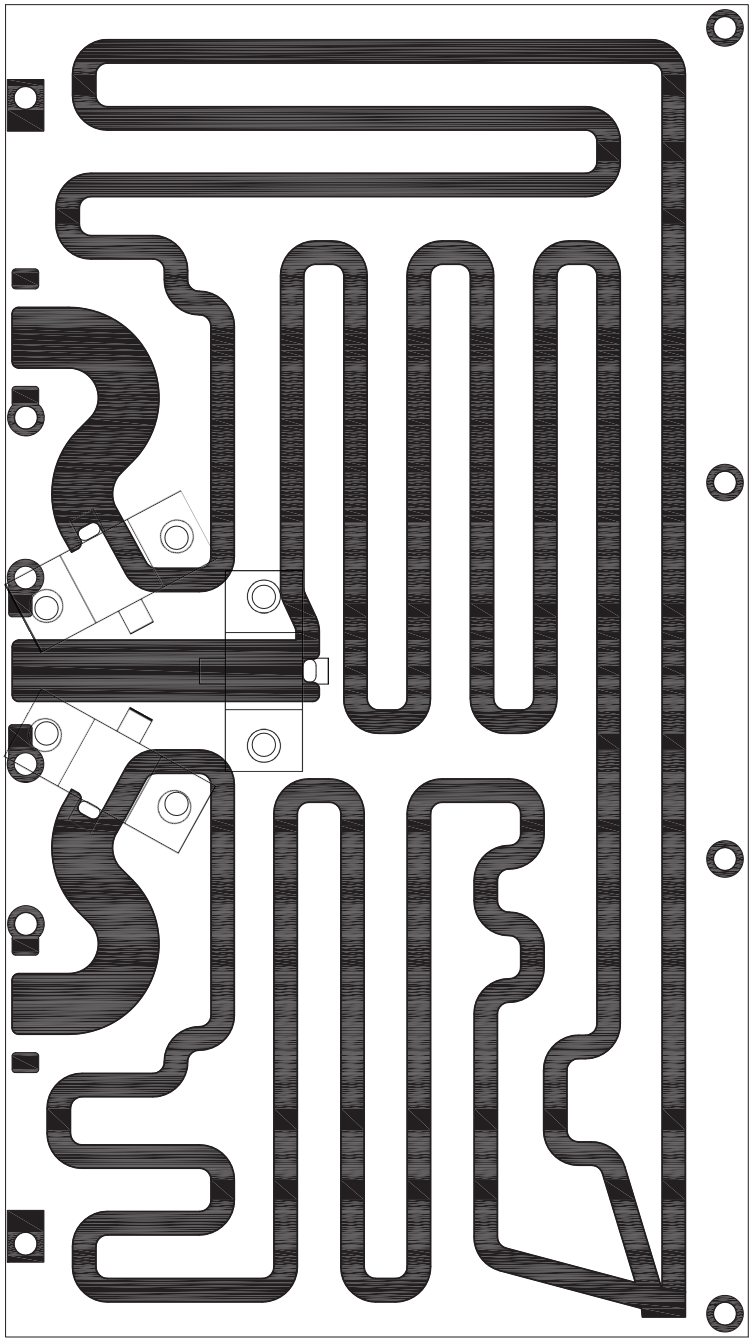
Function	Description
PWR ADJ	Trimmer adjustment of the output power of a single module, this control operates by varying the VPA pallet mosfet
PHASE ADJ	ip-switch for the regulation of the phase of the RF signal generated. The phase of each RF module could be modified independently to steps of 1.6° from- 12.8° to +11,2°. In some cases could result useful use the regulations of phase for minimize the unbalanced power dissipated. To this purpose, it prefer ble of use the SERVICE menu, in which this value comes adjourned in real time. 
FAULT	The module is switched off due to excessive operating parameter. You can see what he did turn off the module in the “Alarms” menu.
WAIT	Indicates a pre-alarm condition.
OK	Indicates that the module is on
DRIVER	Led on indicates the presence of voltage on driver
MOS-1	Led on indicates the presence of voltage on mosfet 1
MOS-2	Led on indicates the presence of voltage on mosfet 2
MOS-3	Led on indicates the presence of voltage on mosfet 3
MOS-4	Reserve
S.N.	Serial No. of the module
R.F. TEST -60dBc	RF sampling to the module output



Rear view

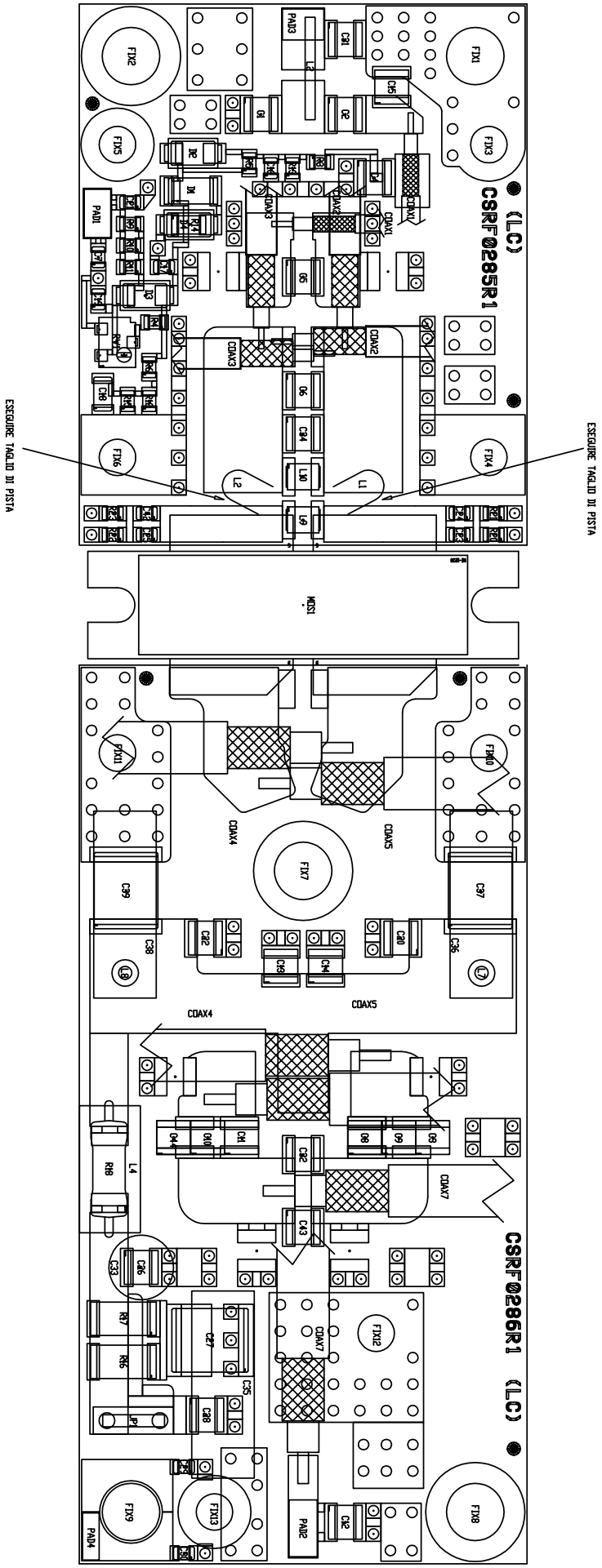
1	DB-37 connector
2	RF input connector (“N” type)
3	Power supply connector Pin 1= Neutral Pin 2= NC Pin 3= NC Pin 4= Phase Pin 5= GND
4	Ground connector
5	RF output connector (7/16” EIA)

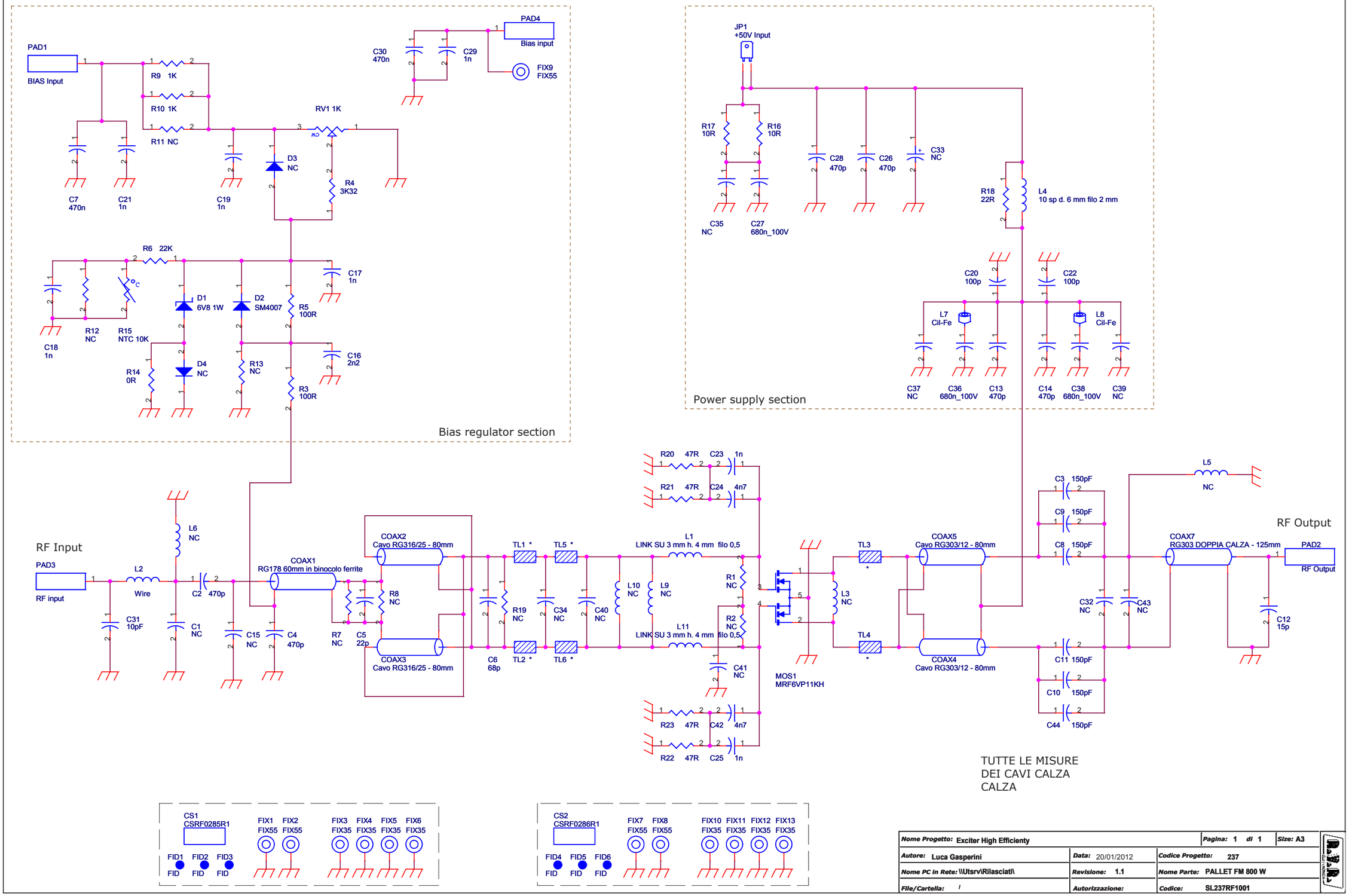
6.2.1 3-way combiner (CSCMBMOD2KPJ)



	DENOMINAZIONE: 3–way combiner		
	N° PROGRAMMA		MACCHINA
SEMILAVORATO:		AUTORE	CODICE DISEGNO: CSCM0366R2
MATERIALE: FR4 –74 3.2mm Cu 35um	PESO [KG] 178.05		
TRATTAMENTO: –	DATA 11/06/2013	SCALA 1:1 / REVISIONE –	CODICE AS400 –
TOLLERANZA GENERALE SECONDO UNI ISO 2768–f		FORMATO A4	( )

6.2.2 Pallet mosfet (KKFIN237C)



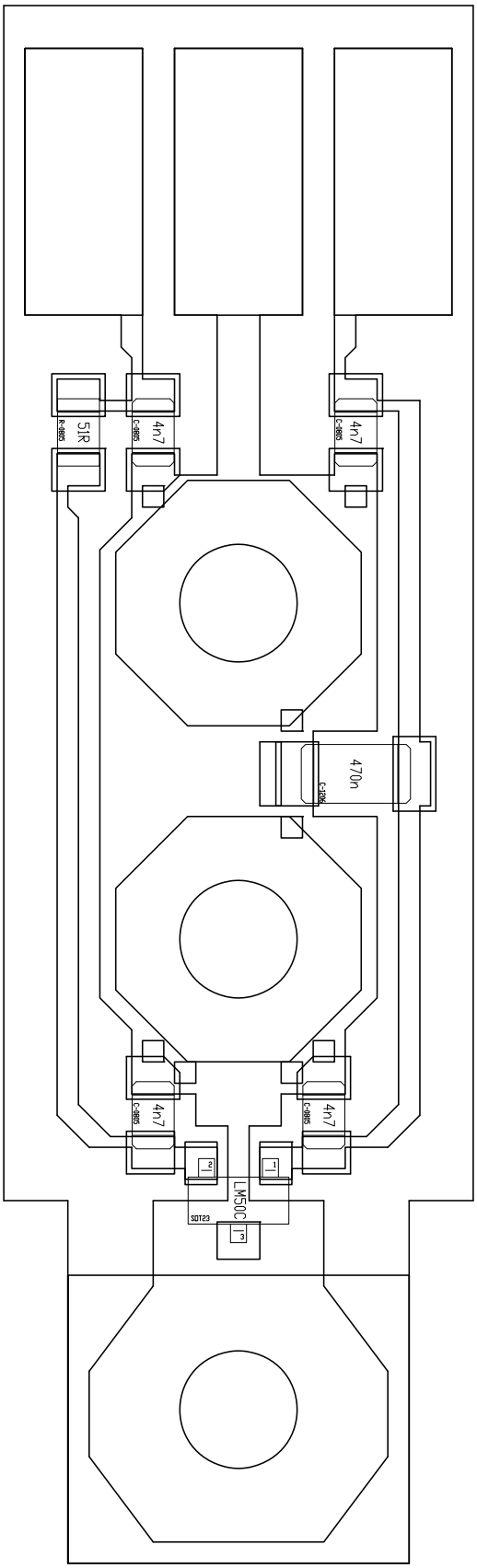


Nome Progetto: Exciter High Efficienty		**Pagina:** 1 di 1	**Size:** A3
Autore: Luca Gasperini	**Data:** 20/01/2012	**Codice Progetto:** 237	
Nome PC in Rete: \\Utsrv\Rilasciati\	**Revisione:** 1.1	**Nome Parte:** PALLET FM 800 W	
File/Cartella: /	**Autorizzazione:**	**Codice:** SL237RF1001	

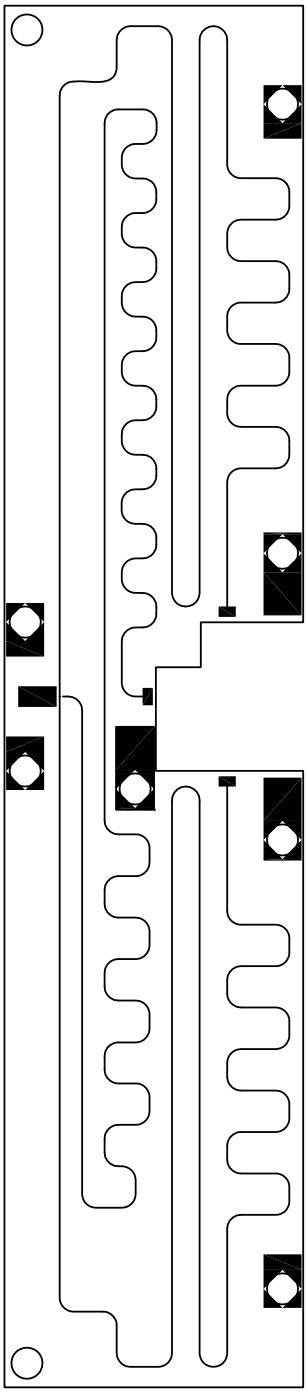
PALLET FM 800 W Revised: 20/01/2012
SL237RF1001 Revision: 1.1
Exciter High Efficienty
237
Luca Gasperini

Item	Quantity	Reference	Part	{description}
1	1	COAX1	RG178 60mm in binocolo ferrite	Cavo RG178 60mm calza/calza in binocolo ferrite (73mm tot.)
2	2	COAX2, COAX3	Cavo RG316/25 - 80mm	Cavo RG316/25 80mm calza/calza (91mm tot.)
3	2	COAX5, COAX4	Cavo RG303/12 - 80mm	Cavo RG303/12 80mm calza/calza (98mm tot.)
4	1	COAX7	RG142 DOPPIA CALZA - 125mm	Cavo RG142 125mm calza/calza (147mm tot.) Vedi Info COAX7.pdf
5	1	CS1	CSRF0285R1	Circuito stampato
6	1	CS2	CSRF0286R1	Circuito stampato
7	1	C1	NC	Cond. SMD 0805
8	2	C2, C4	470p	Cond. SMD 1212 HQ
9	4	C13, C14, C26, C28	470p	Cond. SMD 1212 HQ
10	1	C30	470n	Cond. SMD 0805
11	1	C5	22p	Cond. SMD 1212 HQ
12	1	C6	68p	Cond. SMD 1212 HQ
13	2	C7	470n	Cond. SMD 0805
14	6	C3, C44, C8, C9, C10, C11	150pF	Cond. SMD 1212 HQ
15	1	C12	15p	Cond. SMD 1212 HQ
16	5	C15, C32, C34, C40, C43	NC	Cond. SMD 1212 HQ
17	1	C16	2n2	Cond. SMD 0805 COG
18	5	C17, C19, C21, C23, C25	1n	Cond. SMD 0805
19	1	C18	1n	Cond. SMD 1206
20	2	C22, C20	100p	Cond. SMD 1212 HQ
21	2	C42, C24	4n7	Cond. SMD 0805
22	1	C27	680nF 100V	Cond. SMD 2824
23	1	C31	10pF	Cond. SMD 1212 HQ
24	1	C29	1n	Cond. SMD 0805
25	3	C36, C38	680n_100V	Cond. Poliestere p 10mm
26	2	C37, C39	NC	Cond. Poliestere p 15mm
27	1	C41	NC	Cond. multistrato p 5mm
28	1	D1	6V8 1W	MELF SMD Zener Diode
29	1	D2	SM4007	Diodo SMD cont. SMA
30	2	D4, D3	NC	Diodo SMD cont. SMA
31	6	FID1, FID2, FID3, FID4, FID5, FID6	FID	Fiducial CS
32	5	FIX1, FIX2, FIX7, FIX8, FIX9	FIX55	Foro fissaggio 5.5mm
33	8	FIX3, FIX4, FIX5, FIX6, FIX10, FIX11, FIX12, FIX13	FIX35	Foro fissaggio 3.5mm
34	1	JP1	+50V Input	Faston da CS p. 5.08
35	2	L11, L1	LINK SU 3 mm h. 4 mm filo 0,5	LINK su 3 mm h. 4 mm filo 0,5
36	1	L2	Wire	Filo R. Arg. 1mm lung. 10mm
37	1	L3	NC	
38	1	L4	10 sp d. 6 mm filo 2 mm	10spire filo R. Smalt. 2mm Avvolte su 6mm includente R18 all'interno
39	2	L5, L9	NC	
40	1	L6	NC	
41	2	L7, L8	Cil-Fe	Cilindretto di ferrite
42	1	L10	NC	Ind. SMD 1008
43	1	MOS1	MRF6VP11KH	PP Power mosfet RF
44	2	PAD4, PAD1	BIAS Input	
45	1	PAD2	RF Output	
46	1	PAD3	RF input	
47	1	RV1	1K	Trimm. multi SMD PVG5 Murata
48	5	R1, R2, R7, R8, R19	NC	Res. 2W
49	2	R3, R5	100R	Res. SMD 0805 1%
50	1	R4	3K32	Res. SMD 0805 1%
51	1	R6	22K	Res. SMD 0805 1%
52	2	R10, R9	1K	Res. SMD 0805 1%
53	3	R11, R12, R13	NC	Res. SMD 0805 1%
54	1	R14	0R	Res. SMD 1206 1%
55	1	R15	NTC 10K	Res. NTC SMD 0805
56	2	R17, R16	10R	Res. SMD 2512 5%
57	1	R18	22R	Res. 2W
58	4	R20, R21, R22, R23	47R	Res. SMD 0805 1%
59	6	TL1, TL2, TL3, TL4, TL5, TL6	*	Linea strip CS
60	1		Ferrite balun	Ferrite balun

6.2.3 Temperature probe (SLSNDTMPJ5K)

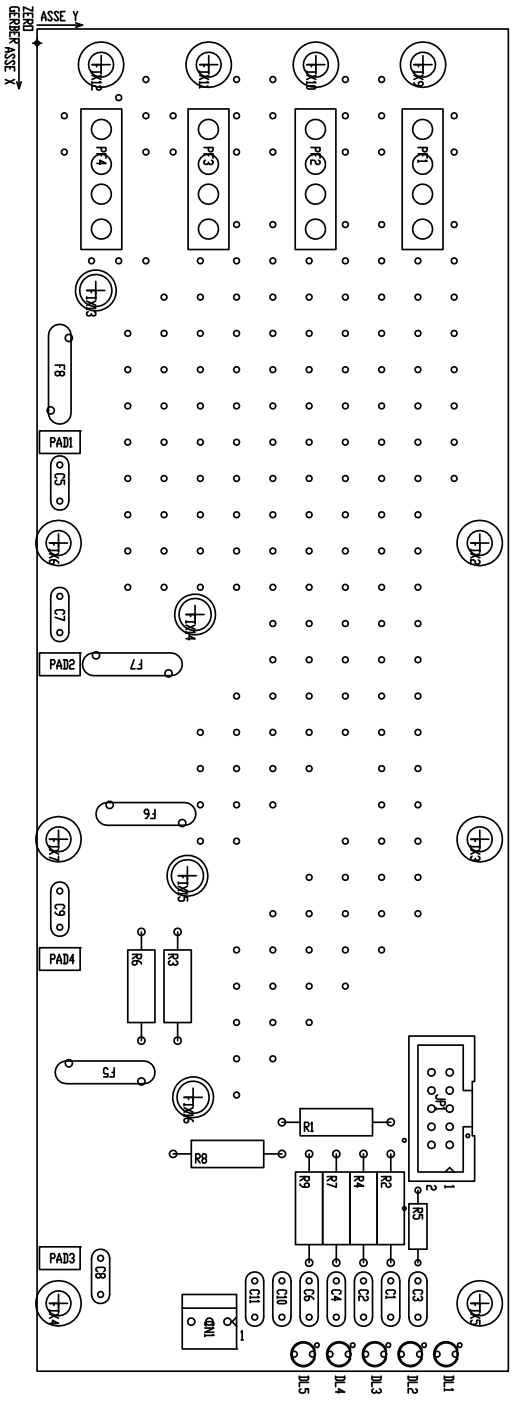


6.2.4 Splitter (CSSPLTEX1KL1)

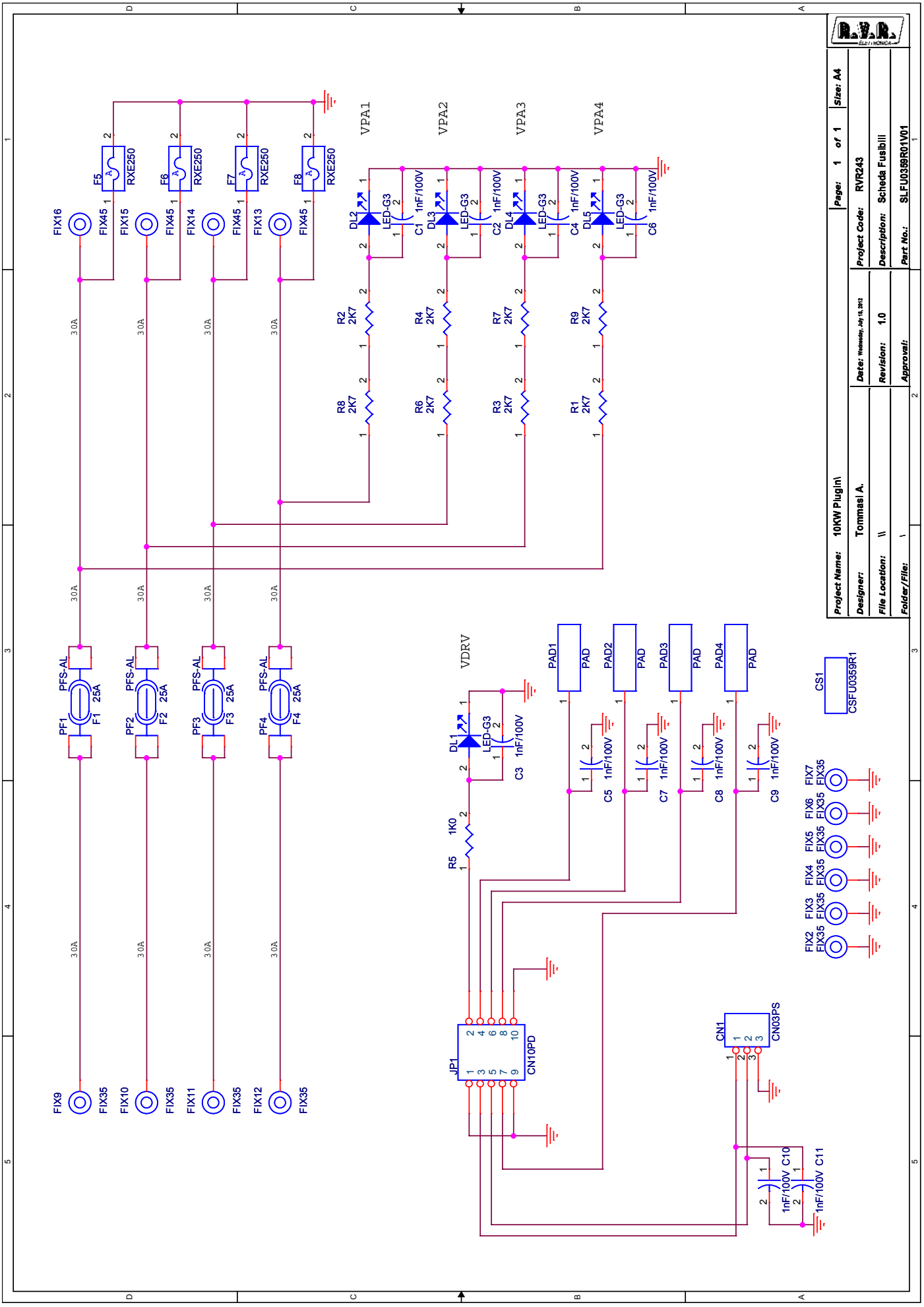


NOME PROGETTO: TEX1000 LIGHT			NOME PARTE:				
AUTORE: ENRICO PAOLINO			DATA: 02/11/2004	REVISIONE: 1.0.	SCALA: 1:1	SIZE: A4	PAGINA: 2 DI 5
ARCHIVIAZIONE ELETTRONICA: "CARTELLA PROGETTI" SU "UT_SRV"		CODICE PROGETTO: TEX1KLIGHT		CODICE DISEGNO: CSSPLTEX1KL1			
MATERIALE: FR4 sp. 1.6mm RAME 35/35	TRATTAMENTO: STAGNATURA E SOLDER		PROFILO: -		STATO: ESECUTIVO		

6.2.5 Fuses board (CSFU0359R1)



RILASCIO: 10/7/12			DIS. S.POL. CTR. A2 LATO PIANO DI MONTAGGIO VISTA LATO COMPONENTI
REV:			
DIM.SCHEDA: VEDI PROFILO TRATT.: STANDARD COSTRUTTORE	DENOMINAZIONE SCHEDA FUSIBILI		
MAT.: FR4-74 1.6mm Cu 70um VISTA POSITIVA N.B.:RAME 70um	CODICE CSFU0359R1	RVR ELETTRONICA S.P.A.	SCALA 1:1


Project Name: 10KW Plugin\
Designer: Tommasi A.
File Location: \\
Folder/File: \
Date: Wednesday, July 18, 2012
Revision: 1.0
Approval:
Page: 1 of 1
Size: A4
Project Code: RVR243
Description: Scheda Fusibili
Part No.: SLFU0359R01V01
VPA1
VPA2
VPA3
VPA4
VDRV
F5 RXE250
F6 RXE250
F7 RXE250
F8 RXE250
PFS-AL
PF1 F1 25A
PF2 F2 25A
PF3 F3 25A
PF4 F4 25A
DL1 LED-G3
DL2 LED-G3
DL3 LED-G3
DL4 LED-G3
DL5 LED-G3
R1 2K7
R2 2K7
R3 2K7
R4 2K7
R5 1K0
R6 2K7
R7 2K7
R8 2K7
R9 2K7
C1 1nF/100V
C2 1nF/100V
C3 1nF/100V
C4 1nF/100V
C5 1nF/100V
C6 1nF/100V
C7 1nF/100V
C8 1nF/100V
C9 1nF/100V
C10 1nF/100V
C11 1nF/100V
PAD1
PAD2
PAD3
PAD4
PAD
CS1 CSFU0359R1
JP1 CN10PD
CN1 CN03PS
FIX2 FIX35
FIX3 FIX35
FIX4 FIX35
FIX5 FIX35
FIX6 FIX35
FIX7 FIX35
FIX9 FIX35
FIX10 FIX35
FIX11 FIX35
FIX12 FIX35
FIX13 FIX45
FIX14 FIX45
FIX15 FIX45
FIX16 FIX45
30A

Scheda Fusibili Revised: Wednesday, July 18, 2012
SLFU0359R01V01 Revision: 1.0

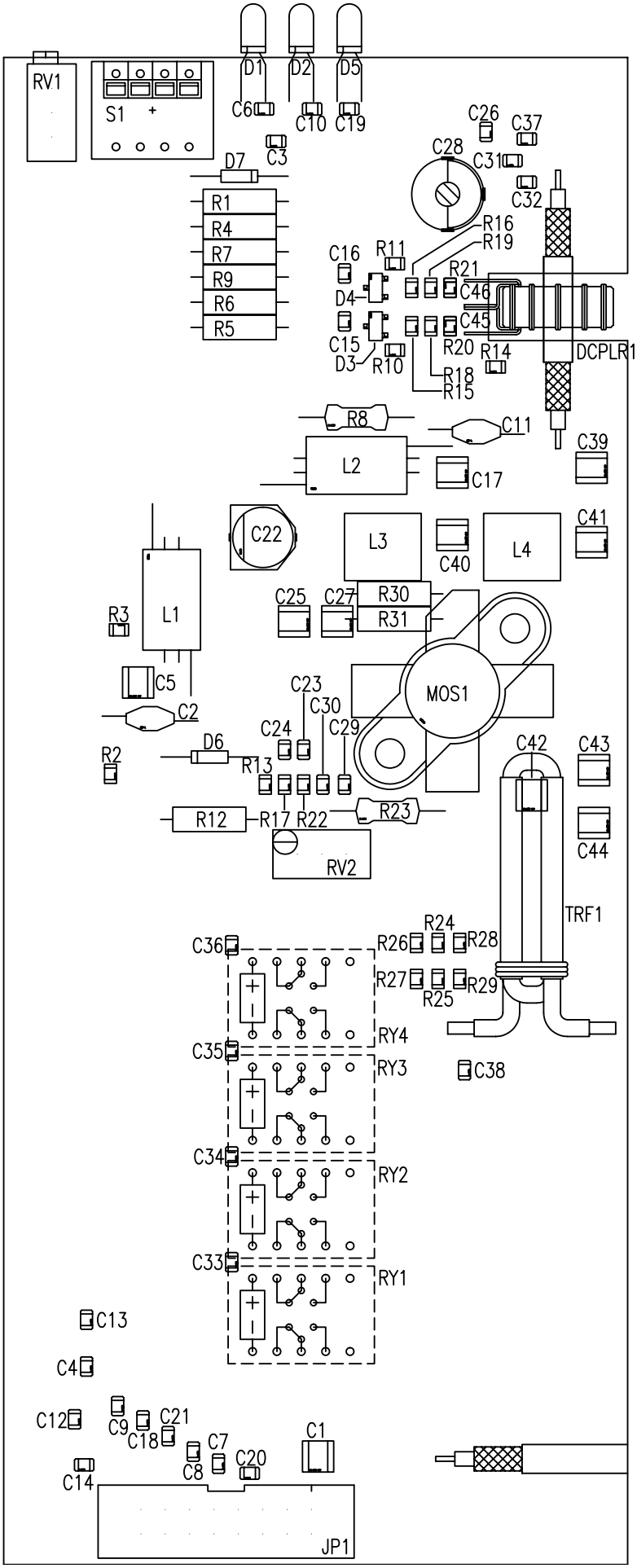
10KW Plugin\
RVR243

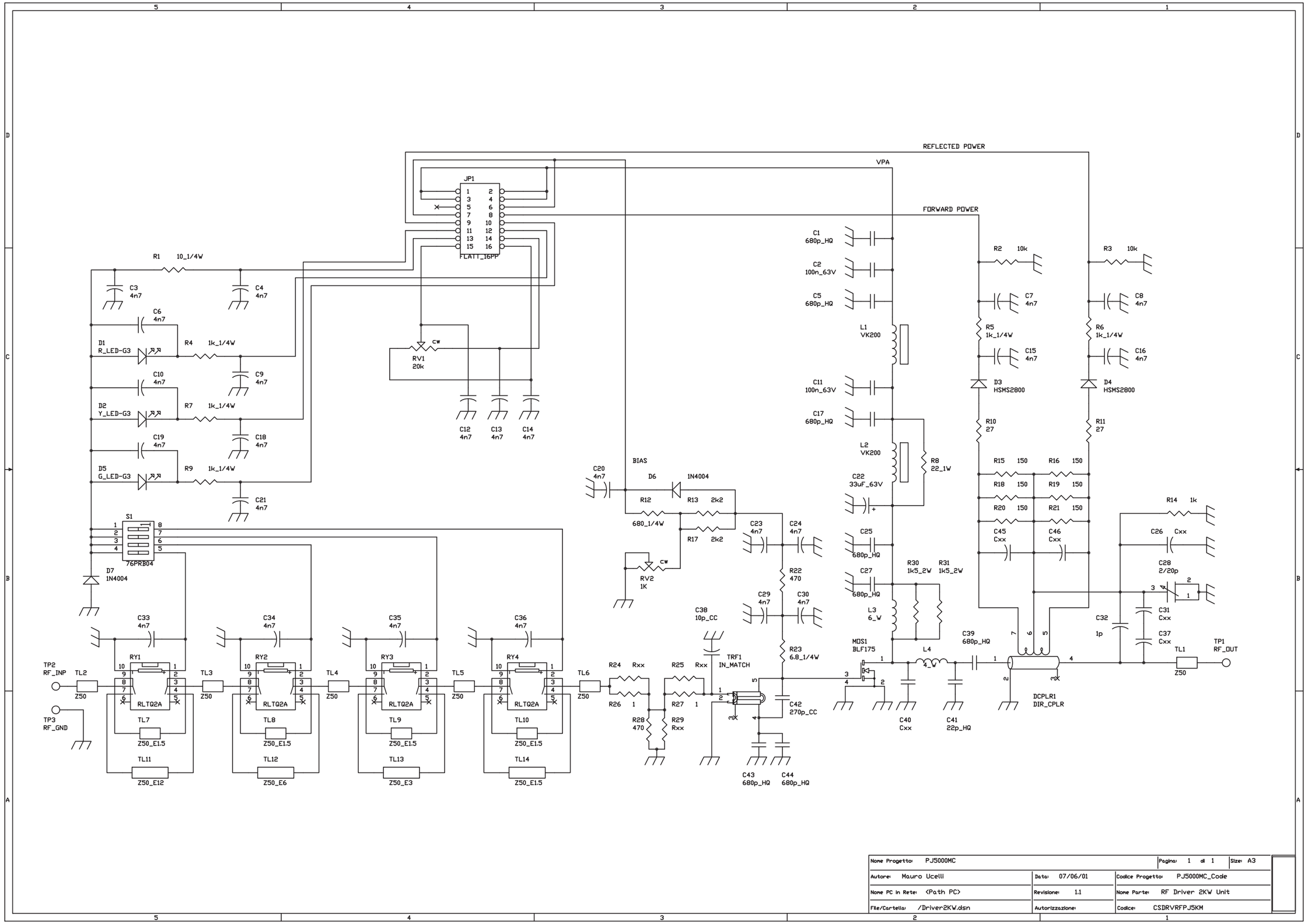
Item	Quantity	Reference	Part	Description	Code	
1	1	CN1	CN03PS	Connettore 3 poli Mascon	CNTMASM20PCS	Spezzato
2	1	CS1	CSFU0359R1	Circuito stampato	CSFU0359R1	
3	11	C1,C2,C3,C4,C5,C6,C7,C8, C9,C10,C11	1nF/100V	Cond. ceramico p 5mm	CKM102KC102P	
4	5	DL1,DL2,DL3,DL4,DL5	LED-G3	LED Verde dia. 3mm	LEDV03	
5	10	FIX2,FIX3,FIX4,FIX5,FIX6, FIX7,FIX9,FIX10,FIX11, FIX12	FIX35	Foro fissaggio 3.5mm		
6	4	FIX13,FIX14,FIX15,FIX16	FIX45	Foro fissaggio 4.5mm		
7	4	F1,F2,F3,F4	25A	Fusibile Automotive serie AL		Nota 1
8	4	F5,F6,F7,F8	RXE300	Fusibile autorip. RXE p10mm	FUSAUTRX300A	
9	1	JP1	CN10PD	Connettore 10 poli Flat cs con alette	CNTMCS10A	
10	4	PAD1,PAD2,PAD3,PAD4	PAD	Pad a saldare 2.5x5 mm		
11	4	PF1,PF2,PF3,PF4	PFS-AL	Portafusibile serie AL		Nota 2
12	8	R1,R2,R3,R4,R6,R7,R8,R9	2K7	Res. 1/2W	RSC1/2J002K7	
13	1	R5	1K0	Res. 1/4W	RSM1/4F0001K	

Nota 1 Portafusibile da CS Omega C0145

Nota 2 Fusibile Omega automotive codice AL32.25

6.2.6 Driver board (SLDRVRFPJ5M)





Nome Progetto: PJ5000MC			Pagina: 1 di 1 Size: A3
Autore: Mauro Ucelli	Data: 07/06/01	Codice Progetto: PJ5000MC_Code	
Nome PC in Rete: <Path PC>	Revisione: 1.1	Nome Parte: RF Driver 2KW Unit	
File/Cartella: /Driver2KW.dsn	Autorizzazione:	Codice: CSDRVRFPJ5KM	

DRIVER2KW.BOM
RF Driver 2KW Unit Revised: Thursday, April 22, 2013
CSDRVRFPJ5KM Revision: 1.1

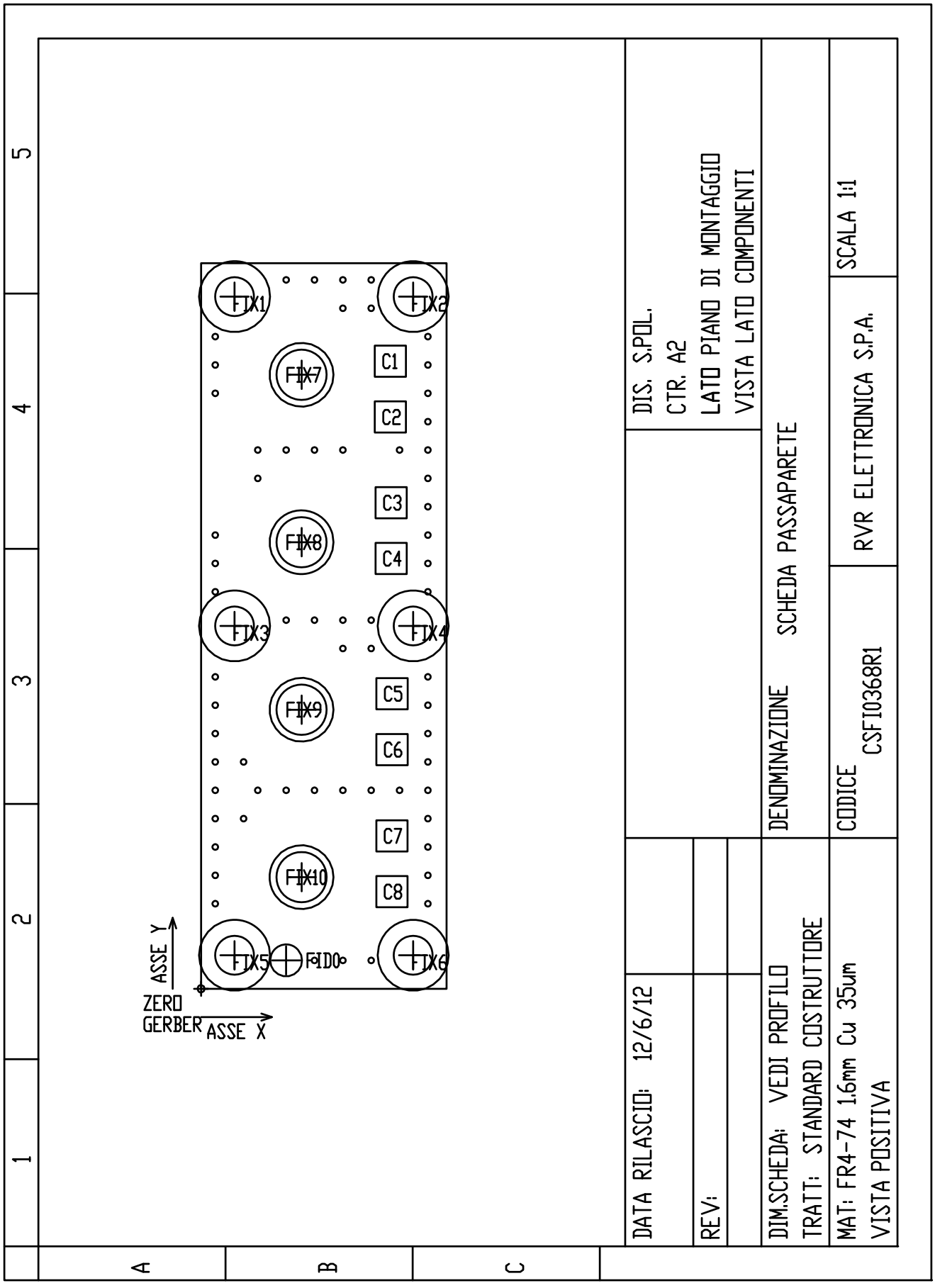
PJ5000MC
PJ5000MC_Code
/Driver2KW.dsn
Mauro Ucelli
07/06/01

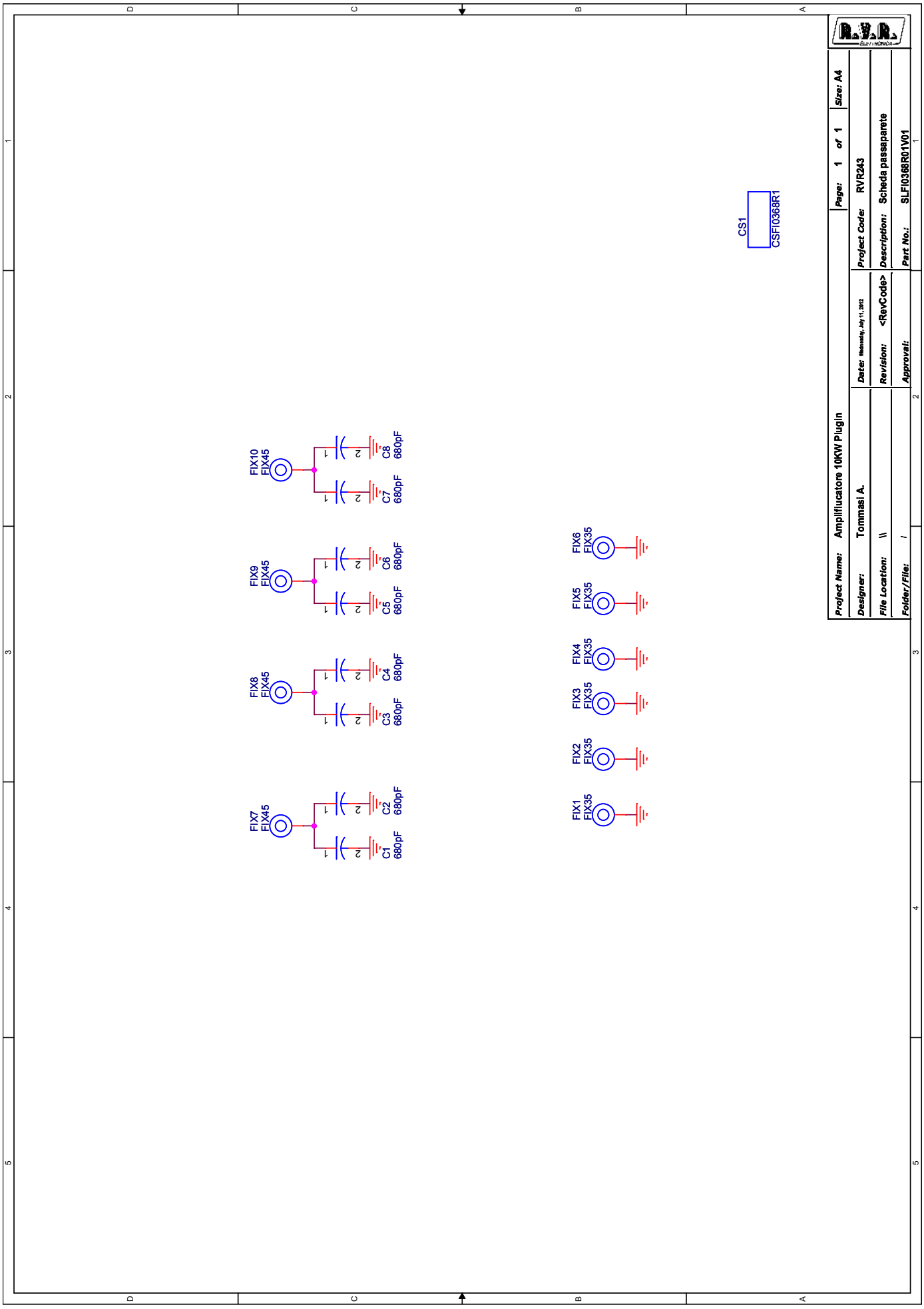
Bill Of Materials May 2,2002 17:52:38 Page1

Item	Quantity	Reference	Part	
1	8	C1,C5,C17,C25,C27,C39, C43,C44	680p_HQ	;(Condensarore chip HQ 680pF)
2	2	C11,C2	100n_63V	;(Condensatore Multistrato 100nF 63V)
3	24	C3,C4,C6,C7,C8,C9,C10, C12,C13,C14,C15,C16,C18, C19,C20,C21,C23,C24,C29, C30,C33,C34,C35,C36	4n7	;(Condensatore SMD 0805 4.7nF)
4	1	C22	33uF_63V	;(Condensatore Elettr. 33uF 63V)
5	4	C26,C31,C37,C40	Cxx	;(Non Installato)
6	1	C28	2/20p	;(Condensatore variabile a Film Viola)
7	1	C32	1p	;(Condensatore SMD 0805 1pF)
8	1	C38	10p_CC	;(Condensatore Ceramico 10pF)
9	1	C41	22p_HQ	;(Condensarore chip HQ 22pF)
10	1	C42	270p_CC	;(Condensatore Ceramico 270pF)
11	2	C45,C46	Cxx	;Non Installato
12	1	DCPLR1	DIR_CPLR	;(Toroide con avv. per misura Potenza)
13	1	D1	R_LED-G3	;(LED Rosso 3mm)
14	1	D2	Y_LED-G3	;(LED Giallo 3mm)
15	2	D3,D4	HSMS2800	;(Diodo SMD HSMS2800)
16	1	D5	G_LED-G3	;(LED Verde 3mm)
17	2	D7,D6	1N4004	;(Diodo 1N4004)
18	1	JP1	FLATT_16PP	;(Connettore M circ. stamp. 16pp Flatt)
19	2	L2,L1	VK200	;(VK200)
20	1	L3	6_W	;(6 spire RS 1mm su 6mm compatte)
21	1	L4	4_W	;(4 spire RA 1mm su 6mm lung. 7mm)
22	1	MOS1	BLF175	;(MOS PHILIPS BLF175)
23	1	RV1	20k	;(Trimmer Multig. 20k vite di lato)
24	1	RV2	1K	;(Trimmer Multig. 1K vite in alto)
25	4	RY1,RY2,RY3,RY4	RLTQ2A	;(Relay TQ2 12VDC tipo: OMRON G6H-2-100)
26	1	R1	10_1/4W	;(Res. 1/4W 10R)
27	2	R2,R3	10k	;(Res. SMD 0805 10k)
28	5	R4,R5,R6,R7,R9	1k_1/4W	;(Res. 1/4W 1k)
29	1	R8	22_1W	;(Res. 1W 22R)
30	2	R11,R10	27	;(Res. SMD 0805 27hm)
31	1	R12	680_1/4W	;(Res. 1/4W 680R)
32	2	R13,R17	2k2	;(Res. SMD 0805 2.2k)
33	1	R14	1k	;(Res. SMD 0805 1k)
34	4	R15,R16,R18,R19,R20,R21	150	;(Res. SMD 0805 150R)
35	5	R24,R25,R29	Rxx	;Non Installato
36	2	R22,R28	470	;(Res. SMD 0805 470R)
37	1	R23	6.8_1/4W	;(Res. 1/4W 6.8R)
38	2	R26,R27	1	;(Res. SMD 0805 1R)
39	2	R31,R30	1k5_2W	;(Res. 2W miniatura 1.5k)
40	1	S1	76PRB04	;(Dip Switch 4 cont. 90 gradi)
41	6	TL1,TL2,TL3,TL4,TL5,TL6	Z50	;Non Installato

Pagina 1

6.2.7 Pass through board (CSFI0368R1)



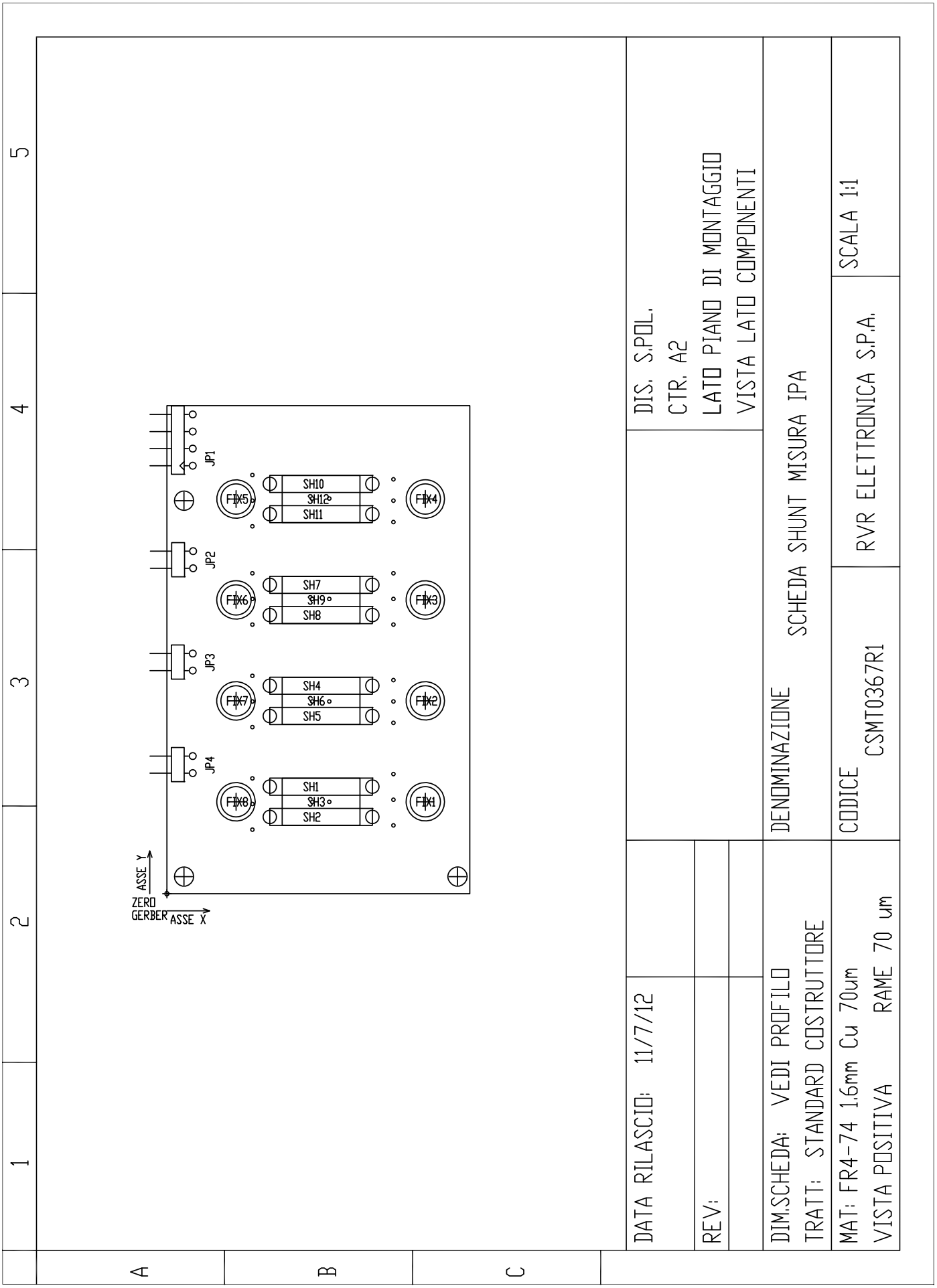

CS1
CSFI0368R1
FIX10
FIX45
C8
680pF
C7
680pF
FIX9
FIX45
C6
680pF
C5
680pF
FIX8
FIX45
C4
680pF
C3
680pF
FIX7
FIX45
C2
680pF
C1
680pF
FIX6
FIX35
FIX5
FIX35
FIX4
FIX35
FIX3
FIX35
FIX2
FIX35
FIX1
FIX35
Project Name: Amplificatore 10KW Plugin
Designer: Tommasi A.
File Location: \\
Folder/File: /
Date: Wednesday, July 11, 2012
Revision: <RevCode>
Approval:
Page: 1 of 1
Size: A4
Project Code: RVR243
Description: Scheda passaparete
Part No.: SLFI0368R01V01

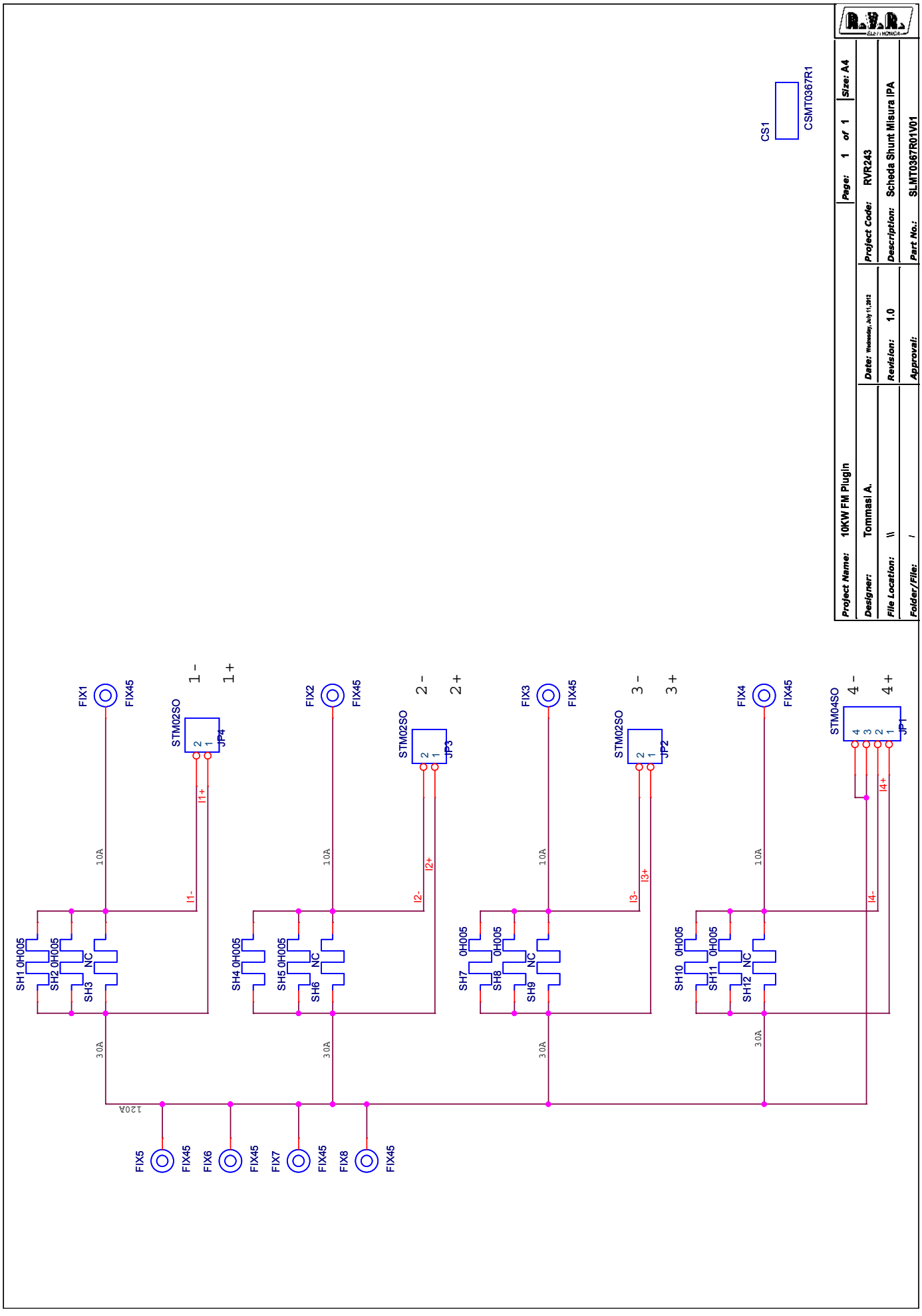
Scheda passaparete Revised: Wednesday, July 11, 2012
SLFI0368R01V01 Revision:

Amplifiucatore 10KW Plugin
RVR243

Item	Quantity	Reference	Part	Description	Code
1	1	CS1	CSFI0368R1	Circuito stampato	CSFI0368R1
2	8	C1,C2,C3,C4,C5,C6,C7,C8	680pF	Cond. SMD 1212 HQ	CHQ681JA101
3	6	FIX1,FIX2,FIX3,FIX4,FIX5, FIX6	FIX35	Foro fissaggio 3.5mm	
4	4	FIX7,FIX8,FIX9,FIX10	FIX45	Foro fissaggio 4.5mm	

6.2.8 Shunt board (CSMT0367R1)




CS1
CSMT0367R1
Project Name: 10KW FM Plugin
Designer: Tommasi A.
File Location: \\
Folder/File: /
Date: Wednesday, July 11, 2012
Revision: 1.0
Approval:
Project Code: RVR243
Description: Scheda Shunt Misura IPA
Part No.: SLMT0367R01V01
Page: 1 of 1
Size: A4
1 -
1 +
2 -
2 +
3 -
3 +
4 -
4 +
STM02SO
STM04SO
JP4
JP3
JP2
JP1
FIX1
FIX2
FIX3
FIX4
FIX5
FIX6
FIX7
FIX8
FIX45
SH1 0H005
SH2 0H005
SH3 NC
SH4 0H005
SH5 0H005
SH6 NC
SH7 0H005
SH8 0H005
SH9 NC
SH10 0H005
SH11 0H005
SH12 NC
I1-
I1+
I2-
I2+
I3-
I3+
I4-
I4+
1.0A
3.0A
120A

Scheda Shunt Misura IPA Revised: Wednesday, July 11, 2012
SLMT0367R01V01 Revision: 1.0

10KW FM Plugin
RVR243

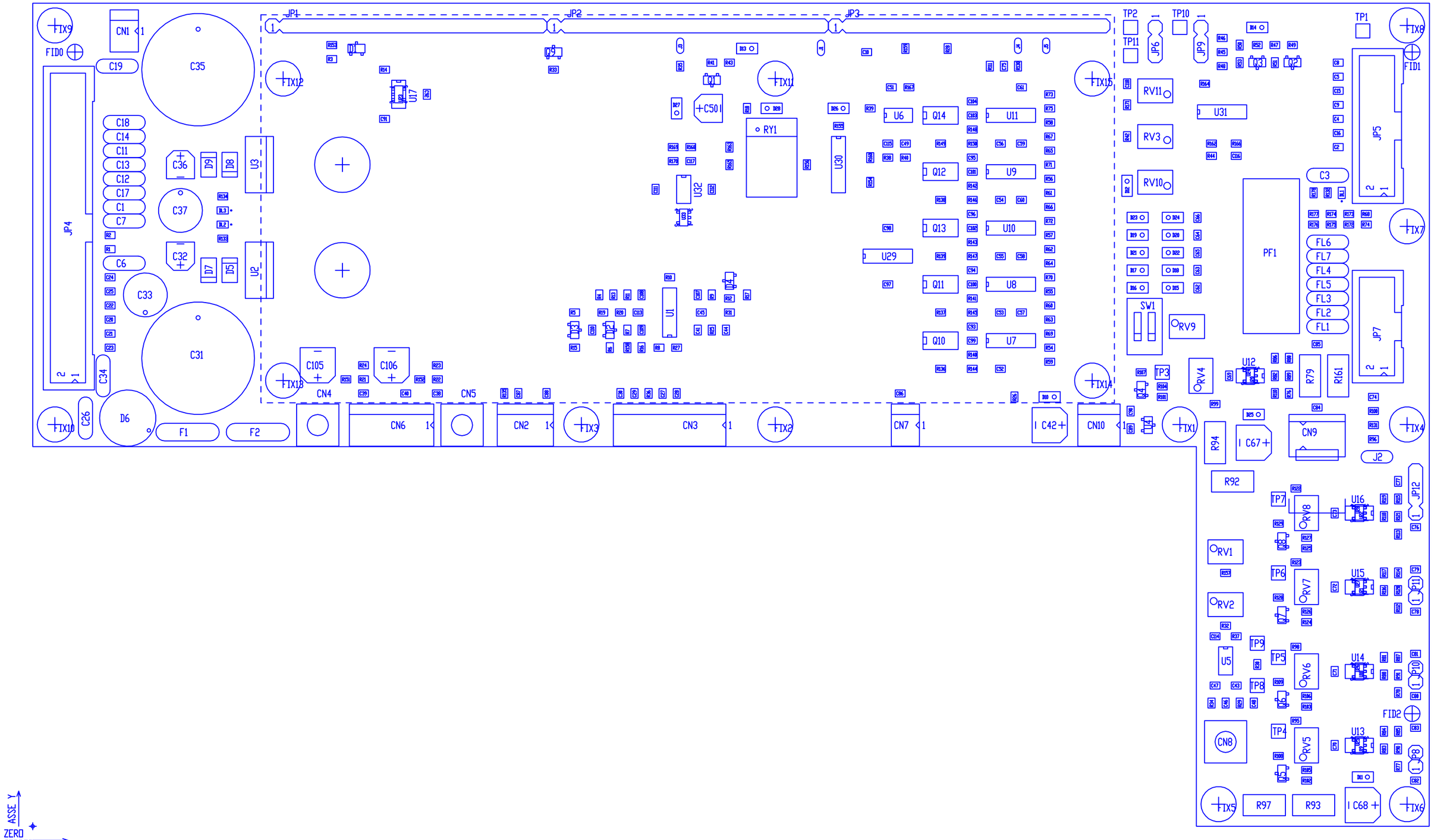
Tommasi A.

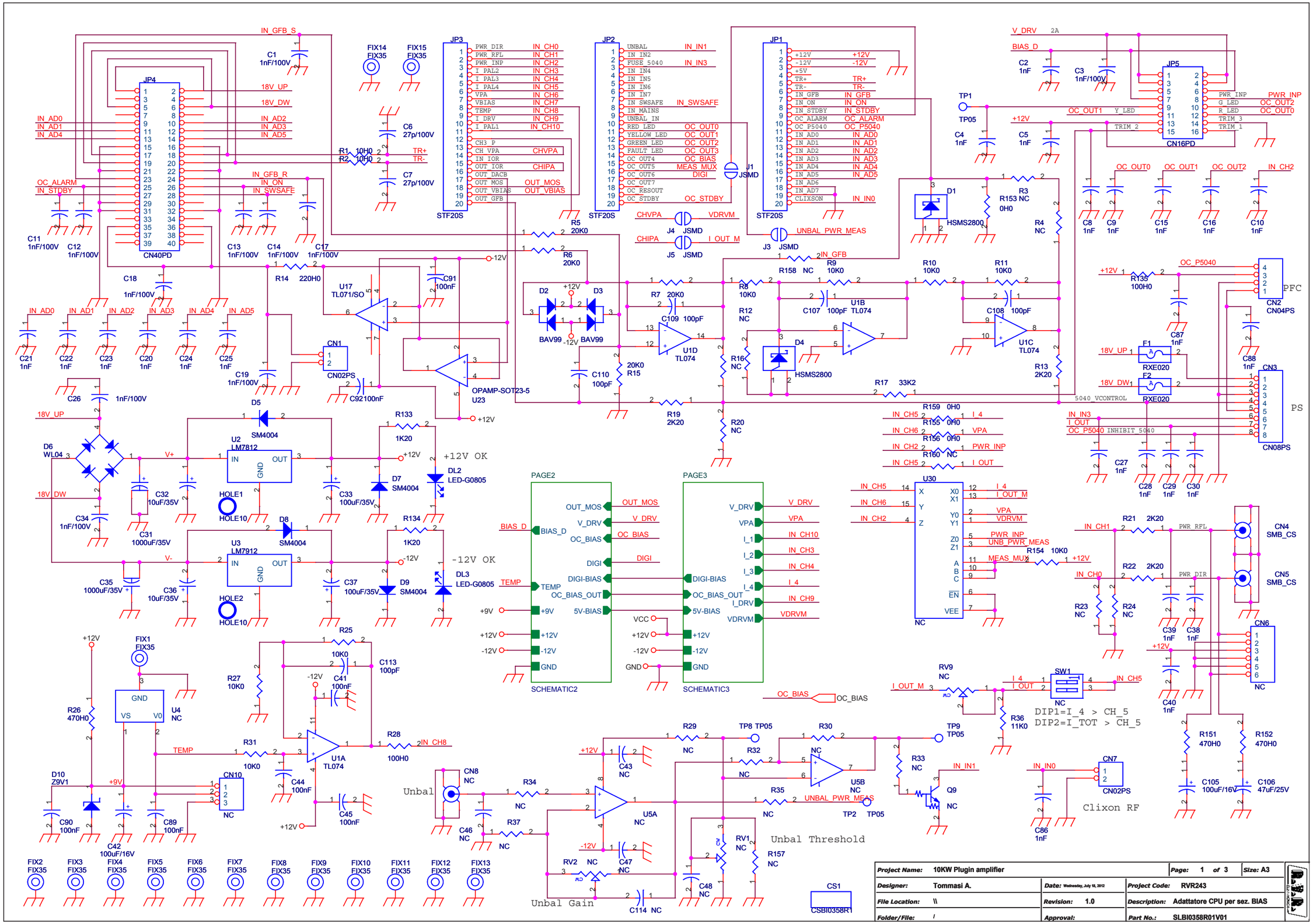
Bill C Page1

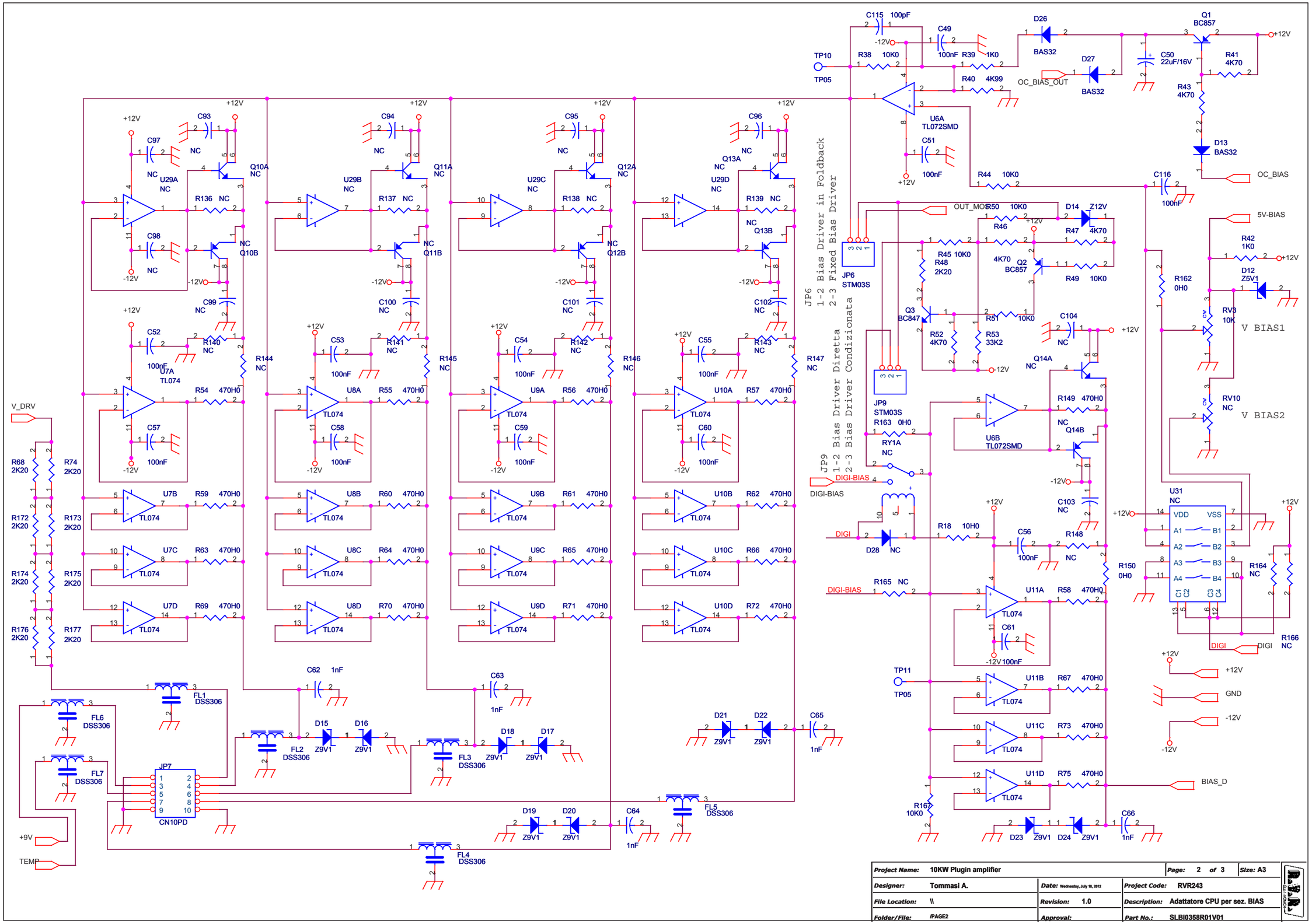
Item	Quantity	Reference	Part	Description	Code	
1	1	CS1	CSMT0367R1	Circuito stampato	CSMT0367R1	
2	8	FIX1,FIX2,FIX3,FIX4,FIX5, FIX6,FIX7,FIX8	FIX45	Foro fissaggio 4.5mm		
3	1	JP1	STM04SO	Strip maschio 4 pin a 90°	CNTSTM40SAM	Nota 1
4	3	JP2,JP3,JP4	STM02SO	Strip maschio 2 pin a 90°	CNTSTM40SAM	Nota 1
5	8	SH1,SH2,SH4,SH5,SH7,SH8, SH10,SH11	0H005	Shunt OAR 3W	RSH03W0H005	
6	4	SH3,SH6,SH9,SH12	NC	Shunt WSR2 4527 3W		

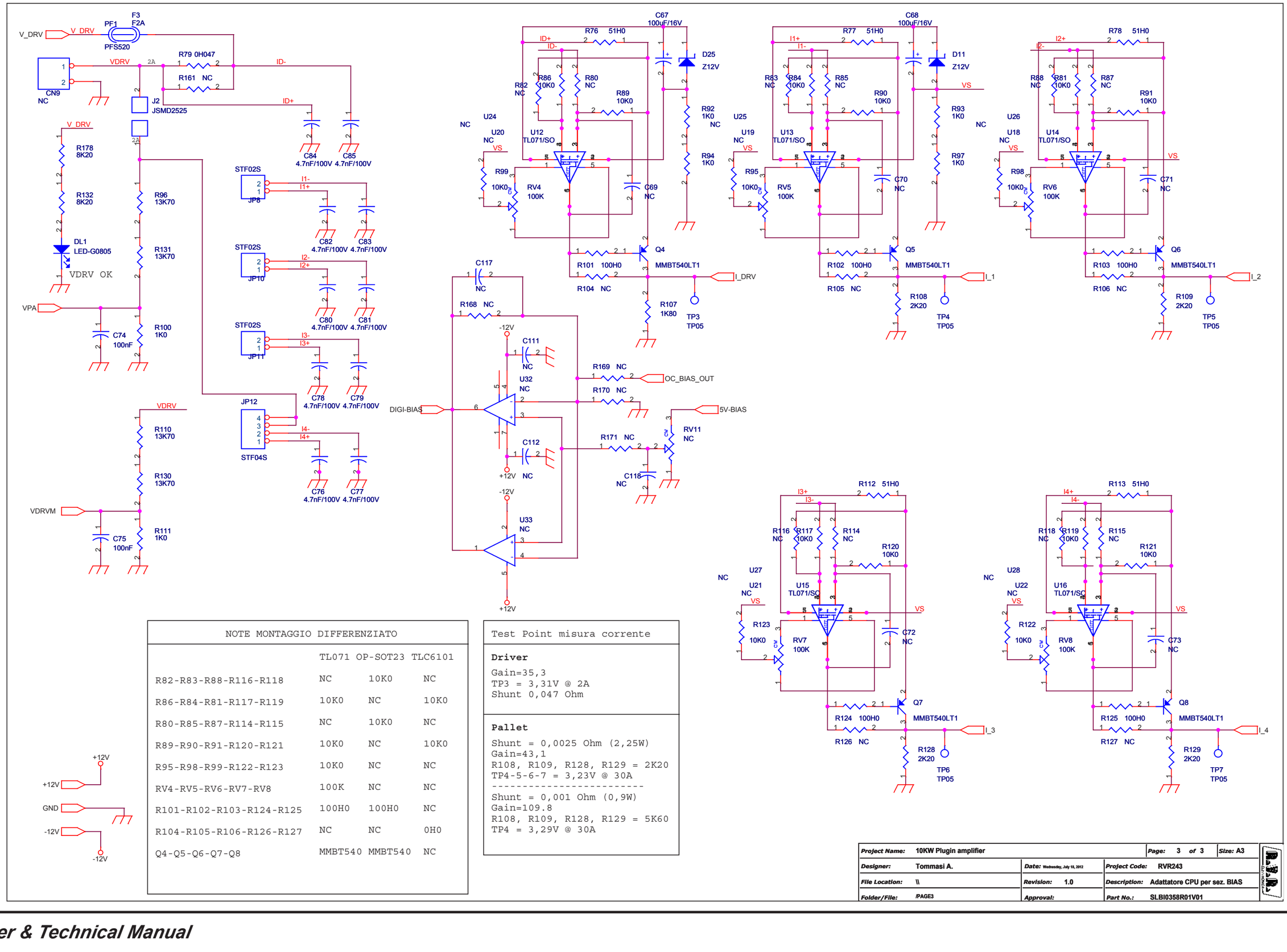
Nota 1 Strip spezzata

6.2.9 Bias board (SLBI0358R01V01)




IN_GFB_S
C1 1nF/100V
18V_UP
18V_DW
IN_AD0
IN_AD1
IN_AD4
IN_AD2
IN_AD3
IN_AD5
OC_ALARM
IN_STDBY
IN_GFB_R
IN_ON
IN_SWSAFE
JP4
CN40PD
FIX14 FIX35
FIX15 FIX35
C6 27p/100V
C7 27p/100V
R1 10H0
R2 10H0
TR+
TR-
JP3
PWR_DIR IN_CH0
PWR_RFL IN_CH1
PWR_INP IN_CH2
I_PAL2 IN_CH3
I_PAL3 IN_CH4
I_PAL4 IN_CH5
VPA IN_CH6
VBIAS IN_CH7
TEMP IN_CH8
I_DRV IN_CH9
I_PAL1 IN_CH10
CH3_P
CH_VPA CHVPA
IN_IOR
OUT_IOR CHIPA
OUT_DACB
OUT_MOS OUT_MOS
OUT_VBIAS OUT_VBIAS
OUT_GFB
STF20S
JP2
UNBAL IN_IN1
IN_IN2
FUSE_5040 IN_IN3
IN_IN4
IN_IN5
IN_IN6
IN_IN7
IN_SWSAFE IN_SWSAFE
IN_MAINS
UNBAL_IN
RED_LED OC_OUT0
YELLOW_LED OC_OUT1
GREEN_LED OC_OUT2
FAULT_LED OC_OUT3
OC_OUT4 OC_BIAS
OC_OUT5 MEAS_MUX
OC_OUT6 DIGI
OC_OUT7
OC_RESOUT
OC_STDBY OC_STDBY
J1 JSMD
CHVPA VDRVM
J4 JSMD
CHIPA I_OUT_M
J5 JSMD
JP1
+12V +12V
-12V -12V
+5V
TR+ TR+
TR- TR-
IN_GFB IN_GFB
IN_ON IN_ON
IN_STDBY IN_STDBY
OC_ALARM OC_ALARM
OC_P5040 OC_P5040
IN_AD0 IN_AD0
IN_AD1 IN_AD1
IN_AD2 IN_AD2
IN_AD3 IN_AD3
IN_AD4 IN_AD4
IN_AD5 IN_AD5
IN_AD6
IN_AD7
CLIXSON IN_IN0
UNBAL_PWR_MEAS
J3 JSMD
R5 20K0
R6 20K0
R14 220H0
C11 1nF/100V
C12 1nF/100V
C13 1nF/100V
C14 1nF/100V
C17 1nF/100V
C18 1nF/100V
C21 1nF
C22 1nF
C23 1nF
C20 1nF
C24 1nF
C25 1nF
C19 1nF/100V
C26 1nF/100V
U17 TL071/SO
C91 100nF
C92100nF
CN1
CN02PS
OPAMP-SOT23-5
U23
+12V
D2
D3
BAV99
-12V
C109 100pF
U1D TL074
R7 20K0
R8 10K0
R9 10K0
R158 NC
R12 NC
R16 NC
20K0 R15
C110 100pF
R19 2K20
R20 NC
R17 33K2
R10 10K0
R11 10K0
U1B TL074
C107 100pF
U1C TL074
C108 100pF
D4
HSMS2800
R13 2K20
R159 0H0
R155 0H0
R156 0H0
R160 NC
I_4
VPA
PWR_INP
I_OUT
U30
I_OUT_M
VPA
VDRVM
PWR_INP
UNB_PWR_MEAS
MEAS_MUX
R154 10K0
NC
V_DRV 2A
BIAS_D
C2 1nF
C3 1nF/100V
JP5
CN16PD
TP1
TP05
C4 1nF
C5 1nF
OC_OUT1
Y_LED
TRIM_2
TRIM_1
R_LED
G_LED
D1
HSMS2800
R3 R153 NC 0H0
R4 NC
OC_OUT0
OC_OUT1
OC_OUT2
IN_CH2
C8 1nF
C9 1nF
C15 1nF
C16 1nF
C10 1nF
OC_P5040
R135 100H0
CN2 CN04PS
PFC
C87 1nF
C88 1nF
F1 RXE020
F2 RXE020
18V_UP
18V_DW
5040_VCONTROL
CN3
CN08PS
PS
IN_IN3
I_OUT
OC_P5040 INHIBIT 5040
C27 1nF
C28 1nF
C29 1nF
C30 1nF
D5
SM4004
D6
WL04
U2 LM7812
U3 LM7912
V+
V-
C32 10uF/35V
C31 1000uF/35V
C34 1nF/100V
C35 1000uF/35V
C36 10uF/35V
C33 100uF/35V
C37 100uF/35V
HOLE1
HOLE2
HOLE10
D8
SM4004
D7
SM4004
D9
SM4004
R133 1K20
R134 1K20
DL2 LED-G0805
+12V OK
DL3 LED-G0805
-12V OK
PAGE2
PAGE3
SCHEMATIC2
SCHEMATIC3
OUT_MOS
V_DRV
OC_BIAS
DIGI
DIGI-BIAS
OC_BIAS_OUT
5V-BIAS
BIAS_D
TEMP
+9V
+12V
-12V
GND
VCC
VPA
I_1
I_2
I_3
I_4
I_DRV
VDRVM
IN_CH10
IN_CH3
IN_CH4
IN_CH9
OC_BIAS
OC_BIAS
TP8 TP05
TP9 TP05
TP2 TP05
R29 NC
R30 NC
R32 NC
R35 NC
R33 NC
U5A NC
U5B NC
C43 NC
C47 NC
C114 NC
R37 NC
R34 NC
C46 NC
CN8 NC
Unbal
Unbal Gain
Unbal Threshold
RV1 NC
RV2 NC
R157 NC
C48 NC
CS1
CSBI0358R1
IN_IN1
Q9 NC
IN_IN0
CN7
CN02PS
Clixon RF
C86 1nF
RV9 NC
SW1
NC
DIP1=I_4 > CH_5
DIP2=I_TOT > CH_5
R36 11K0
R21 2K20
R22 2K20
R23 NC
R24 NC
PWR_RFL
PWR_DIR
CN4 SMB_CS
CN5 SMB_CS
CN6 NC
C39 1nF
C38 1nF
C40 1nF
R151 470H0
R152 470H0
C105 100uF/16V
C106 47uF/25V
R25 10K0
C113 100pF
C41 100nF
R27 10K0
R28 100H0
IN_CH8
U1A TL074
R31 10K0
C44 100nF
C45 100nF
C42 100uF/16V
R26 470H0
U4 NC
D10 Z9V1
C90 100nF
C89 100nF
CN10 NC
FIX1 FIX35
FIX2 FIX35
FIX3 FIX35
FIX4 FIX35
FIX5 FIX35
FIX6 FIX35
FIX7 FIX35
FIX8 FIX35
FIX9 FIX35
FIX10 FIX35
FIX11 FIX35
FIX12 FIX35
FIX13 FIX35
Project Name: 10KW Plugin amplifier
Page: 1 of 3
Size: A3
Designer: Tommasi A.
Date: Wednesday, July 18, 2012
Project Code: RVR243
File Location: \\
Revision: 1.0
Description: Adattatore CPU per sez. BIAS
Folder/File: /
Approval:
Part No.: SLBI0358R01V01


JP6
1-2 Bias Driver in Foldback
2-3 Fixed Bias Driver
JP9
1-2 Bias Driver Diretta
2-3 Bias Driver Condizionata
V_DRV
+9V
TEMP
DIGI-BIAS
DIGI
OC_BIAS_OUT
OC_BIAS
5V-BIAS
V BIAS1
V BIAS2
BIAS_D
GND
-12V
+12V
Project Name: 10KW Plugin amplifier
Page: 2 of 3
Size: A3
Designer: Tommasi A.
Date: Wednesday, July 18, 2012
Project Code: RVR243
File Location: \\
Revision: 1.0
Description: Adattatore CPU per sez. BIAS
Folder/File: /PAGE2
Approval:
Part No.: SLBI0358R01V01



NOTE MONTAGGIO DIFFERENZIATO			
	TL071	OP-SOT23	TLC6101
R82-R83-R88-R116-R118	NC	10K0	NC
R86-R84-R81-R117-R119	10K0	NC	10K0
R80-R85-R87-R114-R115	NC	10K0	NC
R89-R90-R91-R120-R121	10K0	NC	10K0
R95-R98-R99-R122-R123	10K0	NC	NC
RV4-RV5-RV6-RV7-RV8	100K	NC	NC
R101-R102-R103-R124-R125	100H0	100H0	NC
R104-R105-R106-R126-R127	NC	NC	0H0
Q4-Q5-Q6-Q7-Q8	MMBT540	MMBT540	NC

Test Point misura corrente

Driver

Gain=35,3
TP3 = 3,31V @ 2A
Shunt 0,047 Ohm

Pallet

Shunt = 0,0025 Ohm (2,25W)
Gain=43,1
R108, R109, R128, R129 = 2K20
TP4-5-6-7 = 3,23V @ 30A

Shunt = 0,001 Ohm (0,9W)
Gain=109.8
R108, R109, R128, R129 = 5K60
TP4 = 3,29V @ 30A

Project Name:	10KW Plugin amplifier			**Page:** 3 of 3	**Size:** A3
Designer:	Tommasi A.	**Date:** Wednesday, July 18, 2012		**Project Code:**	RVR243
File Location:	\\	**Revision:**	1.0	**Description:**	Adattatore CPU per sez. BIAS
Folder/File:	/PAGE3	**Approval:**		**Part No.:**	SLBI0358R01V01

Adattatore CPU per sez. BIAS Revised: Wednesday, July 18, 2012
SLBI0358R01V01 Revision: 1.0

10KW Plugin amplifier
RVR243

Item	Quantity	Reference	Part	Description	Code	
1	2	CN1,CN7	CN02PS	Connettore 2 poli Mascon	CNTMASM20PCS	Spezzato
2	1	CN2	CN04PS	Connettore 4 poli Mascon	CNTMASM20PCS	Spezzato
3	1	CN3	CN08PS	Connettore 8 poli Mascon	CNTMASM20PCS	Spezzato
4	2	CN4,CN5	SMB_CS	Connettore SMB cs	CNTSMBMCSD	
5	1	CN6	NC	Connettore 6 poli Mascon		
6	1	CN8	NC	Connettore SMB cs		
7	1	CN9	NC	Conn. Phoenix MSTB p. 5mm 2 pin		
8	1	CN10	NC	Connettore 3 poli Mascon		
9	1	CS1	CSBI0358R1	Circuito stampato	CSBI0358R1	
10	11	C1,C3,C11,C12,C13,C14, C17,C18,C19,C26,C34	1nF/100V	Cond. ceramico p 5mm	CKM102KC102P	
11	29	C2,C4,C5,C8,C9,C10,C15, C16,C20,C21,C22,C23,C24, C25,C27,C28,C29,C30,C38, C39,C40,C62,C63,C64,C65, C66,C86,C87,C88	1nF	Cond. SMD 0805	CCC085102JNC	
12	2	C6,C7	27p/100V	Cond. ceramico p 5mm	CKM270KC101C	
13	2	C31,C35	1000uF/35V	Cond. Elettr. Dia 20 105°C	CEA108MW630V	Nota 1
14	2	C32,C36	10uF/35V	Cond. Elett. SMD d. 5mm	CES106B500	
15	2	C33,C37	100uF/35V	Cond. Elettr. Dia 8 P3 105°C	CEA107MB350V	Nota 2
16	6	C41,C107,C108,C109,C110, C115	100pF	Cond. SMD 0805	CCC085101JCC	
17	4	C42,C67,C68,C105	100uF/16V	Cond. Elett. SMD d. 6.3mm	CES107C160A	
18	26	C43,C46,C47,C48,C69,C70, C71,C72,C73,C93,C94,C95, C96,C97,C98,C99,C100, C101,C102,C103,C104,C111, C112,C114,C117,C118	NC	Cond. SMD 0805		
19	22	C44,C45,C49,C51,C52,C53, C54,C55,C56,C57,C58,C59, C60,C61,C74,C75,C89,C90, C91,C92,C113,C116	100nF	Cond. SMD 0805	CCC085104KXC	
20	1	C50	22uF/16V	Cond. Elett. SMD d. 5mm	CES226B160	
21	10	C76,C77,C78,C79,C80,C81, C82,C83,C84,C85	4.7nF/100V	Cond. SMD 0805	CCC085472KDX	
22	1	C106	47uF/25V	Cond. Elett. SMD d. 6.3mm	CES476C350A	
23	3	DL1,DL2,DL3	LED-G0805	LED Verde SMD 0805	LEDV0805	
24	2	D1,D4	HSMS2800	Diodo Hot Carrier SOT23	DISHSMS2800	
25	2	D2,D3	BAV99	Doppio Diodo SMD SOT23	DISBAV99	
26	4	D5,D7,D8,D9	SM4004	Diodo SMD cont. SMA	DIS4007SMA	
27	1	D6	WL04	Ponte diodi tondi W	PNRWL04	
28	11	D10,D15,D16,D17,D18,D19, D20,D21,D22,D23,D24	Z9V1	MINIMELF SMD Zener Diode	DIZ9V1MINI	
29	3	D11,D14,D25	Z12V	MINIMELF SMD Zener Diode	DIZ12VMINI	
30	1	D12	Z5V1	MINIMELF SMD Zener Diode	DIZ5V1MINI	
31	3	D13,D26,D27	BAS32	MINIMELF SMD Diode	DISBAS32MINI	
32	1	D28	NC	MINIMELF SMD Diode		
33	15	FIX1,FIX2,FIX3,FIX4,FIX5, FIX6,FIX7,FIX8,FIX9, FIX10,FIX11,FIX12,FIX13, FIX14,FIX15	FIX35	Foro fissaggio 3.5mm		
34	7	FL1,FL2,FL3,FL4,FL5,FL6, FL7	DSS306	Filtro EMI Murata DSS306	FEA33F223F160	
35	2	F1,F2	RXE020	Fusibile autorip. RXE p5mm	FUSAUTRX020	
36	1	F3	F2A	Fusibile rapido 5x20mm	FUS5X20RP2	
37	2	HOLE1,HOLE2	HOLE10	Foro da 10mm		
38	3	JP1,JP2,JP3	STF20S	Strip femmina 20 pin	CNTSTF20SDB	

39	1	JP4	CN40PD	Conn.M.C.S.Dritto 40P	CNTMCS40A	
40	1	JP5	CN16PD	Conn.M.C.S.Dritto 16P alette.	CNTMCS16A	
41	2	JP6,JP9	STM03S	Strip maschio 3 pin	CNTSTM40DDA	Spezzata
42	1	JP7	CN10PD	Connettore 10 poli Flat cs con alette	CNTMCS10A	
43	3	JP8,JP10,JP11	STF02S	Strip femmina 2 pin	CNTSTF20SDB	Spezzata
44	1	JP12	STF04S	Strip femmina 4 pin	CNTSTF20SDB	Spezzata
45	4	J1,J3,J4,J5	JSMD	Pad SMD a saldare		
46	1	J2	JSMD2525	Pad SMD saldare 2 x 2.5x2.5 mm		
47	1	PF1	PFS520	Portafusibile 5x20	PFS5X20CS	Nota 3
48	2	Q1,Q2	BC857	Trans. PNP SOT23	TRNBC857	
49	1	Q3	BC847	Trans. NPN SOT23	TRNBC647	
50	5	Q4,Q5,Q6,Q7,Q8	MMBT540LT1	Trans. PNP SOT23	TRNMMBT5401	
51	1	Q9	NC	Trans./Res. NPN SOT23		
52	5	Q10,Q11,Q12,Q13,Q14	NC	Medium power compl. trans.	TRNZDT6790	
53	5	RV1,RV2,RV9,RV10,RV11	NC	Trimmer Rg V 3269W SMD		
54	1	RV3	10K	Trimmer Rg V 3269W SMD	RVT3269WK010	
55	5	RV4,RV5,RV6,RV7,RV8	100K	Trimmer Rg V 3269W SMD	RVT3269WK100	
56	1	RY1	NC	Rele' TQ2		
57	3	R1,R2,R18	10H0	Res. SMD 0805 1%	RCH085F0100H	
58	52	R3,R4,R12,R16,R20,R23, R24,R29,R30,R32,R33,R34, R35,R37,R80,R82,R83,R85, R87,R88,R104,R105,R106, R114,R115,R116,R118,R126, R127,R136,R137,R138,R139, R140,R141,R142,R143,R144, R145,R146,R147,R148,R157, R158,R160,R164,R165,R166, R168,R169,R170,R171	NC	Res. SMD 0805 1%		
59	4	R5,R6,R7,R15	20K0	Res. SMD 0805 1%	RCH085F0020K	
60	30	R8,R9,R10,R11,R25,R27, R31,R38,R44,R45,R49,R50, R51,R81,R84,R86,R89,R90, R91,R95,R98,R99,R117, R119,R120,R121,R122,R123, R154,R167	10K0	Res. SMD 0805 1%	RCH085F0010K	
61	17	R13,R19,R21,R22,R48,R68, R74,R108,R109,R128,R129, R172,R173,R174,R175,R176, R177	2K20	Res. SMD 0805 1%	RCH085F002K2	
62	1	R14	220H0	Res. SMD 0805 1%	RCH085F0220H	
63	2	R17,R53	33K2	Res. SMD 0805 1%	RCH085F033K2	
64	24	R26,R54,R55,R56,R57,R58, R59,R60,R61,R62,R63,R64, R65,R66,R67,R69,R70,R71, R72,R73,R75,R149,R151, R152	470H0	Res. SMD 0805 1%	RCH085F0470H	
65	7	R28,R101,R102,R103,R124, R125,R135	100H0	Res. SMD 0805 1%	RCH085F0100H	
66	1	R36	11K0	Res. SMD 0805 1%	RCH085F0011K	
67	4	R39,R42,R100,R111	1K0	Res. SMD 0805 1%	RCH085F0001K	
68	1	R40	4K99	Res. SMD 0805 1%	RCH085F04K99	
69	5	R41,R43,R46,R47,R52	4K70	Res. SMD 0805 1%	RCH085F004K7	
70	5	R76,R77,R78,R112,R113	51H0	Res. SMD 0805 1%	RCH085F0051H	
71	1	R79	0H047	Res. SMD 2512 1%	RSH4.5A0H047	
72	4	R92,R93,R94,R97	1K0	Res. SMD 2512 1%	RCH252F0001K	
73	4	R96,R110,R130,R131	13K70	Res. SMD 0805 1%	RCH085F013K7	
74	1	R107	1K80	Res. SMD 0805 1%	RCH085F001K8	
75	2	R132,R178	8K20	Res. SMD 0805 1%	RCH085F008K2	
76	2	R133,R134	1K20	Res. SMD 0805 1%	RCH085F001K2	
77	7	R150,R153,R155,R156,R159, R162,R163	0H0	Res. SMD 0805 1%	RCH085F0000H	
78	1	R161	NC	Res. SMD 2512 1%		
79	1	SW1	NC	Dip switch 2 vie		
80	11	TP1,TP2,TP3,TP4,TP5,TP6, TP7,TP8,TP9,TP10,TP11	NC	Test point		

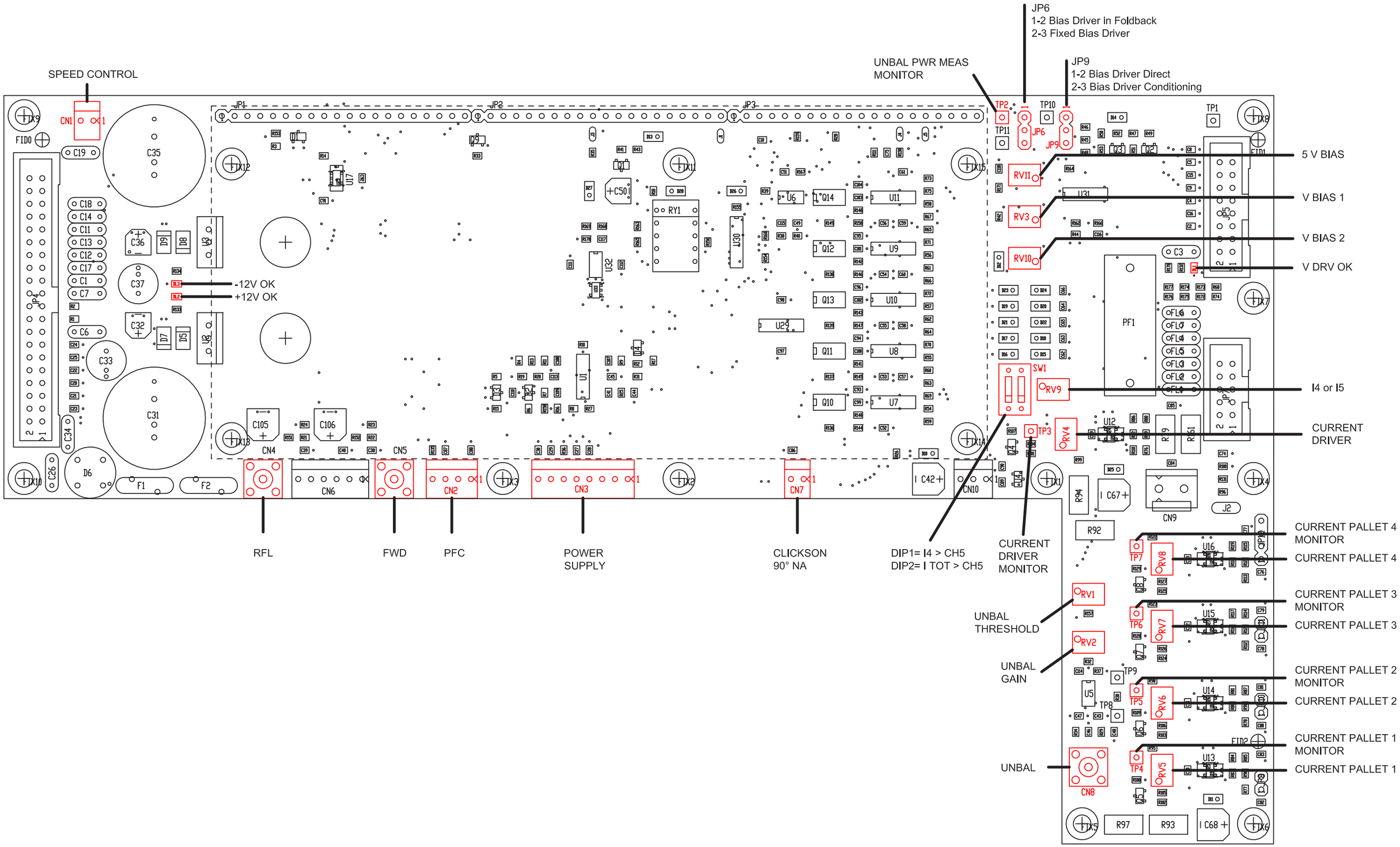
81	6	U1,U7,U8,U9,U10,U11	TL074	Quad Op. SMD SO14	CILTL074SMD
82	1	U2	LM7812	Stabilizzatore TO220	CIL7812P
83	1	U3	LM7912	Stabilizzatore TO220	CIL7912P
84	1	U4	NC	Temperature sensor	
85	1	U5	NC	Dual Op. SMD SO8	
86	1	U6	TL072SMD	Dual Op. SMD SO8	CILTL072SMD
87	6	U12,U13,U14,U15,U16,U17	TL071/SO	Single Op. SMD SO8	CILTL071SMD
88	5	U18,U19,U20,U21,U22	NC	High side current sense	
89	1	U23	NC	Single Op Amp SOT23-5	
90	6	U24,U25,U26,U27,U28,U33	NC	Single Op Amp SOT23-5	
91	1	U29	NC	Quad Op. SMD SO14	
92	1	U30	NC	Analog Switch SMD SO16	
93	1	U31	NC	Analog Switch SMD SO14	
94	1	U32	NC	Single Op. SMD SO8	

Nota 1 Sostituire con modello a 105°C

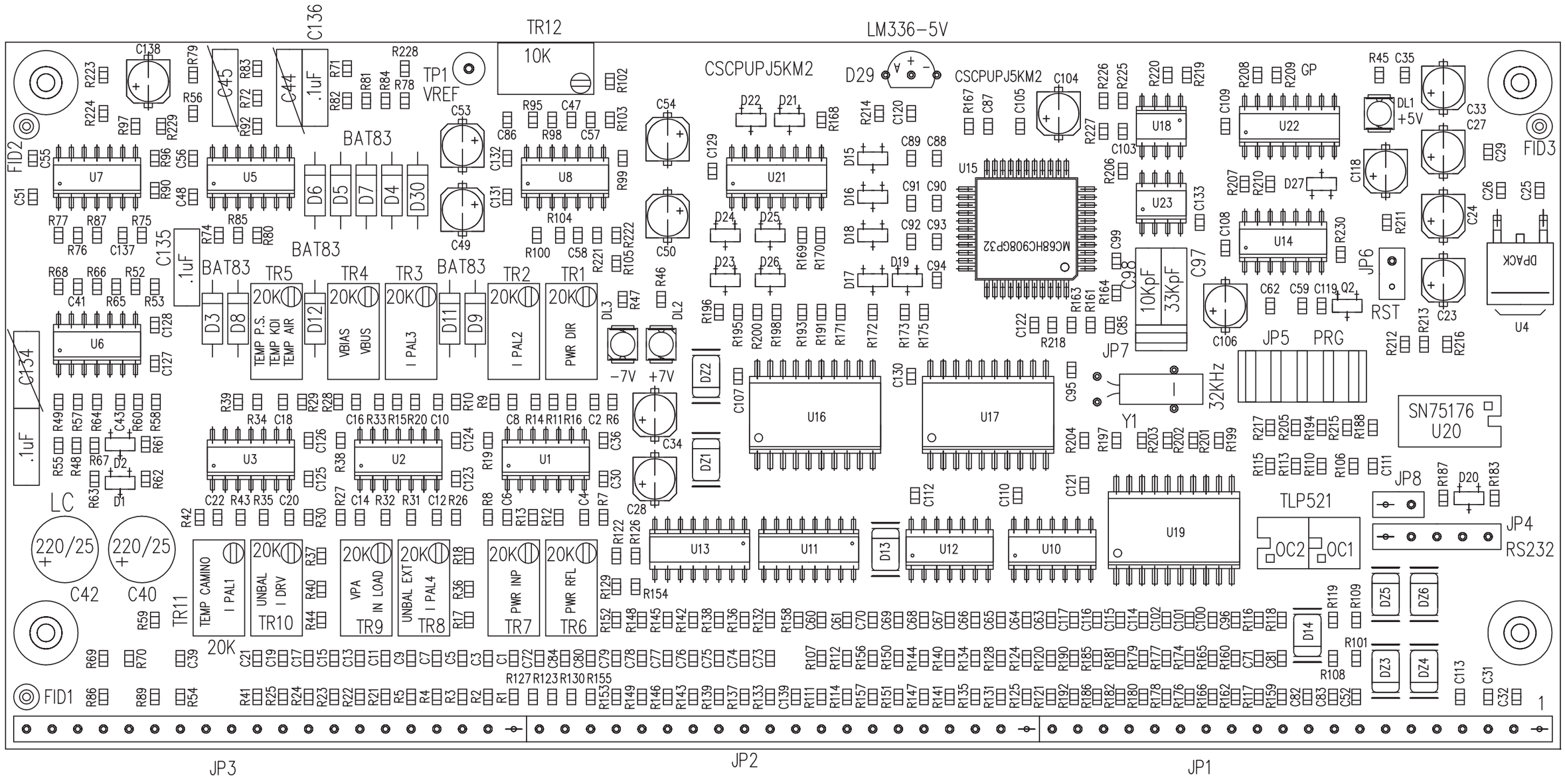
Nota 2 Verifica dimensioni, eventuale 2000uF

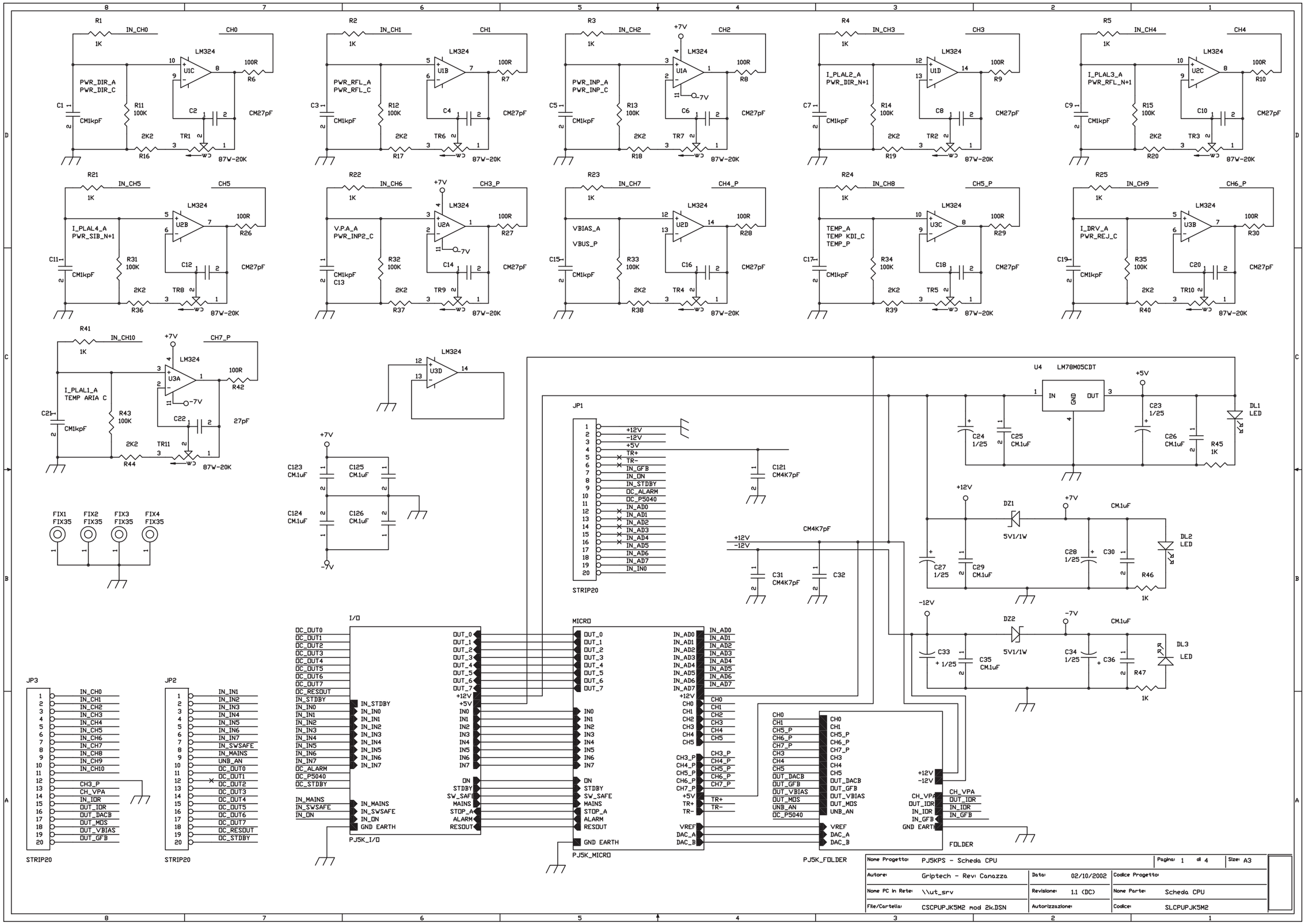
Nota 3 Aggiungere COPPFS5X20CS

6.2.9.1 Settings



6.2.10 CPU board (CPUPJ5KMC2)




R1 IN_CH0 1K LM324 U1C CH0 100R R6 PWR_DIR_A PWR_DIR_C C1 CM1kpF R11 100K C2 CM27pF 2K2 TR1 R16 87W-20K
R2 IN_CH1 1K LM324 U1B CH1 100R R7 PWR_RFL_A PWR_RFL_C C3 CM1kpF R12 100K C4 CM27pF 2K2 TR6 R17 87W-20K
R3 IN_CH2 +7V 1K LM324 U1A CH2 100R R8 PWR_INP_A PWR_INP_C C5 CM1kpF R13 100K C6 CM27pF -7V 2K2 TR7 R18 87W-20K
R4 IN_CH3 1K LM324 U1D CH3 100R R9 I_PLAL2_A PWR_DIR_N+1 C7 CM1kpF R14 100K C8 CM27pF 2K2 TR2 R19 87W-20K
R5 IN_CH4 1K LM324 U2C CH4 100R R10 I_PLAL3_A PWR_RFL_N+1 C9 CM1kpF R15 100K C10 CM27pF 2K2 TR3 R20 87W-20K
R21 IN_CH5 1K LM324 U2B CH5 100R R26 I_PLAL4_A PWR_SIB_N+1 C11 CM1kpF R31 100K C12 CM27pF 2K2 TR8 R36 87W-20K
R22 IN_CH6 +7V 1K LM324 U2A CH3_P 100R R27 V.P.A_A PWR_INP2_C C13 CM1kpF R32 100K C14 CM27pF -7V 2K2 TR9 R37 87W-20K
R23 IN_CH7 1K LM324 U2D CH4_P 100R R28 VBIAS_A VBUS_P C15 CM1kpF R33 100K C16 CM27pF 2K2 TR4 R38 87W-20K
R24 IN_CH8 1K LM324 U3C CH5_P 100R R29 TEMP_A TEMP KDI_C TEMP_P C17 CM1kpF R34 100K C18 CM27pF 2K2 TR5 R39 87W-20K
R25 IN_CH9 1K LM324 U3B CH6_P 100R R30 I_DRV_A PWR_REJ_C C19 CM1kpF R35 100K C20 CM27pF 2K2 TR10 R40 87W-20K
R41 IN_CH10 +7V 1K LM324 U3A CH7_P 100R R42 I_PLAL1_A TEMP ARIA C C21 CM1kpF R43 100K C22 27pF 2K2 TR11 R44 87W-20K
LM324 U3D
FIX1 FIX35 FIX2 FIX35 FIX3 FIX35 FIX4 FIX35
+7V C123 CM.1uF C125 CM.1uF C124 CM.1uF C126 CM.1uF -7V
JP1 +12V -12V +5V TR+ TR- IN_GFB IN_ON IN_STDBY OC_ALARM OC_P5040 IN_AD0 IN_AD1 IN_AD2 IN_AD3 IN_AD4 IN_AD5 IN_AD6 IN_AD7 IN_IN0 STRIP20
C121 CM4K7pF
+12V -12V CM4K7pF C31 CM4K7pF C32
U4 LM78M05CDT IN GND OUT +5V C24 1/25 C25 CM.1uF C23 1/25 C26 CM.1uF DL1 LED R45 1K
+12V DZ1 5V1/1W +7V CM.1uF C27 1/25 C29 CM.1uF C28 1/25 C30 DL2 LED R46 1K
-12V DZ2 5V1/1W -7V CM.1uF C33 1/25 C35 CM.1uF C34 1/25 C36 DL3 LED R47 1K
I/O OC_OUT0 OC_OUT1 OC_OUT2 OC_OUT3 OC_OUT4 OC_OUT5 OC_OUT6 OC_OUT7 OC_RESOUT IN_STDBY IN_IN0 IN_IN1 IN_IN2 IN_IN3 IN_IN4 IN_IN5 IN_IN6 IN_IN7 OC_ALARM OC_P5040 OC_STDBY IN_MAINS IN_SWSAFE IN_ON GND EARTH OUT_0 OUT_1 OUT_2 OUT_3 OUT_4 OUT_5 OUT_6 OUT_7 +12V +5V IN0 IN1 IN2 IN3 IN4 IN5 IN6 IN7 ON STDBY SW_SAFE MAINS STOP_A ALARM RESOUT PJ5K_I/O
MICRO OUT_0 OUT_1 OUT_2 OUT_3 OUT_4 OUT_5 OUT_6 OUT_7 IN0 IN1 IN2 IN3 IN4 IN5 IN6 IN7 ON STDBY SW_SAFE MAINS STOP_A ALARM RESOUT GND EARTH IN_AD0 IN_AD1 IN_AD2 IN_AD3 IN_AD4 IN_AD5 IN_AD6 IN_AD7 +12V +5V CH0 CH1 CH2 CH3 CH4 CH5 CH3_P CH4_P CH5_P CH6_P CH7_P TR+ TR- VREF DAC_A DAC_B PJ5K_MICRO
CH0 CH1 CH5_P CH6_P CH7_P CH3 CH4 CH5 OUT_DACB OUT_GFB OUT_VBIAS OUT_MOS UNB_AN OC_P5040 +12V -12V CH_VPA OUT_IDR IN_IDR IN_GFB GND EARTH FOLDER PJ5K_FOLDER
JP3 IN_CH0 IN_CH1 IN_CH2 IN_CH3 IN_CH4 IN_CH5 IN_CH6 IN_CH7 IN_CH8 IN_CH9 IN_CH10 CH3_P CH_VPA IN_IDR OUT_DACB OUT_MOS OUT_VBIAS OUT_GFB STRIP20
JP2 IN_IN1 IN_IN2 IN_IN3 IN_IN4 IN_IN5 IN_IN6 IN_IN7 IN_SWSAFE IN_MAINS UNB_AN OC_OUT0 OC_OUT1 OC_OUT2 OC_OUT3 OC_OUT4 OC_OUT5 OC_OUT6 OC_OUT7 OC_RESOUT OC_STDBY STRIP20
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Autore: Griptech - Revi Canazza | Data: 02/10/2002 | Codice Progetto:
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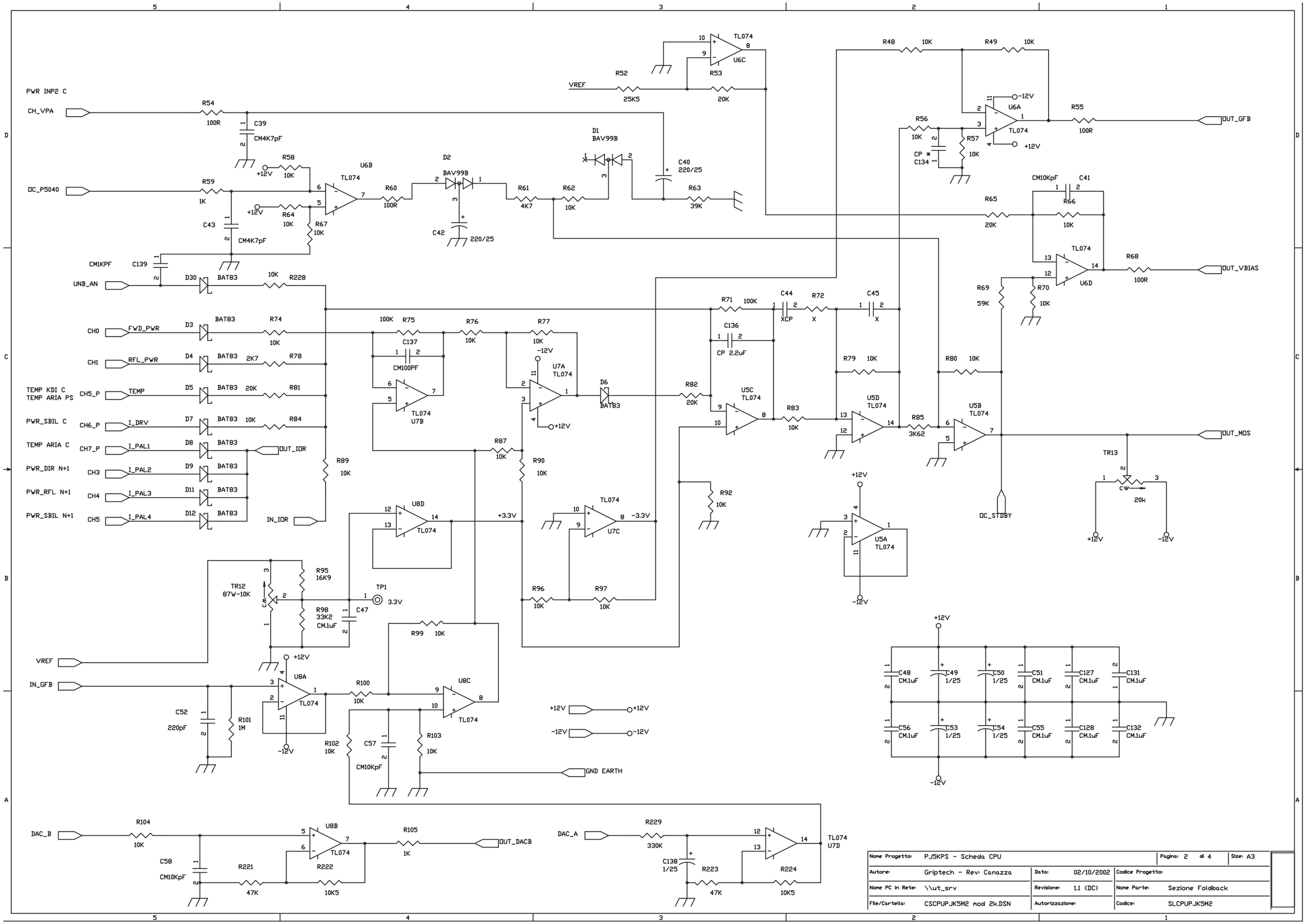

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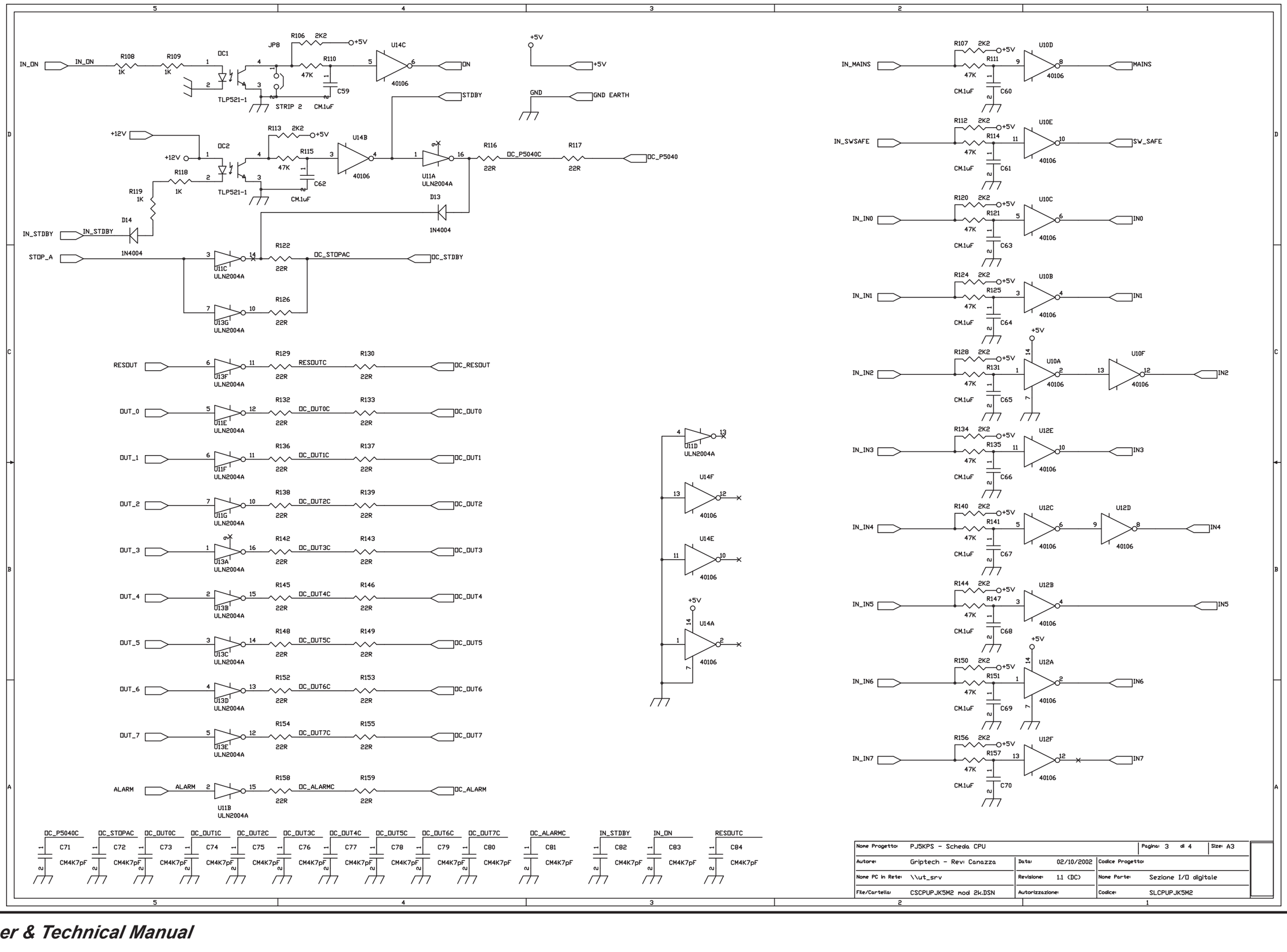
IN_ON
IN_ON
R108 1K
R109 1K
DC1
TLP521-1
JP8
R106 2K2
+5V
R110 47K
C59 CM.1uF
STRIP 2
U14C 40106
ON
STDBY
+5V
+5V
GND
GND EARTH
+12V
+12V
DC2
TLP521-1
R113 2K2
+5V
R115 47K
C62 CM.1uF
U14B 40106
R116 22R
DC_P5040C
R117 22R
DC_P5040
U11A ULN2004A
R118 1K
R119 1K
D14
IN_STDBY
IN_STDBY
1N4004
D13
1N4004
STOP_A
U11C ULN2004A
R122 22R
DC_STOPAC
DC_STDBY
U13G ULN2004A
R126 22R
RESOUT
U13F ULN2004A
R129 22R
RESOUTC
R130 22R
DC_RESOUT
OUT_0
U11E ULN2004A
R132 22R
DC_OUT0C
R133 22R
DC_OUT0
OUT_1
U11F ULN2004A
R136 22R
DC_OUT1C
R137 22R
DC_OUT1
OUT_2
U13H ULN2004A
R138 22R
DC_OUT2C
R139 22R
DC_OUT2
OUT_3
U13A ULN2004A
R142 22R
DC_OUT3C
R143 22R
DC_OUT3
OUT_4
U13B ULN2004A
R145 22R
DC_OUT4C
R146 22R
DC_OUT4
OUT_5
U13C ULN2004A
R148 22R
DC_OUT5C
R149 22R
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R153 22R
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OUT_7
U13E ULN2004A
R154 22R
DC_OUT7C
R155 22R
DC_OUT7
ALARM
ALARM
U11B ULN2004A
R158 22R
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R159 22R
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U11D ULN2004A
U14F 40106
U14E 40106
U14A 40106
IN_MAINS
R107 2K2
+5V
R111 47K
C60 CM.1uF
U10D 40106
MAINS
IN_SWSAFE
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R114 47K
C61 CM.1uF
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+5V
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U10C 40106
IN0
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+5V
R125 47K
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U10B 40106
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+5V
R131 47K
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U10A 40106
U10F 40106
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IN_IN3
R134 2K2
+5V
R135 47K
C66 CM.1uF
U12E 40106
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IN_IN4
R140 2K2
+5V
R141 47K
C67 CM.1uF
U12C 40106
U12D 40106
IN4
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+5V
R147 47K
C68 CM.1uF
U12B 40106
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+5V
R151 47K
C69 CM.1uF
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IN6
IN_IN7
R156 2K2
+5V
R157 47K
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U12F 40106
IN7
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DC_STOPAC C72 CM4K7pF
DC_OUT0C C73 CM4K7pF
DC_OUT1C C74 CM4K7pF
DC_OUT2C C75 CM4K7pF
DC_OUT3C C76 CM4K7pF
DC_OUT4C C77 CM4K7pF
DC_OUT5C C78 CM4K7pF
DC_OUT6C C79 CM4K7pF
DC_OUT7C C80 CM4K7pF
DC_ALARMC C81 CM4K7pF
IN_STDBY C82 CM4K7pF
IN_ON C83 CM4K7pF
RESOUTC C84 CM4K7pF
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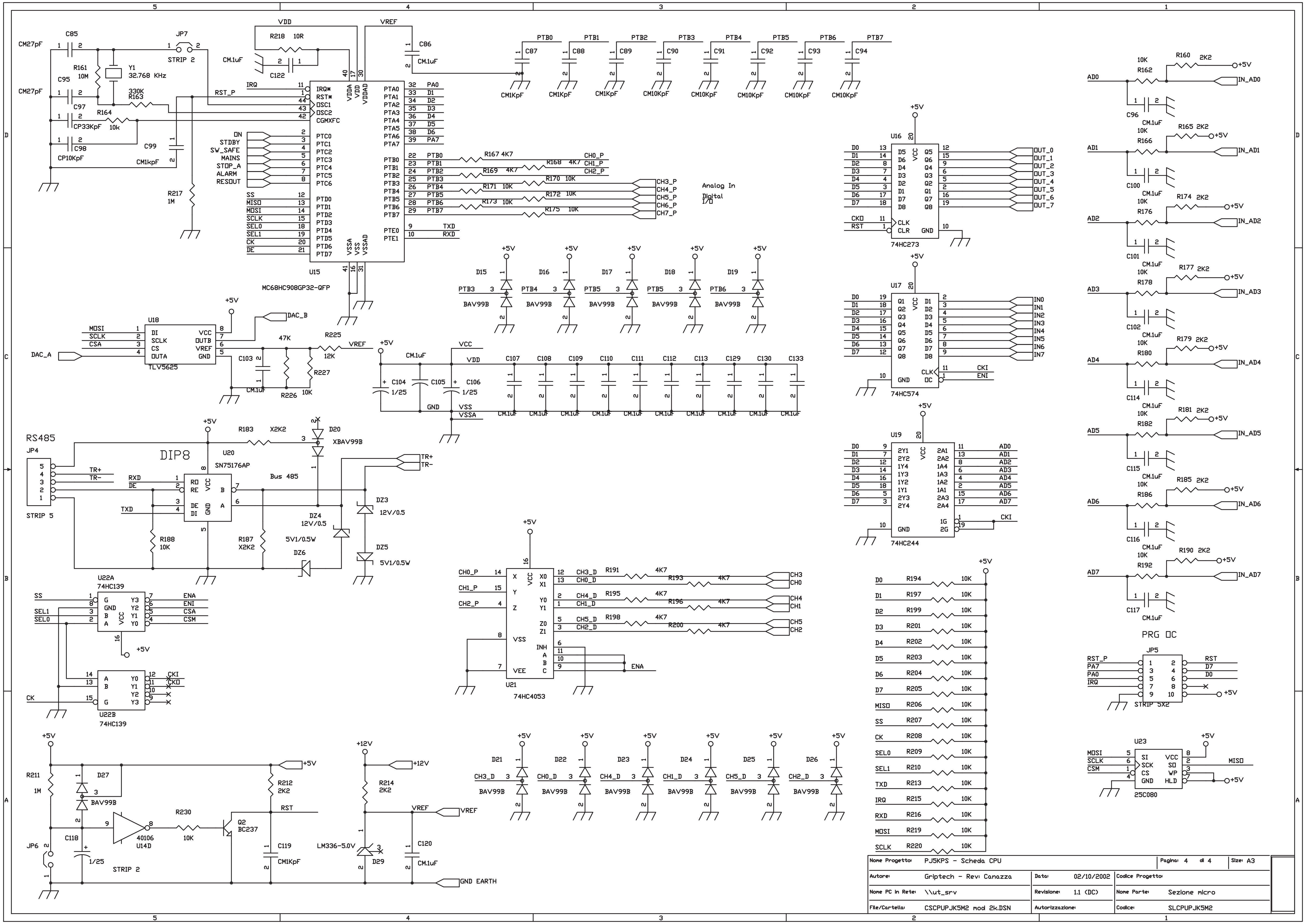
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74HC244
U19
25C080
U23
RS485
DIP8
Bus 485
Analog In
Digital I/O
PRG DC
LM336-5.0V
BC237
40106

Revised: Monday, July 01, 2013
Revision: 1.1

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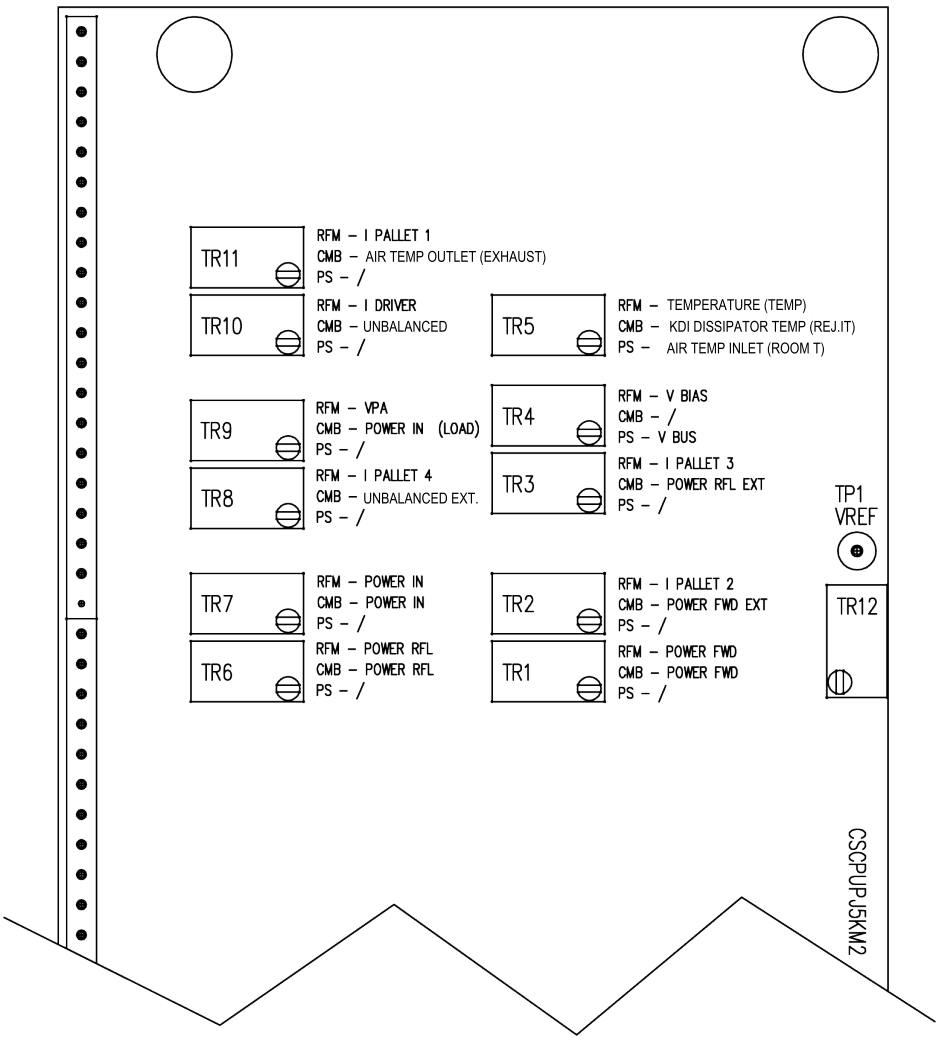
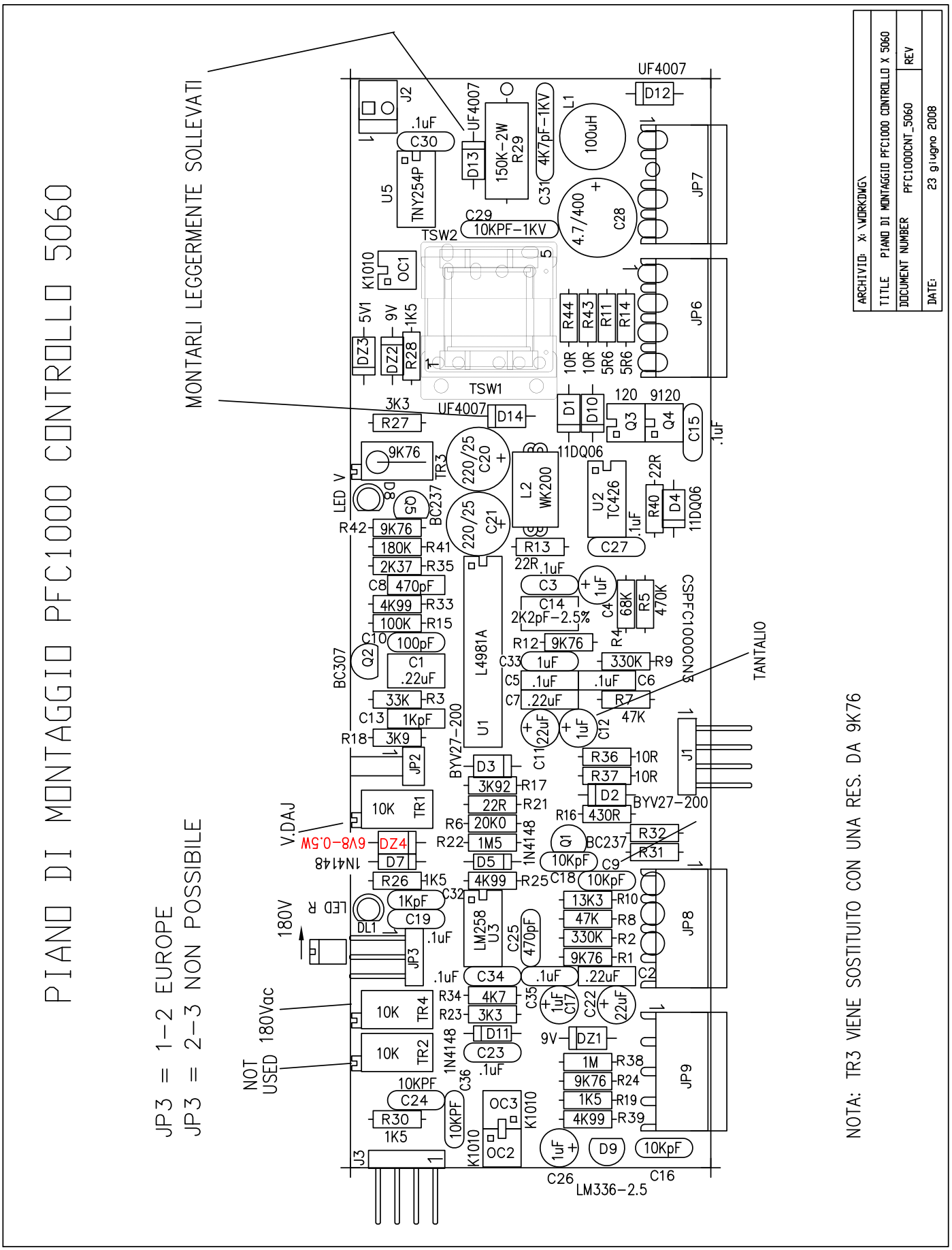
Item	Quantity	Reference	Part
1	17	C1,C3,C5,C7,C9,C11,C13, C15,C17,C19,C21,C87,C88, C89,C99,C119,C139	CM1kpF
2	12	C2,C4,C6,C8,C10,C12,C14, C16,C18,C20,C85,C95	CM27pF
3	1	C22	27pF
4	14	C23,C24,C27,C28,C33,C34, C49,C50,C53,C54,C104, C106,C118,C138	1/25
5	54	C25,C26,C29,C30,C35,C36, C47,C48,C51,C55,C56,C59, C60,C61,C62,C63,C64,C65, C66,C67,C68,C69,C70,C86, C96,C100,C101,C102,C103, C105,C107,C108,C109,C110, C111,C112,C113,C114,C115, C116,C117,C120,C122,C123, C124,C125,C126,C127,C128, C129,C130,C131,C132,C133	CM.1uF
6	19	C31,C32,C39,C43,C71,C72, C73,C74,C75,C76,C77,C78, C79,C80,C81,C82,C83,C84, C121	CM4K7pF
7	2	C40,C42	220/25
8	8	C41,C57,C58,C90,C91,C92, C93,C94	CM10KpF
9	1	C44	XCP
10	2	C45,R72	X
11	1	C52	220pF
12	1	C97	CP33KpF
13	1	C98	CP10KpF
14	1	C134	CP *
15	1	C136	CP 2.2uF
16	1	C137	CM100PF
17	3	DL1,DL2,DL3	LED
18	2	DZ1,DZ2	5V1/1W
19	2	DZ3,DZ4	12V/0.5
20	2	DZ5,DZ6	5V1/0.5W
21	14	D1,D2,D15,D16,D17,D18, D19,D21,D22,D23,D24,D25, D26,D27	BAV99B
22	10	D3,D4,D5,D6,D7,D8,D9,D11, D12,D30	BAT83
23	2	D13,D14	1N4004
24	1	D20	XBAV99B
25	1	D29	LM336-5.0V
26	4	FIX1,FIX2,FIX3,FIX4	FIX35
27	3	JP1,JP2,JP3	STRIP20
28	1	JP4	STRIP 5
29	1	JP5	STRIP 5X2
30	3	JP6,JP7,JP8	STRIP 2
31	2	OC1,OC2	TLP521-1
32	1	Q2	BC237
33	20	R1,R2,R3,R4,R5,R21,R22, R23,R24,R25,R41,R45,R46, R47,R59,R105,R108,R109, R118,R119	1K
34	15	R6,R7,R8,R9,R10,R26,R27, R28,R29,R30,R42,R54,R55, R60,R68	100R
35	13	R11,R12,R13,R14,R15,R31, R32,R33,R34,R35,R43,R71, R75	100K
36	33	R16,R17,R18,R19,R20,R36, R37,R38,R39,R40,R44,R106, R107,R112,R113,R120,R124, R128,R134,R140,R144,R150, R156,R160,R165,R174,R177, R179,R181,R185,R190,R212, R214	2K2
37	64	R48,R49,R56,R57,R58,R62, R64,R66,R67,R70,R74,R76, R77,R79,R80,R83,R84,R87, R89,R90,R92,R96,R97,R99, R100,R102,R103,R104,R162, R164,R166,R170,R171,R172, R173,R175,R176,R178,R180, R182,R186,R188,R192,R194, R197,R199,R201,R202,R203, R204,R205,R206,R207,R208, R209,R210,R213,R215,R216, R219,R220,R227,R228,R230	10K
38	1	R52	25K5
39	4	R53,R65,R81,R82	20K
40	10	R61,R167,R168,R169,R191, R193,R195,R196,R198,R200	4K7
41	1	R63	39K
42	1	R69	59K
43	1	R78	2K7
44	1	R85	3K62
45	1	R95	16K9
46	1	R98	33K2
47	3	R101,R211,R217	1M
48	15	R110,R111,R114,R115,R121, R125,R131,R135,R141,R147, R151,R157,R221,R223,R226	47K
49	24	R116,R117,R122,R126,R129, R130,R132,R133,R136,R137, R138,R139,R142,R143,R145, R146,R148,R149,R152,R153, R154,R155,R158,R159	22R
50	1	R161	10M
51	2	R163,R229	330K
52	2	R183,R187	X2K2
53	1	R218	10R
54	2	R222,R224	10K5
55	1	R225	12K
56	1	TP1	3.3V
57	12	TR1,TR2,TR3,TR4,TR5,TR6, TR7,TR8,TR9,TR10,TR11, TR13	87W-20K
58	1	TR12	87W-10K
59	3	U1,U2,U3	LM324
60	1	U4	LM78M05CDT
61	4	U5,U6,U7,U8	TL074
62	3	U10,U12,U14	40106
63	2	U11,U13	ULN2004A
64	1	U15	MC68HC908GP32-QFP
65	1	U16	74HC273
66	1	U17	74HC574
67	1	U18	TLV5625
68	1	U19	74HC244
69	1	U20	SN75176AP
70	1	U21	74HC4053
71	1	U22	74HC139
72	1	U23	25C080
73	1	Y1	32.768 KHz

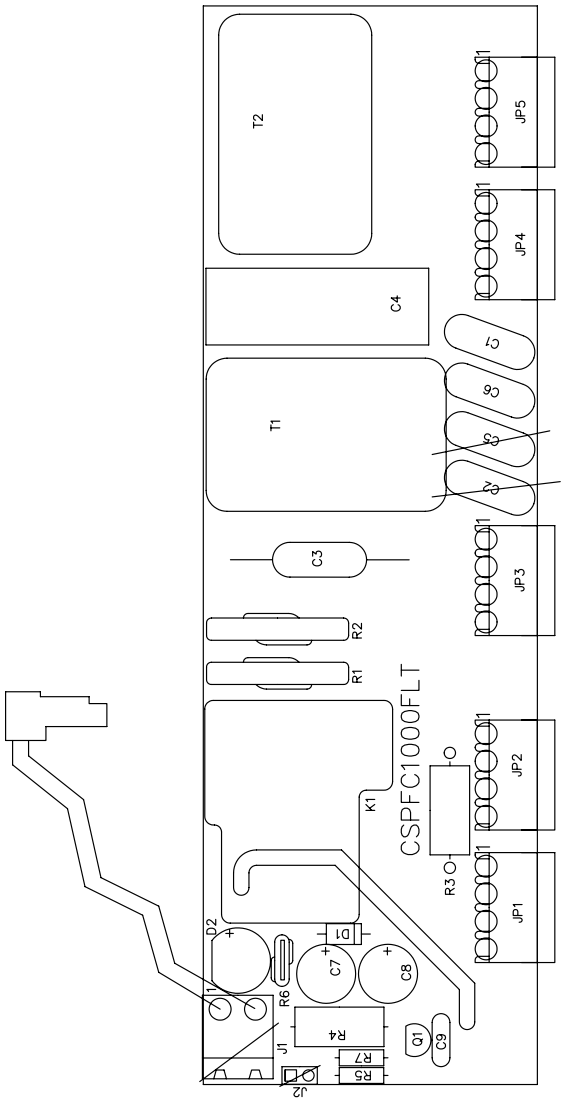
6.2.10.1 Settings

In the PJ10KPS-CA are present microcontrol boards, one for each 2.2 kW module, one for the control of the power supply and one for the control of the combiner. The boards are identical, but in each the trimmers have diverged meaning. In figure, “RFM” refers to the RF module, “PS” to the power supply and “CMB” to the combiner. TR12 is set so that VREF is 3.3 V.

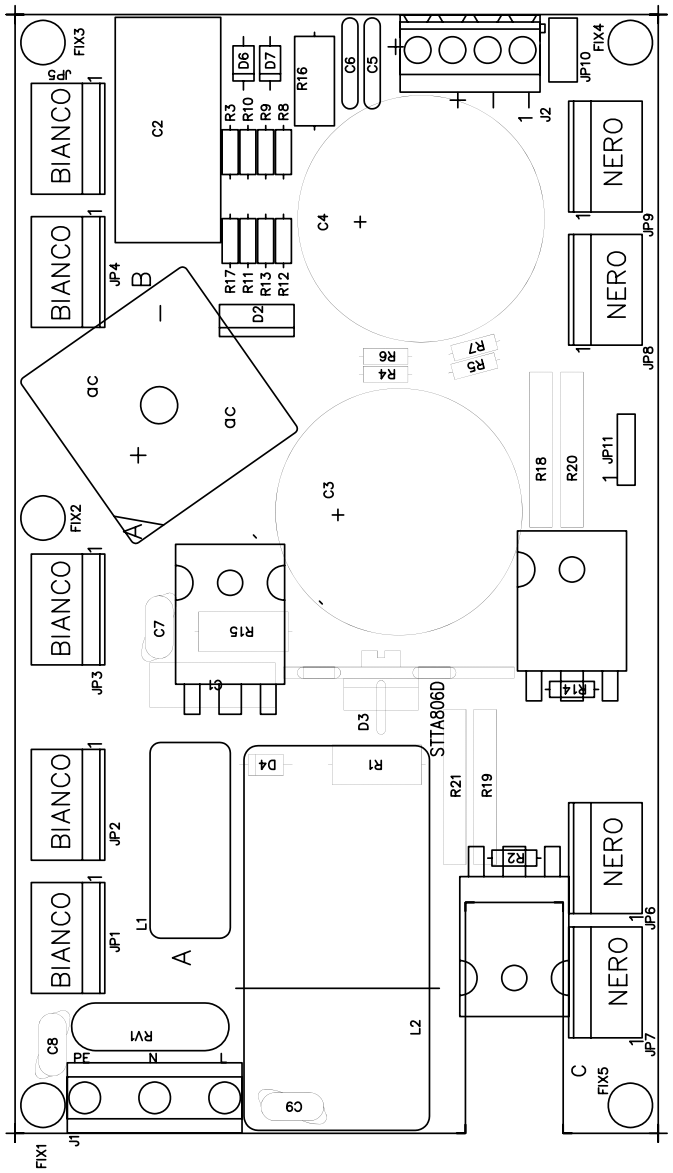


6.2.11 PFC (KPFC154)

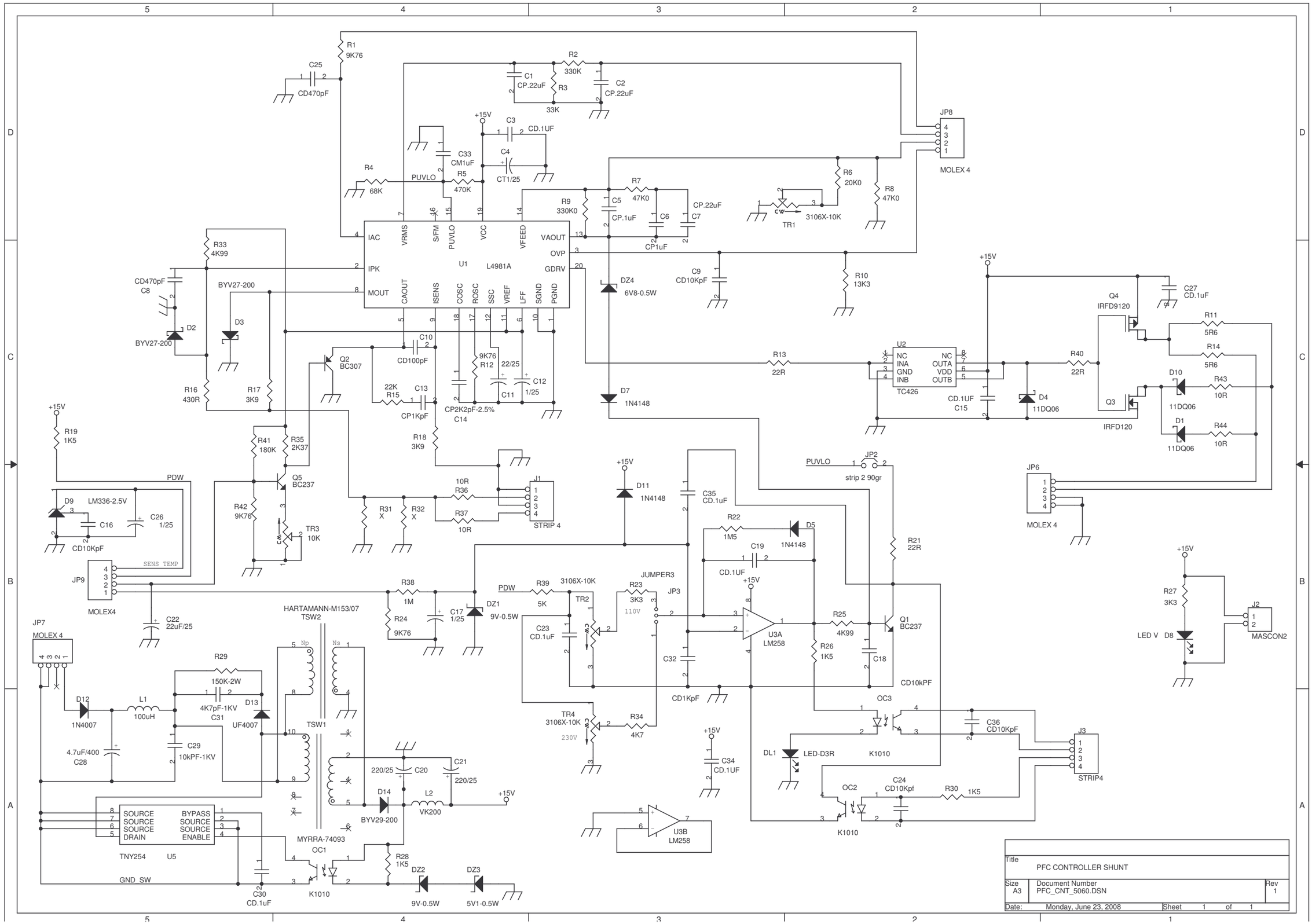


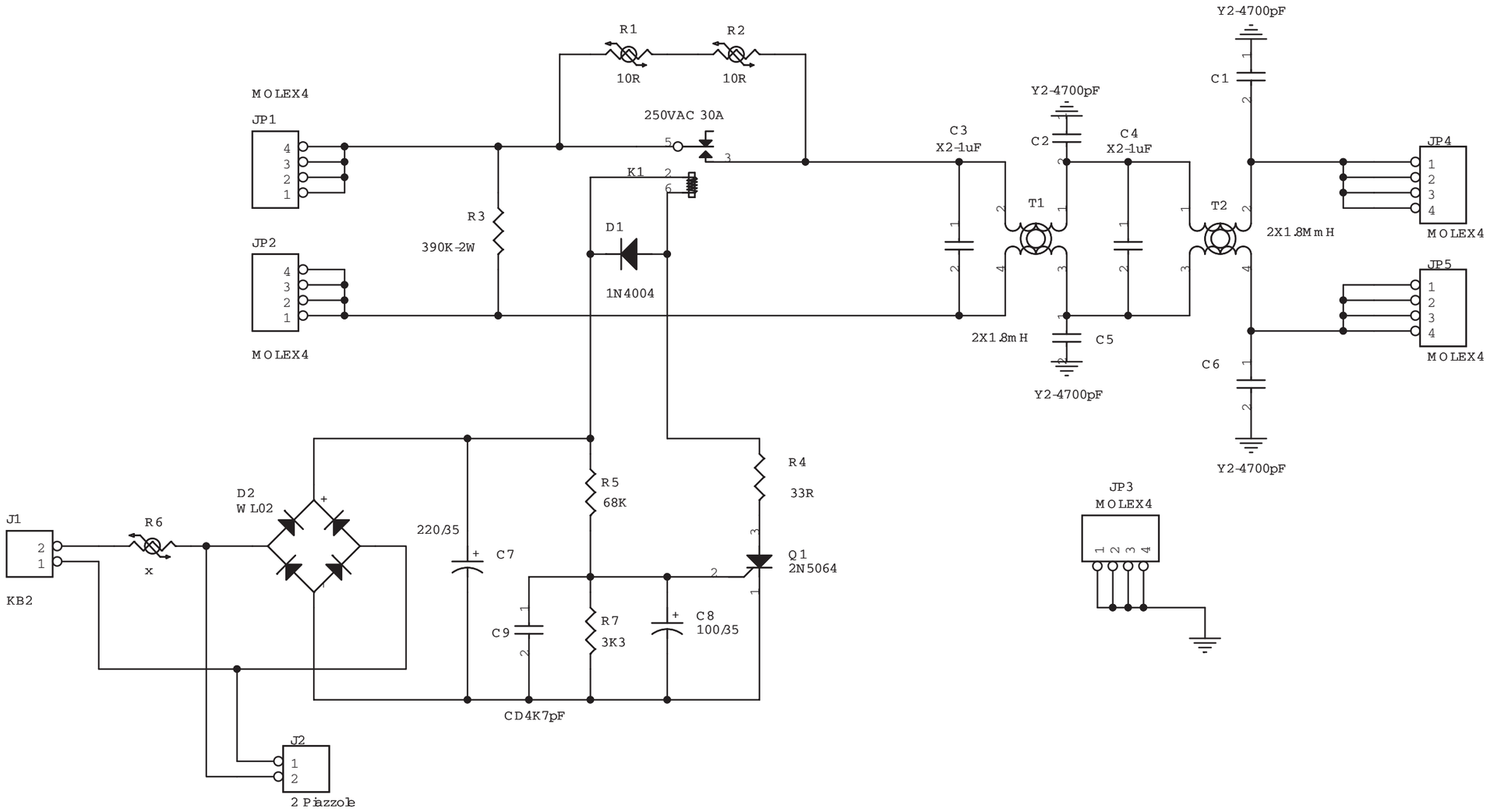


Nome Progetto: TEX1000		Pagina: 1 di 1	Size: A4
Autore: Ufficio Tecnico	Data: 09/09/03	Codice Progetto: 010	
Nome PC in Rete: \\UT_SRV\PROGETTI	Revisione: 1.1	Nome Parte: SOFT START E FILTRO EMI	
File/Cartella: MANUALI\TEX1000\PFCPSL1000\FLT1000PFC.dwg	Autorizzazione:	Codice: PFCPSL1000	
Scala: / Materiale: /	Trattamento: /	Profilo: /	

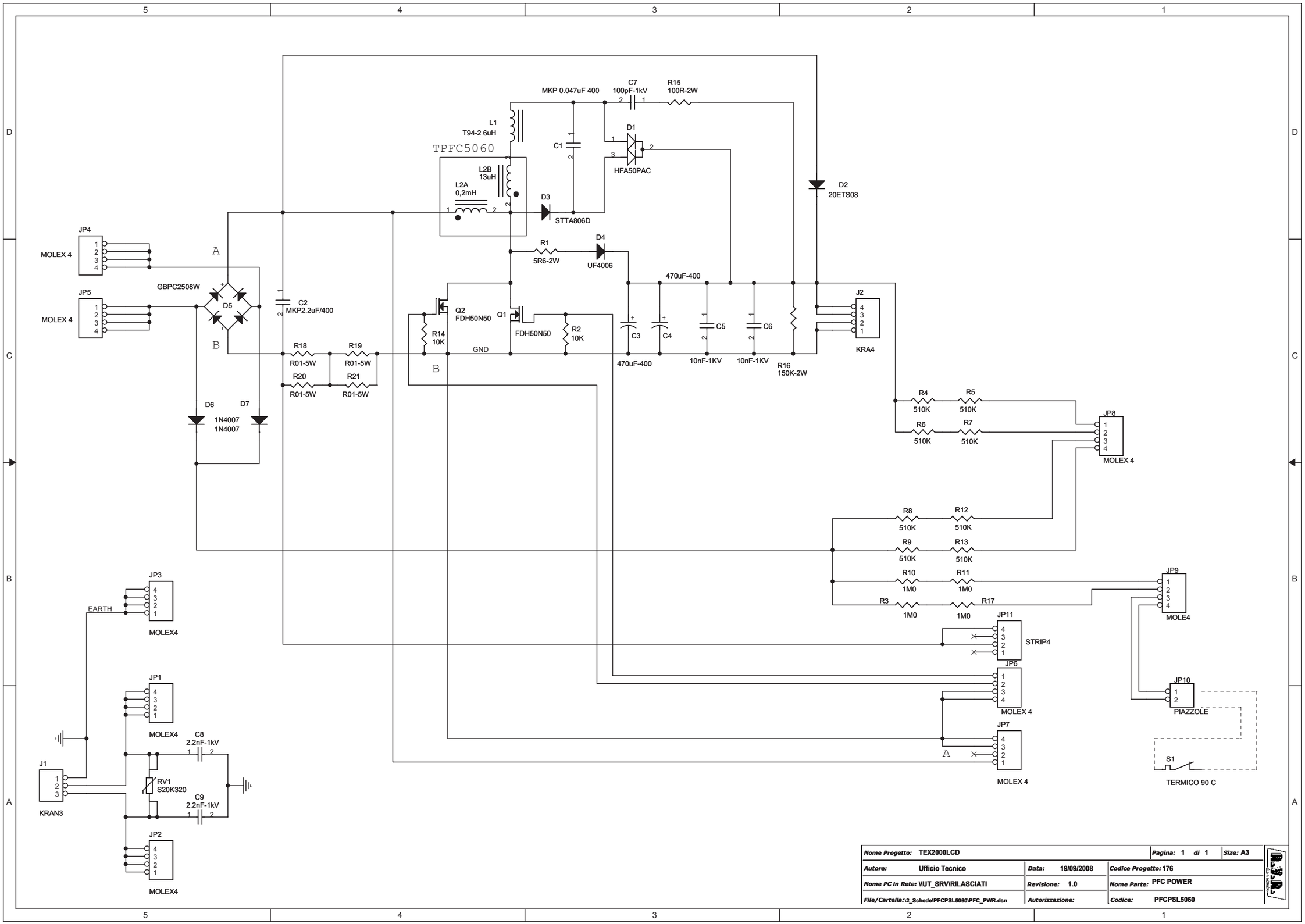


Nome Progetto: TEX2000LCD		Pagina: 1 di 1	Size: A4
Autore: Ufficio Tecnico	Data: 23/06/2008	Codice Progetto: 176	
Nome PC in Rete: \\UT_SRV\PROGETTI	Revisione: 1.0	Nome Parte: PFC POWER COMPONENT LAYOUT	
File/Cartella: \2_Schede\PFCPSL5060\PFC1000PW_5060.dwg	Autorizzazione:	Codice: PFCPSL5060	
Scala: / Materiale: /	Trattamento: /	Profilo: /	


R1 9K76
C25 CD470pF
R2 330K
C1 CP.22uF
R3 33K
C2 CP.22uF
+15V
C3 CD.1UF
C4 CT1/25
C33 CM1uF
R4 68K
PUVLO
R5 470K
JP8
MOLEX 4
R6 20K0
R8 47K0
R7 47K0
C5 CP.1uF
C6 CP1uF
C7 CP.22uF
R9 330K0
TR1 3106X-10K
U1 L4981A
IAC
IPK
MOUT
VRMS
S/FM
PUVLO
VCC
VFEED
VAOUT
OVP
GDRV
CAOUT
ISENS
COSC
ROSC
SSC
VREF
LFF
SGND
PGND
R33 4K99
CD470pF C8
BYV27-200
D2 BYV27-200
D3
R16 430R
R17 3K9
C10 CD100pF
22K R15
C13 CP1KpF
9K76 R12
22/25 C11
C12 1/25
CP2K2pF-2.5% C14
R18 3K9
DZ4 6V8-0.5W
C9 CD10KpF
R10 13K3
D7 1N4148
R13 22R
U2 TC426
NC INA GND INB NC OUTA VDD OUTB
CD.1UF C15
D4 11DQ06
R40 22R
Q4 IRFD9120
C27 CD.1uF
R11 5R6
R14 5R6
D10 11DQ06
R43 10R
Q3 IRFD120
D1 11DQ06
R44 10R
Q2 BC307
+15V
R19 1K5
PDW
R41 180K
R35 2K37
Q5 BC237
R42 9K76
TR3 10K
R31 X
R32 X
10R R36
10R R37
J1 STRIP 4
D11 1N4148
C35 CD.1uF
PUVLO
JP2 strip 2 90gr
JP6
MOLEX 4
R22 1M5
D5 1N4148
C19 CD.1UF
R21 22R
D9 LM336-2.5V
C16
C26 1/25
CD10KpF
JP9 MOLEX4
SENS TEMP
C22 22uF/25
R38 1M
R24 9K76
C17 1/25
DZ1 9V-0.5W
PDW
R39 5K
3106X-10K
TR2
JUMPER3
JP3
R23 3K3
110V
C23 CD.1uF
C32
U3A LM258
R25 4K99
R26 1K5
C18
Q1 BC237
CD1KpF
CD10kPF
R27 3K3
LED V D8
J2 MASCON2
JP7 MOLEX 4
HARTAMANN-M153/07
TSW2
TSW1
Np
Ns
R29 150K-2W
4K7pF-1KV C31
D13 UF4007
D12 1N4007
L1 100uH
4.7uF/400 C28
C29 10kPF-1KV
TR4 3106X-10K
230V
R34 4K7
OC3
C36 CD10KpF
DL1 LED-D3R
K1010
J3 STRIP4
C24 CD10Kpf
R30 1K5
OC2
K1010
220/25 C20
C21 220/25
D14 BYV29-200
L2 VK200
SOURCE SOURCE SOURCE DRAIN
BYPASS SOURCE SOURCE ENABLE
TNY254 U5
MYRRA-74093
OC1
R28 1K5
DZ2 9V-0.5W
DZ3 5V1-0.5W
C30 CD.1uF
K1010
GND_SW
U3B LM258
Title PFC CONTROLLER SHUNT
Size A3
Document Number PFC_CNT_5060.DSN
Rev 1
Date: Monday, June 23, 2008
Sheet 1 of 1



Nome Progetto: **TEX1000**			Pagina: **1** di **1** Size: **A4**
Autore: **Ufficio Tecnico**	Data: **09/09/03**	Codice Progetto: **010**	
Nome PC in Rete: **\\UT_SRV\PROGETTI**	Revisione: **1.1**	Nome Parte: **SOFT SART E FILTRO EMI**	
File/Cartella **MANUALI\TEX1000\PFCPSL1000\PFC_FLT.dsn**	Autorizzazione:	Codice: **PFCPSL1000**	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C7
100pF-1kV
R15
100R-2W
L1
T94-2 6uH
TPFC5060
C1
D1
HFA50PAC
L2B
13uH
L2A
0,2mH
D3
STTA806D
D2
20ETS08
JP4
MOLEX 4
A
R1
5R6-2W
D4
UF4006
470uF-400
JP5
MOLEX 4
GBPC2508W
D5
C2
MKP2.2uF/400
Q2
FDH50N50
Q1
FDH50N50
R14
10K
R2
10K
GND
B
C3
C4
C5
C6
10nF-1KV
10nF-1KV
R16
150K-2W
J2
KRA4
R18
R01-5W
R19
R01-5W
R20
R01-5W
R21
R01-5W
D6
D7
1N4007
1N4007
R4
510K
R5
510K
R6
510K
R7
510K
JP8
MOLEX 4
R8
510K
R12
510K
R9
510K
R13
510K
R10
1M0
R11
1M0
R3
1M0
R17
1M0
JP9
MOLE4
JP3
EARTH
MOLEX4
JP11
STRIP4
JP6
MOLEX 4
JP10
PIAZZOLE
JP1
MOLEX4
C8
2.2nF-1kV
J1
KRAN3
RV1
S20K320
C9
2.2nF-1kV
JP7
MOLEX 4
S1
TERMICO 90 C
JP2
MOLEX4
Nome Progetto: TEX2000LCD
Pagina: 1 di 1
Size: A3
Autore: Ufficio Tecnico
Data: 19/09/2008
Codice Progetto: 176
Nome PC in Rete: \\UT_SRV\RILASCIATI
Revisione: 1.0
Nome Parte: PFC POWER
File/Cartella: \2_Schede\PFCPSL5060\PFC_PWR.dsn
Autorizzazione:
Codice: PFCPSL5060

PFC CONTROLLER Revised:Tuesday,September16,2003
PFCPSL1000 Revision:1.1
TEX1000

Item	Quantity	Reference	Part
1	3	C1,C2,C7	CP.22uF
2	7	C3,C15,C19,C23,C27,C30,C34	CD.1uF
3	1	C4	CT1/25
4	1	C5	CP.1uF
5	1	C6	CP1uF
6	2	C8,C13	CP1KpF
7	4	C9,C16,C18,C24	CD10Kpf
8	1	C10	CD100pF
9	1	C11	22/25
10	3	C12,C17,C26	gen-25
11	1	C14	CP2K2pF-2.5%
12	2	C21,C20	220/25
13	1	C22	22uF/25
14	1	C25	CD470pF
15	1	C28	4.7uF/400
16	1	C29	10kPF-1KV
17	1	C31	4K7pF-1KV
18	2	C33,C32	CD1KpF
19	1	DL1	LED-D3R
20	2	DZ1,DZ2	9V-0.5W
21	1	DZ3	5V1-0.5W
22	5	D1,D2,D3,D4,D10	11DQ06
23	2	D6,D5	1N4148
24	1	D8	LED V
25	1	D9	LM336-2.5V
26	1	D12	1N4007
27	1	D13	UF4007
28	1	D14	BYV29-200
29	1	JP2	strip 2 90gr
30	1	JP3	JUMPER3
31	1	JP4	STRIP 90
32	3	JP6,JP7,JP8	MOLEX 4
33	1	JP9	MOLEX4
34	1	J1	STRIP 4
35	1	J2	MASCON2
36	1	J3	STRIP 3
37	1	L1	100uH
38	1	L2	VK200
39	2	OC2,OC1	K1010
40	2	Q1,Q5	BC237
41	1	Q2	BC307
42	1	Q3	IRFD120
43	1	Q4	IRFD9120
44	4	R1,R12,R24,R42	9K76
45	1	R2	330K
46	1	R3	33K
47	1	R4	68K
48	1	R5	470K
49	1	R6	20K0

Item	Quantity	Reference	Part
50	2	R8,R7	47K0
51	1	R9	330K0
52	1	R10	13K3
53	3	R11,R14,R32	1R5
54	3	R13,R21,R40	22R
55	1	R15	100K
56	3	R16,R25,R33	4K99
57	3	R17,R18,R35	2K37
58	4	R19,R26,R28,R30	1K5
59	1	R22	1M5
60	2	R23,R27	3K3
61	1	R29	150K-2W
62	1	R31	2R7
63	1	R34	4K7
64	2	R36,R37	1R0
65	1	R38	1M
66	1	R39	5K
67	1	R41	180K
68	2	R43,R44	10R
69	3	TR1,TR2,TR4	3106X-10K
70	1	TR3	10K
71	1	TSW1	MYRRA-74093
72	1	U1	L4981A
73	1	U2	TC426
74	1	U3	LM258
75	1	U5	TNY254

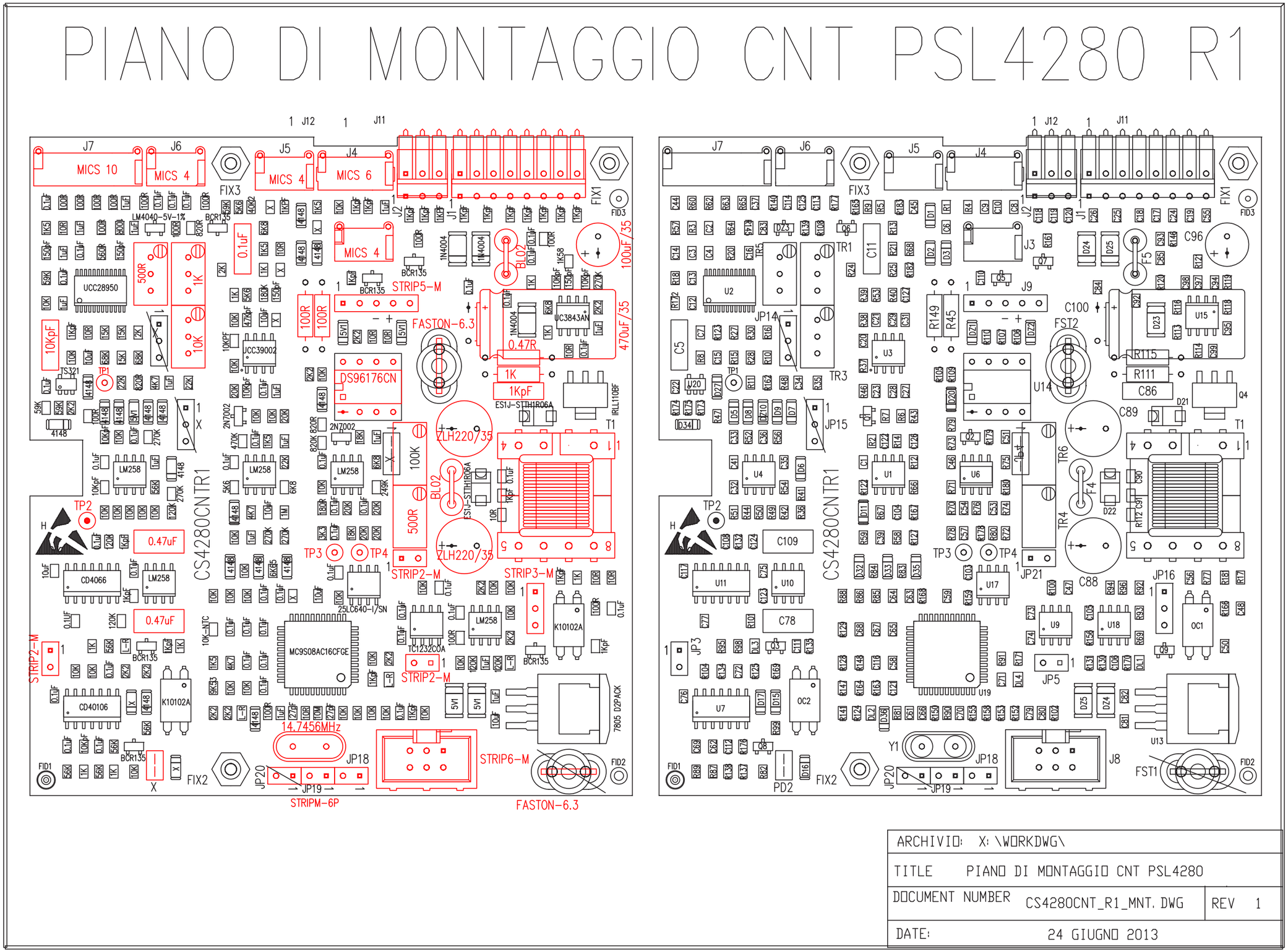
SOFT SART E FILTRO EMI Revised:Tuesday,September16,2003
PFCPSL1000 Revision:1.1
TEX1000

Item	Quantity	Reference	Part
1	4	C1,C2,C5,C6	Y2-4700pF
2	2	C4,C3	X2-1uF
3	1	C7	220/35
4	1	C8	100/35
5	1	C9	CD4K7pF
6	1	D1	1N4004
7	1	D2	W L02
8	5	JP1,JP2,JP3,JP4,JP5	MOLEX4
9	1	J1	KB2
10	1	J2	2 Piazzole
11	1	K1	250VAC 30A
12	1	Q1	2N5064
13	2	R2,R1	10R
14	1	R3	390K-2W
15	1	R4	33R
16	1	R5	68K
17	1	R6	x
18	1	R7	3K3
19	1	T1	2X1.8mH
20	1	T2	2X1.8MmH

PFC POWER Revised: Monday, October 06, 2008
PFCPSL5060 Revision: 1.0
TEX2000LCD
176
Ufficio Tecnico

Item	Quantity	Reference	Part
1	1	C1	MKP 0.047uF 400
2	1	C2	MKP2.2uF/400
3	2	C3, C4	470uF-400
4	2	C5, C6	10nF-1KV
5	1	C7	100pF-1kV
6	2	C8, C9	2.2nF-1kV
7	1	D1	HFA50PAC
8	1	D2	20ETS08
9	1	D3	STTA806D
10	1	D4	UF4006
11	1	D5	GBPC2508W
12	2	D6, D7	1N4007
13	3	JP1, JP2, JP3	MOLEX4
14	5	JP4, JP5, JP6, JP7, JP8	MOLEX 4
15	1	JP9	MOLE4
16	1	JP10	PIAZZOLE
17	1	JP11	STRIP4
18	1	J1	KRAN3
19	1	J2	KRA4
20	1	L1	T94-2 6uH
21	1	L2	0,2mH
22	2	Q1, Q2	FDH50N50
23	1	RV1	S20K320
24	1	R1	5R6-2W
25	2	R2, R14	10K
26	4	R3, R10, R11, R17	1M0
27	8	R4, R5, R6, R7, R8, R9, R12, R13	510K
28	1	R15	100R-2W
29	1	R16	150K-2W
30	4	R18, R19, R20, R21	R01-5W
31	1	S1	TERMICO 90 C

6.2.12 Power supply (PSL4280)



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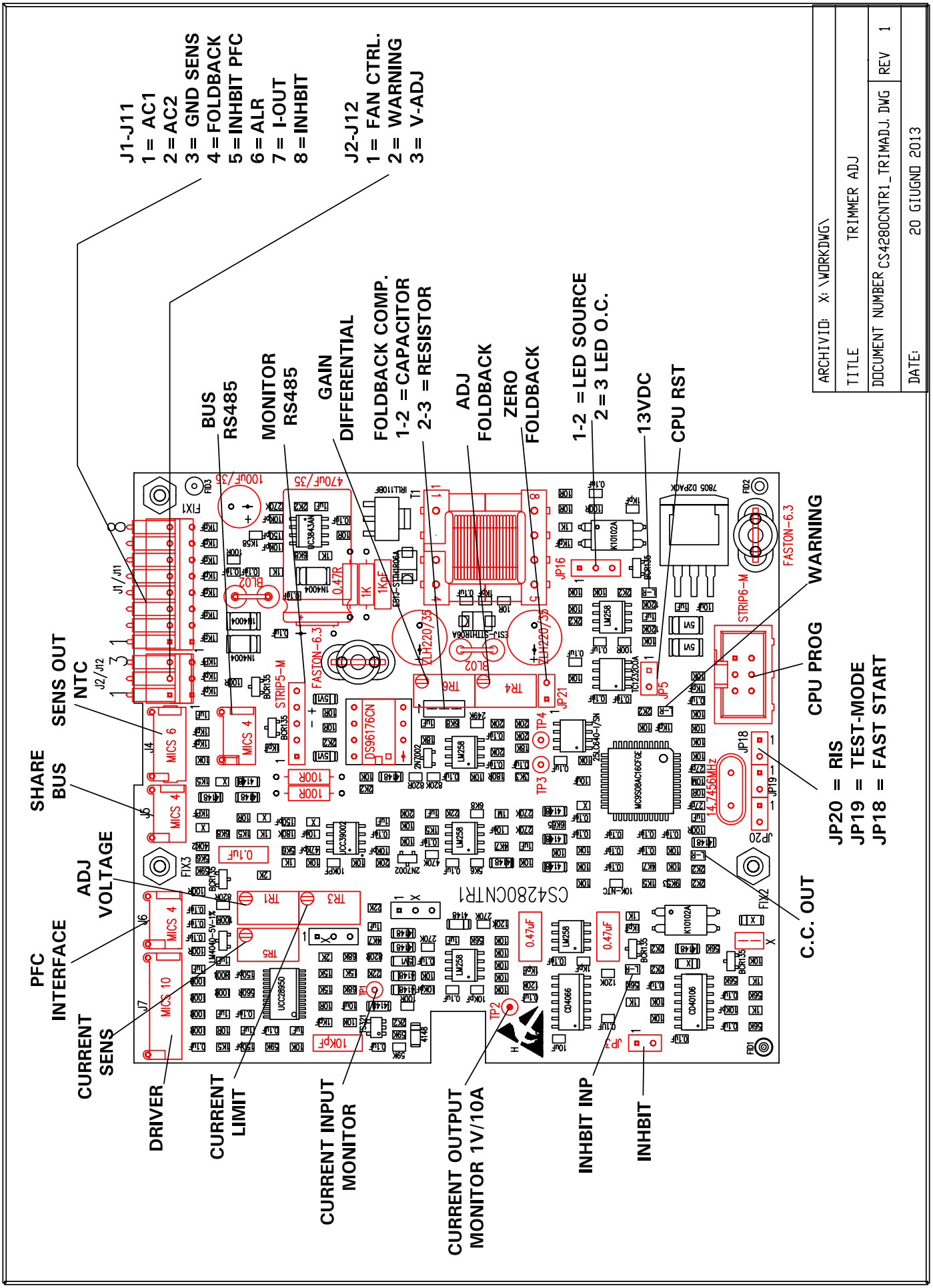
DOCUMENT NUMBER	CS4280CNT_R1_MNT.DWG — REV 1
DATE:	24 GIUGNO 2013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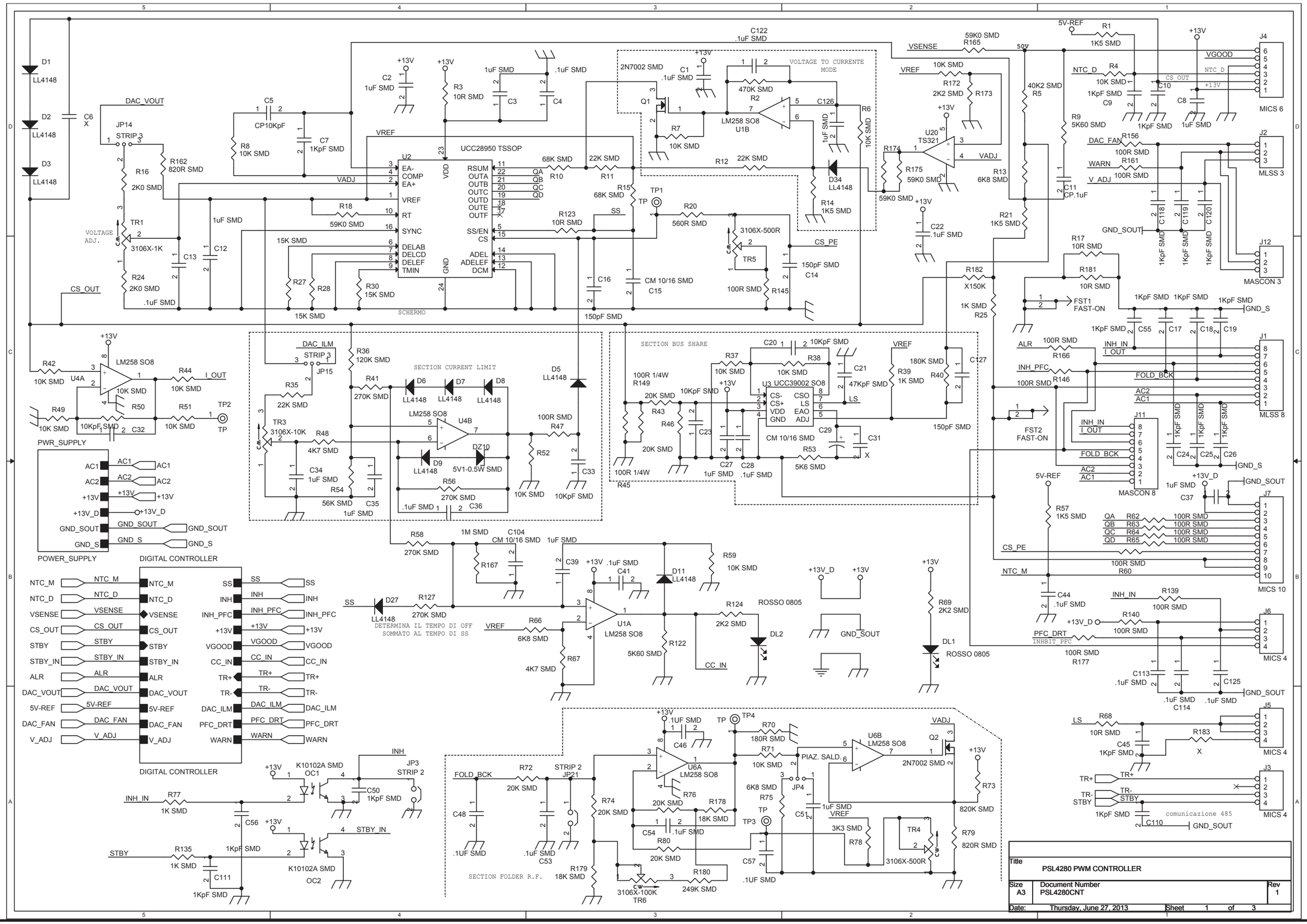
1 = AC1
2 = AC2
3 = GND SENS
4 = FOLDBACK
5 = INHBIT PFC
6 = ALR
7 = I-OUT
8 = INHBIT
J2-J12
1 = FAN CTRL.
2 = WARNING
3 = V-ADJ
BUS RS485
MONITOR RS485
GAIN DIFFERENTIAL
FOLDBACK COMP.
1-2 = CAPACITOR
2-3 = RESISTOR
ADJ FOLDBACK ZERO FOLDBACK
1-2 = LED SOURCE
2 = 3 LED O.C.
13VDC
CPU RST
SENS OUT NTC
SHARE BUS
ADJ VOLTAGE
PFC INTERFACE
CURRENT SENS
DRIVER
CURRENT LIMIT
CURRENT INPUT MONITOR
CURRENT OUTPUT MONITOR 1V/10A
INHBIT INP
INHBIT
C.C. OUT
CPU PROG
WARNING
JP20 = RIS
JP19 = TEST-MODE
JP18 = FAST START
CS4280CNTR1
ARCHIVIO: X:\WORKDWG\
TITLE TRIMMER ADJ
DOCUMENT NUMBER CS4280CNTR1_TRIMADJ.DWG REV 1
DATE: 20 GIUGNO 2013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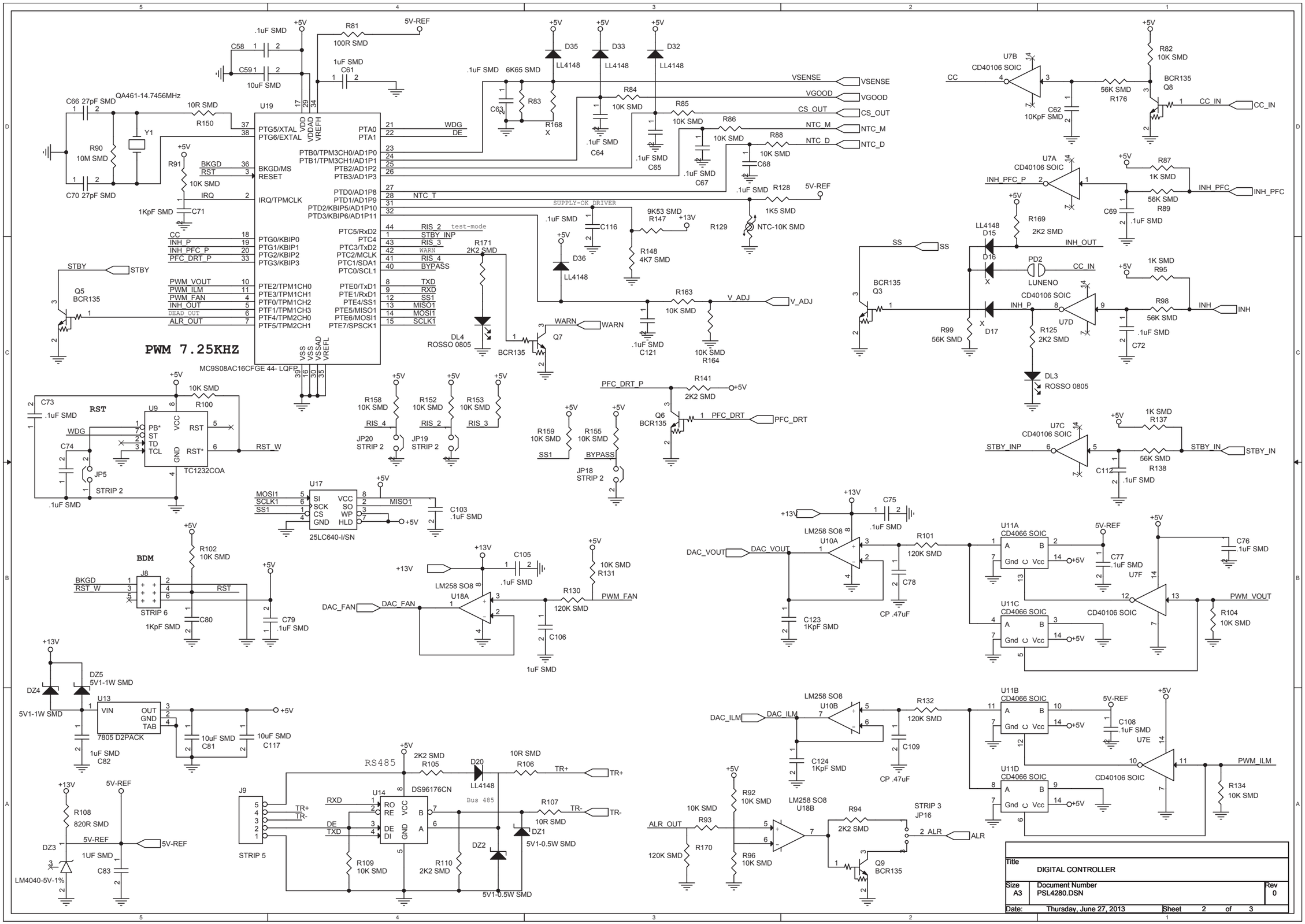
LM258 SO8
U1A
U1B
U3 UCC39002 SO8
U4A
U6A
U6B
TS321
U20
2N7002 SMD
VOLTAGE TO CURRENTE MODE
SECTION CURRENT LIMIT
SECTION BUS SHARE
SECTION FOLDER R.F.
SCHERMO
DETERMINA IL TEMPO DI OFF SOMMATO AL TEMPO DI SS
VOLTAGE ADJ.
PWR_SUPPLY
POWER_SUPPLY
DIGITAL CONTROLLER
DIGITAL CONTROLLER
MICS 6
MICS 10
MICS 4
MICS 4
MICS 4
MLSS 3
MLSS 8
MASCON 3
MASCON 8
FST1 FAST-ON
FST2 FAST-ON
K10102A SMD
3106X-1K
3106X-10K
3106X-500R
3106X-100K
LL4148
ROSSO 0805
comunicazione 485
PSL4280 PWM CONTROLLER
PSL4280CNT
Thursday, June 27, 2013
Sheet 1 of 3
Rev 1


U19
MC9S08AC16CFGE 44- LQFP
PWM 7.25KHZ
QA461-14.7456MHz
Y1
C66 27pF SMD
C70 27pF SMD
R90 10M SMD
R150 10R SMD
R91 10K SMD
C71 1KpF SMD
C58 .1uF SMD
C59 10uF SMD
R81 100R SMD
C61 1uF SMD
5V-REF
+5V
+13V
BKGD
RST
IRQ
PTG5/XTAL
PTG6/EXTAL
PTA0
PTA1
PTB0/TPM3CH0/AD1P0
PTB1/TPM3CH1/AD1P1
PTB2/AD1P2
PTB3/AD1P3
PTD0/AD1P8
PTD1/AD1P9
PTD2/KBIP5/AD1P10
PTD3/KBIP6/AD1P11
PTC5/RxD2
PTC4
PTC3/TxD2
PTC2/MCLK
PTC1/SDA1
PTC0/SCL1
PTE2/TPM1CH0
PTE3/TPM1CH1
PTF0/TPM1CH2
PTF1/TPM1CH3
PTF4/TPM2CH0
PTF5/TPM2CH1
PTE0/TxD1
PTE1/RxD1
PTE4/SS1
PTE5/MISO1
PTE6/MOSI1
PTE7/SPSCK1
WDG
DE
NTC_T
RIS_2 test-mode
STBY_INP
RIS_3
WARN
RIS_4
BYPASS
TXD
RXD
SS1
MISO1
MOSI1
SCLK1
CC
INH_P
INH_PFC_P
PFC_DRT_P
PWM_VOUT
PWM_ILM
PWM_FAN
INH_OUT
DEAD_OUT
ALR_OUT
STBY
Q5 BCR135
R171 2K2 SMD
DL4 ROSSO 0805
Q7 BCR135
WARN
D35 LL4148
D33 LL4148
D32 LL4148
D36 LL4148
.1uF SMD 6K65 SMD
C63
R83
R168 X
R84 10K SMD
R85 10K SMD
R86 10K SMD
R88 10K SMD
C64
C65
C67
C68
VSENSE
VGOOD
CS_OUT
NTC_M
NTC_D
R128 5V-REF
1K5 SMD
NTC-10K SMD
R129
SUPPLY-OK DRIVER
C116
9K53 SMD
R147
R148 4K7 SMD
R163 10K SMD
V_ADJ
C121
R164 10K SMD
U7B CD40106 SOIC
R82 10K SMD
BCR135 Q8
56K SMD R176
C62 10KpF SMD
CC_IN
U7A CD40106 SOIC
R87 1K SMD
56K SMD R89
C69 .1uF SMD
INH_PFC
R169 2K2 SMD
LL4148 D15
D16
PD2 LUNENO
INH_OUT
SS
BCR135 Q3
R99 56K SMD
D17
R125 2K2 SMD
DL3 ROSSO 0805
U7D CD40106 SOIC
R95 1K SMD
R98 56K SMD
C72 .1uF SMD
INH
U7C CD40106 SOIC
R137 1K SMD
56K SMD R138
C112 .1uF SMD
STBY_IN
RST
R100 10K SMD
C73 .1uF SMD
C74
JP5 STRIP 2
TC1232COA
RST_W
R158 10K SMD
R152 10K SMD
R153 10K SMD
JP20 STRIP 2
JP19 STRIP 2
R159 10K SMD
R155 10K SMD
JP18 STRIP 2
PFC_DRT
R141 2K2 SMD
Q6 BCR135
U17
25LC640-I/SN
C103 .1uF SMD
R102 10K SMD
BDM
J8
STRIP 6
C80 1KpF SMD
C79 .1uF SMD
C105 .1uF SMD
LM258 SO8
U18A
DAC_FAN
R130 120K SMD
10K SMD R131
PWM_FAN
C106 1uF SMD
DAC_VOUT
U10A
R101 120K SMD
C78 CP .47uF
C123 1KpF SMD
U11A CD4066 SOIC
U11C CD4066 SOIC
5V-REF
C77 .1uF SMD
U7F
C76 .1uF SMD
CD40106 SOIC
R104 10K SMD
DZ4 5V1-1W SMD
DZ5 5V1-1W SMD
U13
7805 D2PACK
C82 1uF SMD
C81 10uF SMD
C117 10uF SMD
R108 820R SMD
DZ3
LM4040-5V-1%
C83 1UF SMD
RS485
2K2 SMD R105
D20 LL4148
10R SMD R106
TR+
TR-
J9
STRIP 5
U14
DS96176CN
Bus 485
R107 10R SMD
DZ1 5V1-0.5W SMD
DZ2
R109 10K SMD
R110 2K2 SMD
5V1-0.5W SMD
DAC_ILM
U10B
R132 120K SMD
C124 1KpF SMD
C109 CP .47uF
U11B CD4066 SOIC
U11D CD4066 SOIC
C108 .1uF SMD
U7E
R134 10K SMD
PWM_ILM
ALR_OUT
R93 10K SMD
R170 120K SMD
U18B
R92 10K SMD
R96 10K SMD
R94 2K2 SMD
STRIP 3 JP16
2_ALR
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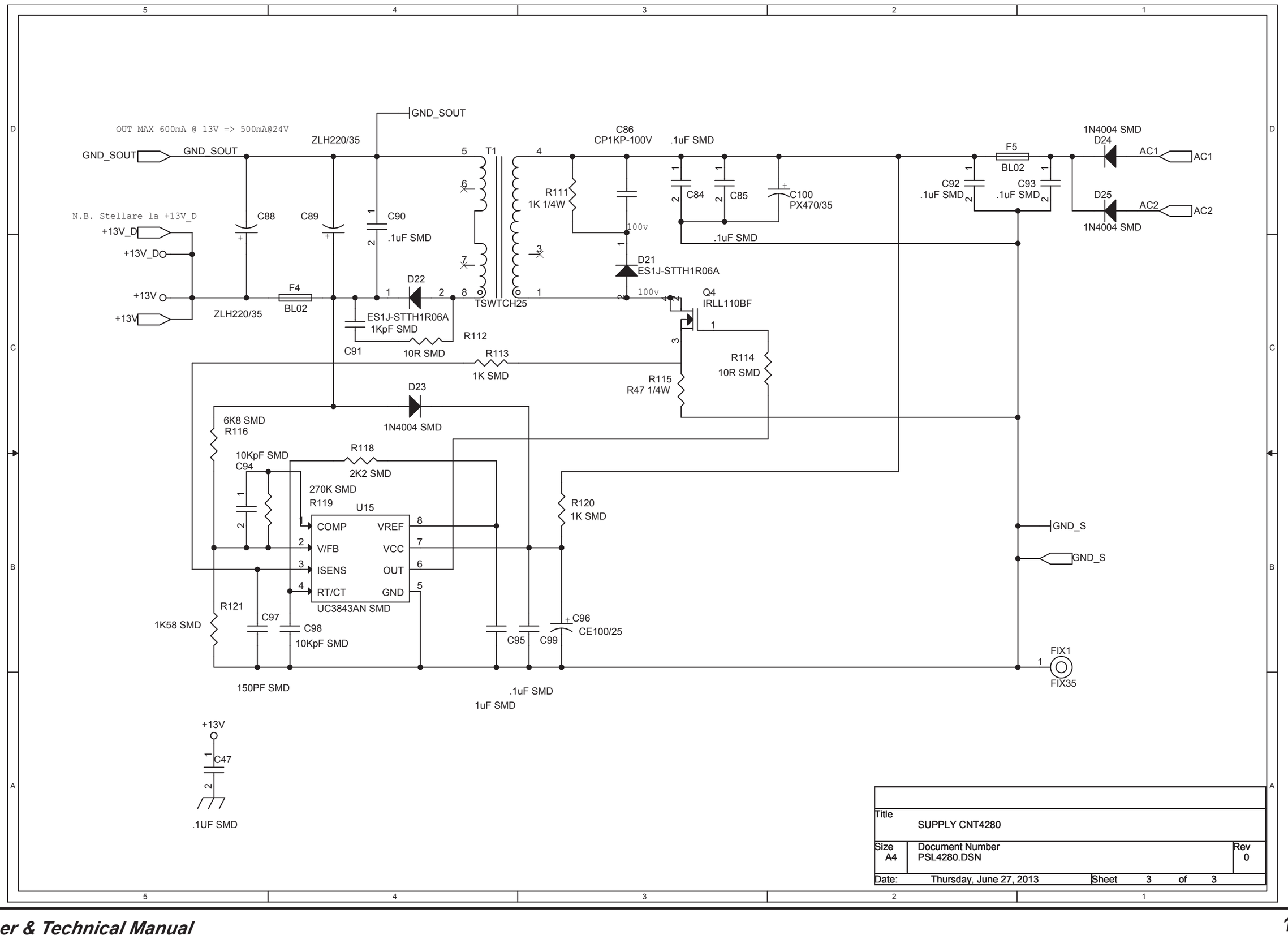
Size A3
Document Number PSL4280.DSN
Rev 0
Date: Thursday, June 27, 2013
Sheet 2 of 3


OUT MAX 600mA @ 13V => 500mA@24V
GND_SOUT
GND_SOUT
ZLH220/35
T1
C86
CP1KP-100V
.1uF SMD
1N4004 SMD
D24
AC1
AC1
F5
BL02
C92
.1uF SMD
C93
.1uF SMD
D25
AC2
AC2
1N4004 SMD
N.B. Stellare la +13V_D
+13V_D
+13V_D
C88
C89
C90
.1uF SMD
R111
1K 1/4W
C84
C85
C100
PX470/35
100v
.1uF SMD
D21
ES1J-STTH1R06A
+13V
+13V
ZLH220/35
F4
BL02
D22
TSWTCH25
100v
Q4
IRLL110BF
ES1J-STTH1R06A
1KpF SMD
C91
R112
10R SMD
R113
1K SMD
R114
10R SMD
R115
R47 1/4W
D23
1N4004 SMD
6K8 SMD
R116
10KpF SMD
C94
R118
2K2 SMD
270K SMD
R119
U15
COMP
V/FB
ISENS
RT/CT
VREF
VCC
OUT
GND
UC3843AN SMD
R120
1K SMD
GND_S
GND_S
R121
1K58 SMD
C97
C98
10KpF SMD
C95
C99
C96
CE100/25
FIX1
FIX35
150PF SMD
.1uF SMD
1uF SMD
+13V
C47
.1UF SMD
Title
SUPPLY CNT4280
Size
A4
Document Number
PSL4280.DSN
Rev
0
Date:
Thursday, June 27, 2013
Sheet
3
of
3

PSL4280 PWM CONTROLLER Revised:
Friday, May 24, 2013
PSL4280CNT Revision: 1

Bill Of Materials June
27,2013 7:57:03 Page1

Item	Quantity	Reference	Part
1	44	C1	.1uF SMD
		C4	.1uF SMD
		C13	.1uF SMD
		C22	.1uF SMD
		C28	.1uF SMD
		C36	.1uF SMD
		C41	.1uF SMD
		C44	.1uF SMD
		C46	.1UF SMD
		C47	.1UF SMD
		C48	.1UF SMD
		C53	.1uF SMD
		C54	.1uF SMD
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		C58	.1uF SMD
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		C93	.1uF SMD
		C99	.1uF SMD
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		C105	.1uF SMD
		C108	.1uF SMD
		C112	.1uF SMD
		C113	.1uF SMD
		C114	.1uF SMD
		C116	.1uF SMD
		C121	.1uF SMD
		C122	.1uF SMD
		C125	.1uF SMD
2	16	C2	1uF SMD
		C3	1uF SMD
		C8	1uF SMD
		C12	1uF SMD
		C27	1uF SMD
		C34	1uF SMD
		C35	1uF SMD
		C37	1uF SMD
		C39	1uF SMD
		C51	1uF SMD
		C61	1uF SMD
		C82	1uF SMD
		C83	1UF SMD
		C95	1uF SMD
		C106	1uF SMD
		C126	1uF SMD
3	1	C5	CP10KpF
4	6	C6	X
		D16	X
		D17	X
		C31	X
		R168	X
		R183	X
5	23	C7	1KpF SMD
		C9	1KpF SMD
		C10	1KpF SMD
		C17	1KpF SMD
		C18	1KpF SMD
		C19	1KpF SMD
		C24	1KpF SMD
		C25	1KpF SMD
		C26	1KpF SMD
		C45	1KpF SMD
		C50	1KpF SMD
		C55	1KpF SMD
		C56	1KpF SMD
		C71	1KpF SMD
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		C91	1KpF SMD
		C110	1KpF SMD
		C111	1KpF SMD
		C118	1KpF SMD
		C119	1KpF SMD
		C120	1KpF SMD
		C123	1KpF SMD
		C124	1KpF SMD
6	1	C11	CP.1uF
7	4	C14	150pF SMD
		C16	150pF SMD
		C97	150PF SMD
		C127	150pF SMD
8	3	C15	CM 10/16 SMD
		C29	CM 10/16 SMD
		C104	CM 10/16 SMD
9	7	C20	10KpF SMD
		C23	10KpF SMD
		C32	10KpF SMD
		C33	10KpF SMD
		C62	10KpF SMD
		C94	10KpF SMD
		C98	10KpF SMD
10	1	C21	47KpF SMD
11	3	C59	10uF SMD
		C81	10uF SMD
		C117	10uF SMD
12	2	C70	27pF SMD
		C66	27pF SMD
13	1	C78	CP .47uF
14	1	C86	CP1KP-100V

15	2	C88	ZLH220/35
		C89	ZLH220/35
16	1	C96	CE100/25
17	1	C100	PX470/35
18	1	C109	CP .47uF
19	4	DL1	ROSSO 0805
		DL2	ROSSO 0805
		DL3	ROSSO 0805
		DL4	ROSSO 0805
20	3	DZ1	5V1-0.5W SMD
		DZ2	5V1-0.5W SMD
		DZ10	5V1-0.5W SMD
21	1	DZ3	LM4040-5V-1%
22	2	DZ5	5V1-1W SMD
		DZ4	5V1-1W SMD
23	17	D1	LL4148
		D2	LL4148
		D3	LL4148
		D5	LL4148
		D6	LL4148
		D7	LL4148
		D8	LL4148
		D9	LL4148
		D11	LL4148
		D15	LL4148
		D20	LL4148
		D27	LL4148
		D32	LL4148
		D33	LL4148
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		D36	LL4148
24	2	D21	ES1J-STTH1R06A
		D22	ES1J-STTH1R06A
25	3	D23	1N4004 SMD
		D24	1N4004 SMD
		D25	1N4004 SMD
26	1	FIX1	FIX35
27	2	FST2	FAST-ON
		FST1	FAST-ON
28	2	F4	BL02
		F5	BL02
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33	1	J2	MLSS 3
34	3	J3	MICS 4
		J5	MICS 4
		J6	MICS 4
35	1	J4	MICS 6
36	1	J7	MICS 10
37	1	J8	STRIP 6
38	1	J9	STRIP 5
39	1	J11	MASCON 8
40	1	J12	MASCON 3
41	2	OC1	K10102A SMD
		OC2	K10102A SMD
42	1	PD2	LUNENO
43	2	Q1	2N7002 SMD
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44	6	Q3	BCR135
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		R14	1K5 SMD
		R21	1K5 SMD
		R57	1K5 SMD
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		R163	10K SMD
		R164	10K SMD
		R172	10K SMD
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51	2	R9	5K60 SMD

		R122	5K60 SMD
52	2	R10	68K SMD
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		R35	22K SMD
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		R75	6K8 SMD
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		R24	2K0 SMD
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		R165	59K0 SMD
		R174	59K0 SMD
		R175	59K0 SMD
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		R77	1K SMD
		R87	1K SMD
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		R120	1K SMD
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		R28	15K SMD
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		R56	270K SMD
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		R119	270K SMD
		R127	270K SMD
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		R46	20K SMD
		R72	20K SMD
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64	2	R149	100R 1/4W
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		R156	100R SMD
		R161	100R SMD
		R166	100R SMD
		R177	100R SMD
66	3	R48	4K7 SMD
		R67	4K7 SMD
		R148	4K7 SMD
67	1	R53	5K6 SMD
68	6	R54	56K SMD
		R89	56K SMD
		R98	56K SMD
		R99	56K SMD
		R138	56K SMD
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69	11	R69	2K2 SMD
		R94	2K2 SMD
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75	1	R90	10M SMD
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77	1	R115	R47 1/4W
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79	1	R129	NTC-10K SMD
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		R179	18K SMD
83	1	R180	249K SMD
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85	4	TP1	TP
		TP2	TP
		TP3	TP
		TP4	TP
86	1	TR1	3106X-1K
87	1	TR3	3106X-10K
88	2	TR5	3106X-500R
		TR4	3106X-500R
89	1	TR6	3106X-100K
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91	5	U1	LM258 SO8
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93	1	U3	UCC39002 SO8
94	1	U7	CD40106 SOIC
95	1	U9	TC1232COA
96	1	U11	CD4066 SOIC
97	1	U13	7805 D2PACK
98	1	U14	DS96176CN
99	1	U15	UC3843AN SMD
100	1	U17	25LC640-I/SN
101	1	U19	MC9S08AC16CFGE 44-LQFP
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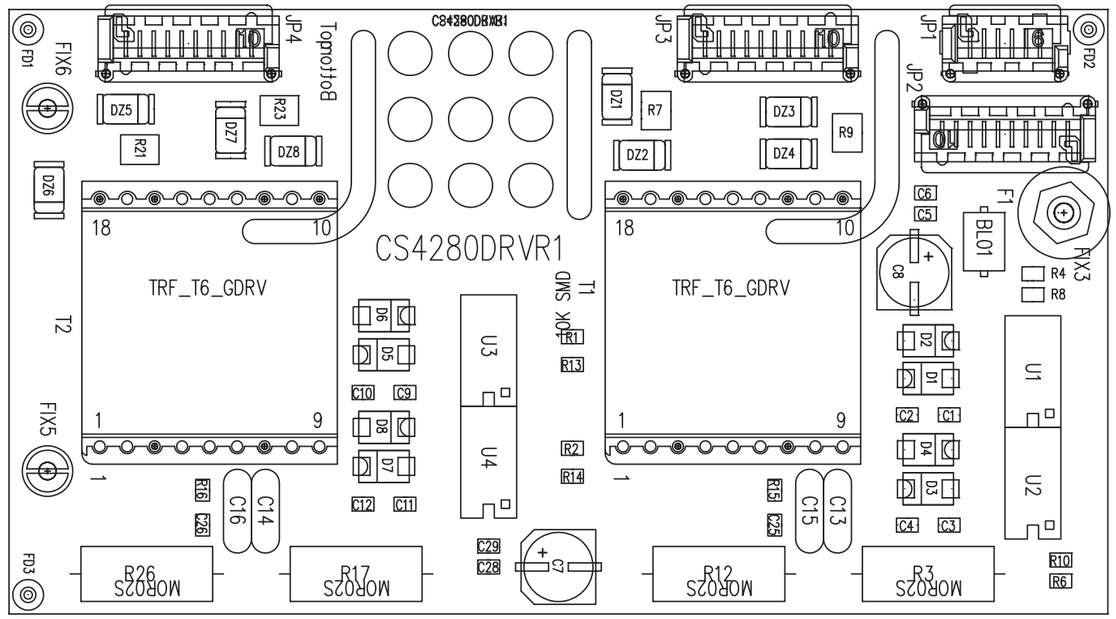
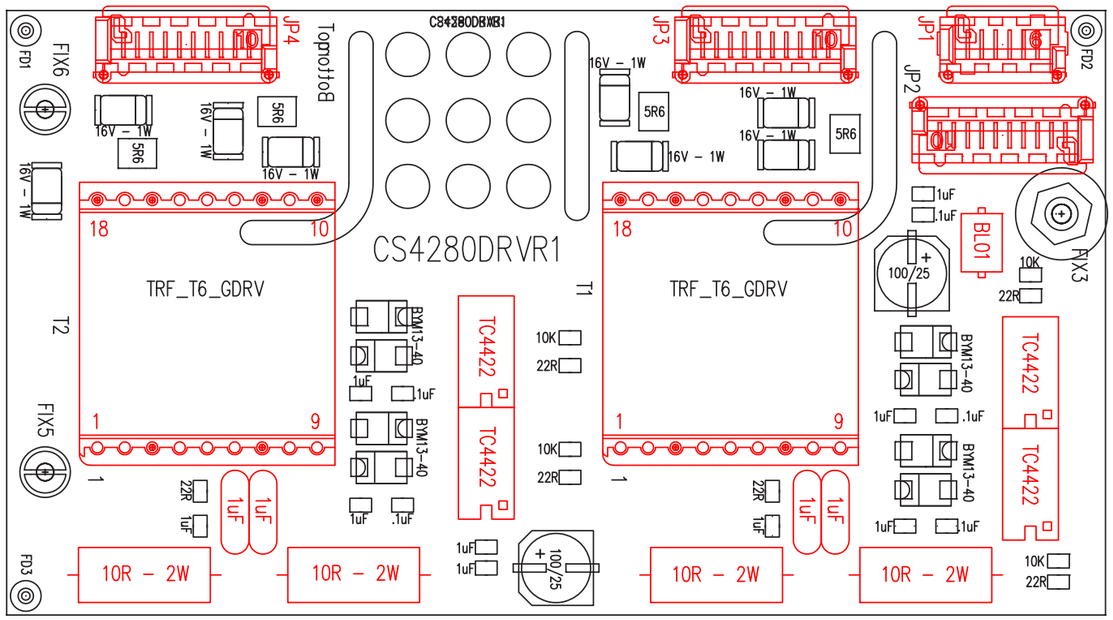
PIANO DI MONTAGGIO DRV PSL4280 R1





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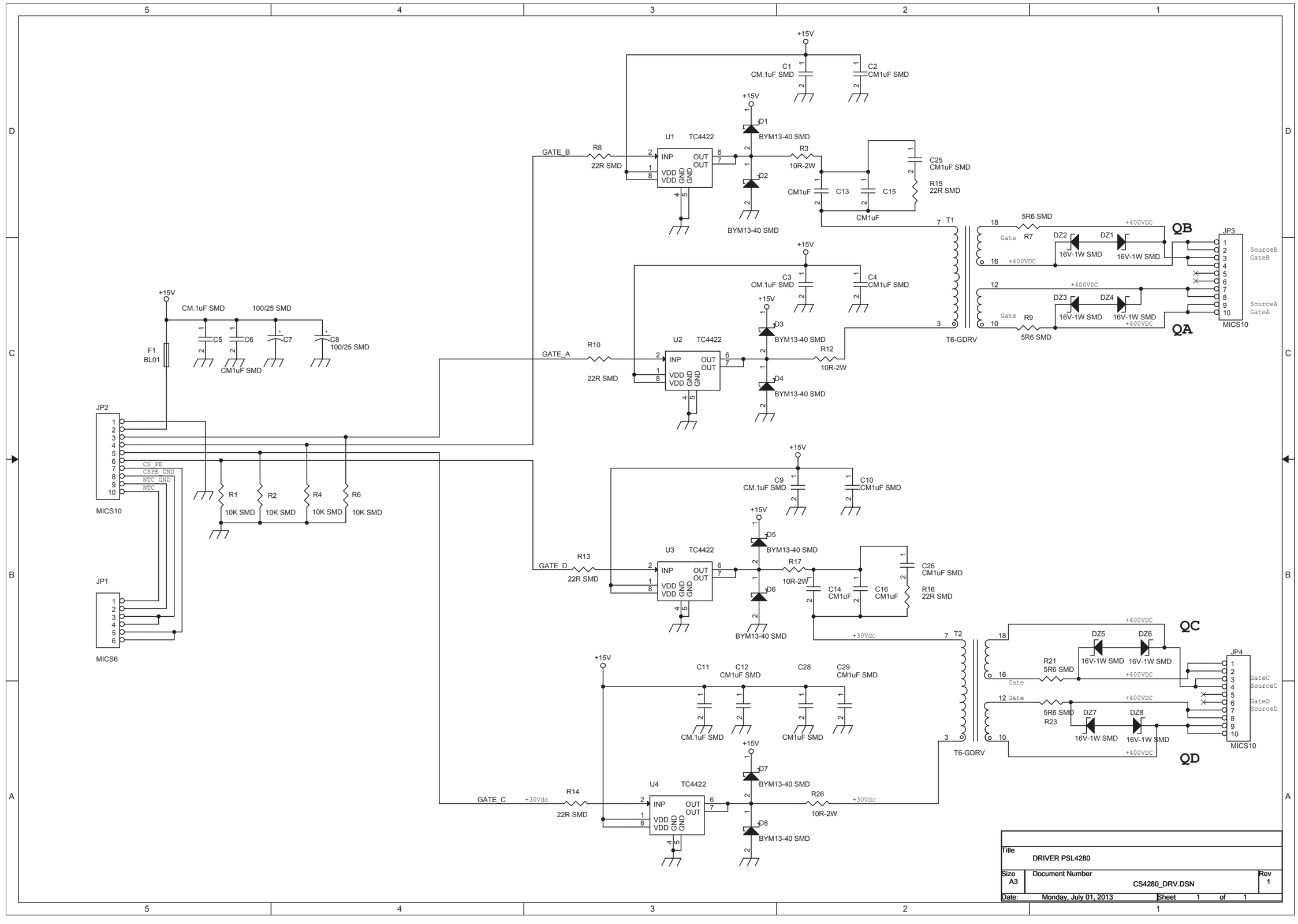
DATE:	23 GIUGNO 2013	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4
3
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C
B
A
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OUT
VDD
GND
GATE_B
R8 22R SMD
D1 BYM13-40 SMD
D2 BYM13-40 SMD
R3 10R-2W
C13 CM1uF
C15 CM1uF
C25 CM1uF SMD
R15 22R SMD
T1
T6-GDRV
5R6 SMD
Gate
R7
DZ1
DZ2
16V-1W SMD
+400VDC
QB
JP3
SourceB
GateB
C3 CM.1uF SMD
C4 CM1uF SMD
U2 TC4422
GATE_A
R10 22R SMD
D3 BYM13-40 SMD
D4 BYM13-40 SMD
R12 10R-2W
R9
DZ3
DZ4
SourceA
GateA
QA
MICS10
F1 BL01
C5
C6
C7
C8 100/25 SMD
CM.1uF SMD
100/25 SMD
CM1uF SMD
JP2
CS_PE
CSPE_GND
NTC_GND
NTC
R1 10K SMD
R2 10K SMD
R4 10K SMD
R6 10K SMD
JP1
MICS6
C9 CM.1uF SMD
C10 CM1uF SMD
U3 TC4422
GATE_D
R13 22R SMD
D5 BYM13-40 SMD
D6 BYM13-40 SMD
R17 10R-2W
C14 CM1uF
C16 CM1uF
C26 CM1uF SMD
R16 22R SMD
T2
R21 5R6 SMD
DZ5
DZ6
QC
GateC
SourceC
GateD
SourceD
R23 5R6 SMD
DZ7
DZ8
QD
C11
C12 CM1uF SMD
C28
C29 CM1uF SMD
U4 TC4422
GATE_C
R14 22R SMD
D7 BYM13-40 SMD
D8 BYM13-40 SMD
R26 10R-2W
+30Vdc
Title
DRIVER PSL4280
Size A3
Document Number
CS4280_DRV.DSN
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DRIVER PSL4280 Revised: Tuesday, April 30, 2013
CS4280_DRV.DSN Revision: 1

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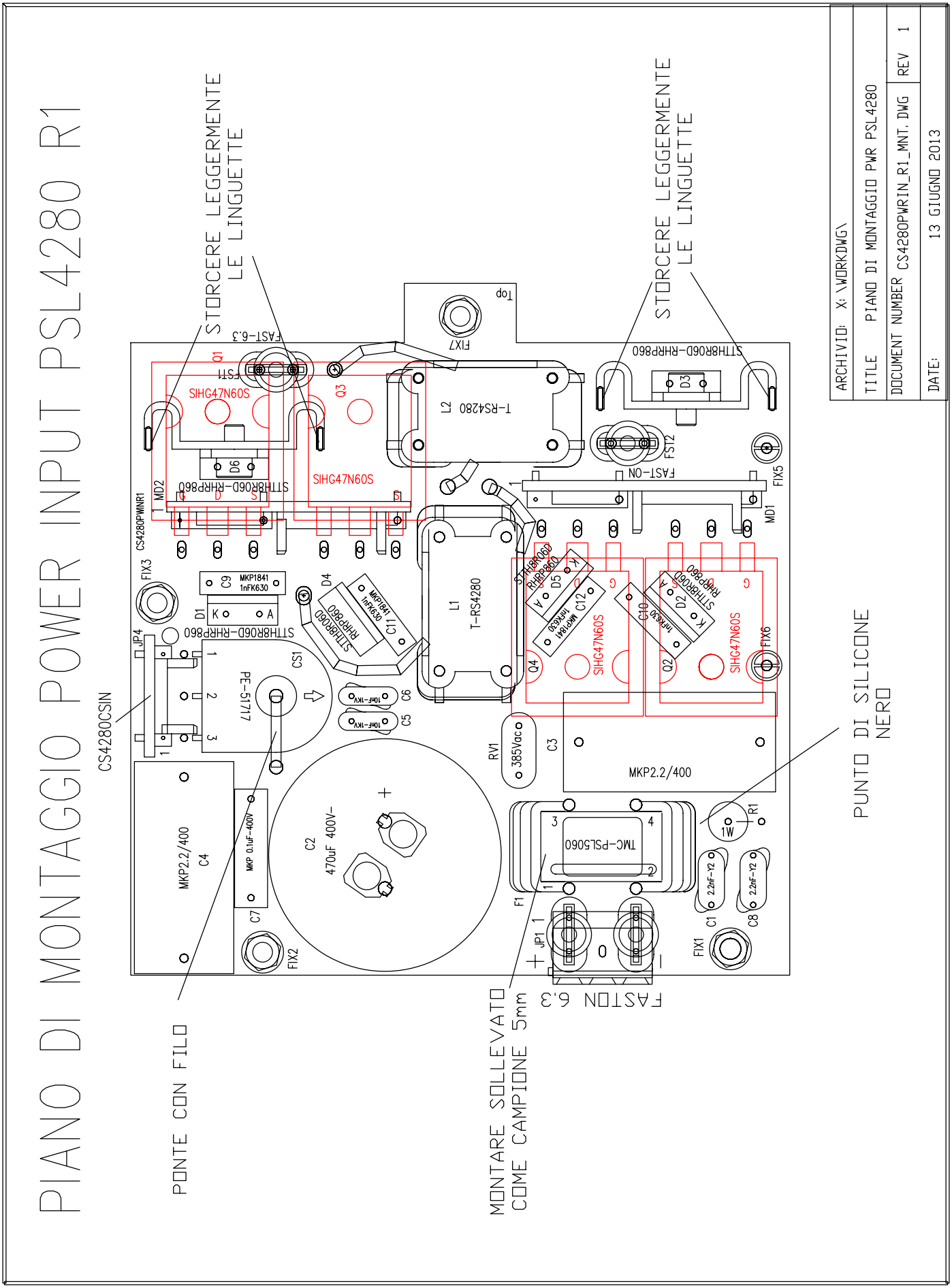
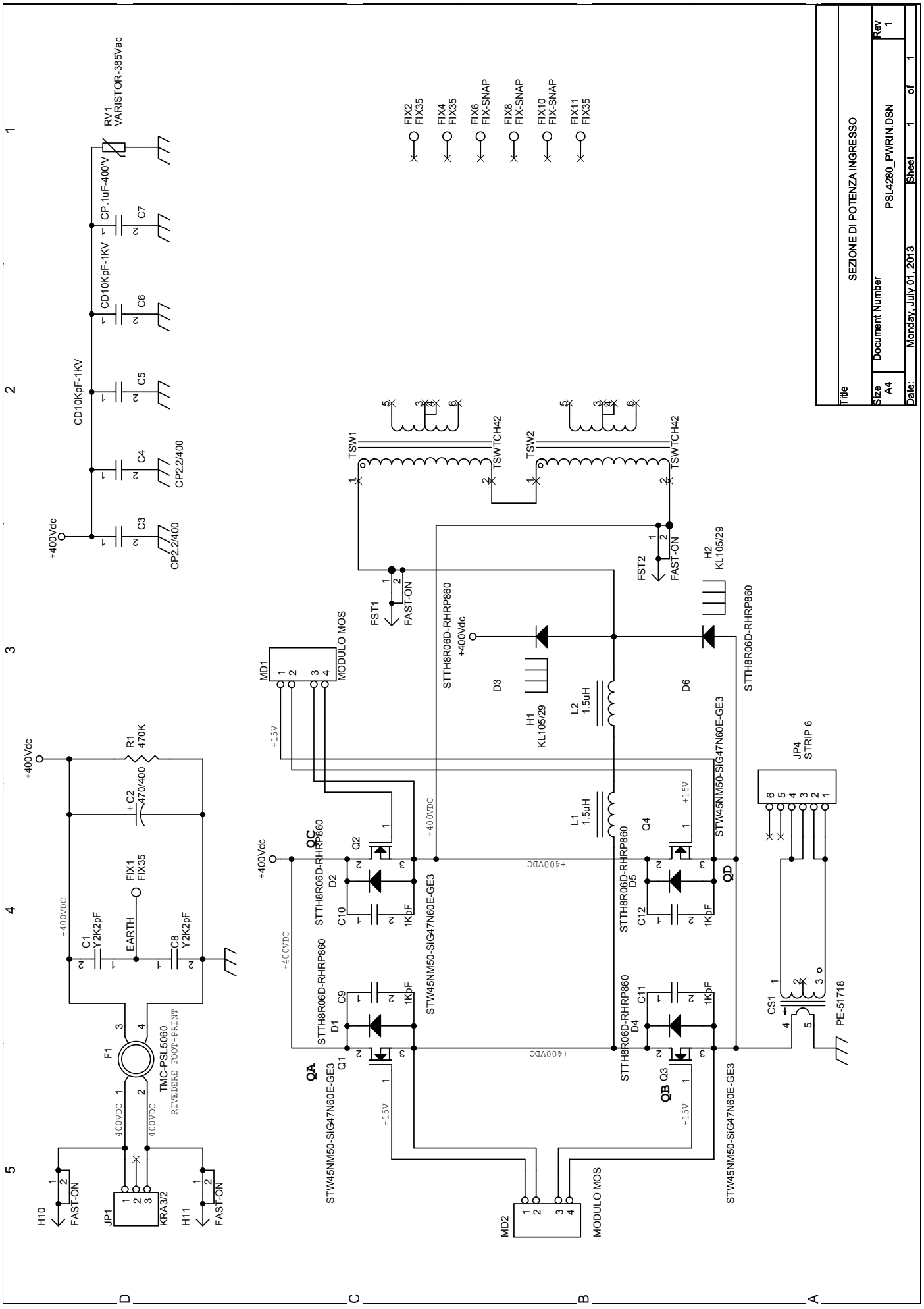
Item	Quantity	Reference	Part
1	5	C1	CM.1uF SMD
		C3	CM.1uF SMD
		C5	CM.1uF SMD
		C9	CM.1uF SMD
		C11	CM.1uF SMD
2	9	C2	CM1uF SMD
		C4	CM1uF SMD
		C6	CM1uF SMD
		C10	CM1uF SMD
		C12	CM1uF SMD
		C25	CM1uF SMD
		C26	CM1uF SMD
		C28	CM1uF SMD
		C29	CM1uF SMD
3	2	C8	100/25 SMD
		C7	100/25 SMD
4	4	C13	CM1uF
		C14	CM1uF
		C15	CM1uF
		C16	CM1uF
5	8	DZ1	16V-1W SMD
		DZ2	16V-1W SMD
		DZ3	16V-1W SMD
		DZ4	16V-1W SMD
		DZ5	16V-1W SMD
		DZ6	16V-1W SMD
		DZ7	16V-1W SMD
		DZ8	16V-1W SMD
6	8	D1	BYM13-40 SMD
		D2	BYM13-40 SMD
		D3	BYM13-40 SMD
		D4	BYM13-40 SMD
		D5	BYM13-40 SMD
		D6	BYM13-40 SMD
		D7	BYM13-40 SMD
		D8	BYM13-40 SMD
7	1	F1	BL01
8	1	JP1	MICS6
9	3	JP2	MICS10
		JP3	MICS10
		JP4	MICS10
10	4	R1	10K SMD
		R2	10K SMD
		R4	10K SMD
		R6	10K SMD
11	4	R3	10R-2W
		R12	10R-2W
		R17	10R-2W
		R26	10R-2W
12	4	R7	5R6 SMD
		R9	5R6 SMD
		R21	5R6 SMD
		R23	5R6 SMD
13	6	R8	22R SMD
		R10	22R SMD
		R13	22R SMD
		R14	22R SMD
		R15	22R SMD
		R16	22R SMD
14	2	T1	T6-GDRV
		T2	T6-GDRV
15	4	U1	TC4422
		U2	TC4422
		U3	TC4422
		U4	TC4422


PIANO DI MONTAGGIO POWER INPUT PSL4280 R1
STORCERE LEGGERMENTE
LE LINGUETTE
STORCERE LEGGERMENTE
LE LINGUETTE
Top
FIX7
FAST-6.3
Q1
FST1
SIHG47N60S
Q3
SIHG47N60S
D6
STTH8R06D-RHRP860
T-RS4280 L2
STTH8R06D-RHRP860
D3
FST2
FAST-ON
FIX5
MD1
MD2
CS4280PWNR1
FIX3
MKP1841
1nFK630
C9
D1
K
A
STTH8R06D-RHRP860
JP4
1
2
3
PE-5717
CS1
D4
MKP1841
1nFK630
C11
STTH8R06D-RHRP860
L1
T-RS4280
STTH8R06D-RHRP860
D5
C12
MKP1841
1nFK630
SIHG47N60S
Q4
C10
1nFK630
STTH8R06D-RHRP860
D2
SIHG47N60S
Q2
FIX6
10nF-1KV
C6
10nF-1KV
C5
RV1
385Vac
C3
MKP2.2/400
CS4280CSIN
MKP2.2/400
C4
MKP 0.1uF-400V
C7
C2
470uF 400V-
+
TMC-PSL5060
3
4
2
1
F1
R1
1W
2.2nF-Y2
C1
2.2nF-Y2
C8
JP1
1
+
0
-
FIX1
FIX2
FASTON 6.3
PUNTO DI SILICONE
NERO
PONTE CON FILO
MONTARE SOLLEVATO
COME CAMPIONE 5mm
ARCHIVIO: X:\WORKDWG\
TITLE PIANO DI MONTAGGIO PWR PSL4280
DOCUMENT NUMBER CS4280PWRIN_R1_MNT.DWG
REV 1
DATE: 13 GIUGNO 2013


SEZIONE DI POTENZA INGRESSO
Title
Size A4
Document Number
PSL4280_PWRIN.DSN
Rev 1
Date: Monday, July 01, 2013
Sheet 1 of 1
+400Vdc
RV1 VARISTOR-385Vac
CP.1uF-400V
CD10KpF-1KV
CD10KpF-1KV
CP2.2/400
CP2.2/400
FIX2 FIX35
FIX4 FIX35
FIX6 FIX-SNAP
FIX8 FIX-SNAP
FIX10 FIX-SNAP
FIX11 FIX35
TSW1
TSW2
TSWTCH42
FST1 FAST-ON
FST2 FAST-ON
H2 KL105/29
H1 KL105/29
L2 1.5uH
L1 1.5uH
STTH8R06D-RHRP860
STW45NM50-SiG47N60E-GE3
MODULO MOS
MD1
MD2
R1 470K
C2 470/400
FIX1 FIX35
EARTH
C1 Y2K2pF
C8 Y2K2pF
F1
TMC-PSL5060
RIVEDERE FOOT-PRINT
JP1 KRA3/2
H10 FAST-ON
H11 FAST-ON
JP4 STRIP 6
CS1
PE-51718
QA
QB
QC
QD
+15V
+400VDC
400VDC

SEZIONE DI POTENZA INGRESSO Revised: Thursday, May 16, 2013
PSL4280_PWRIN.DSN Revision: 1

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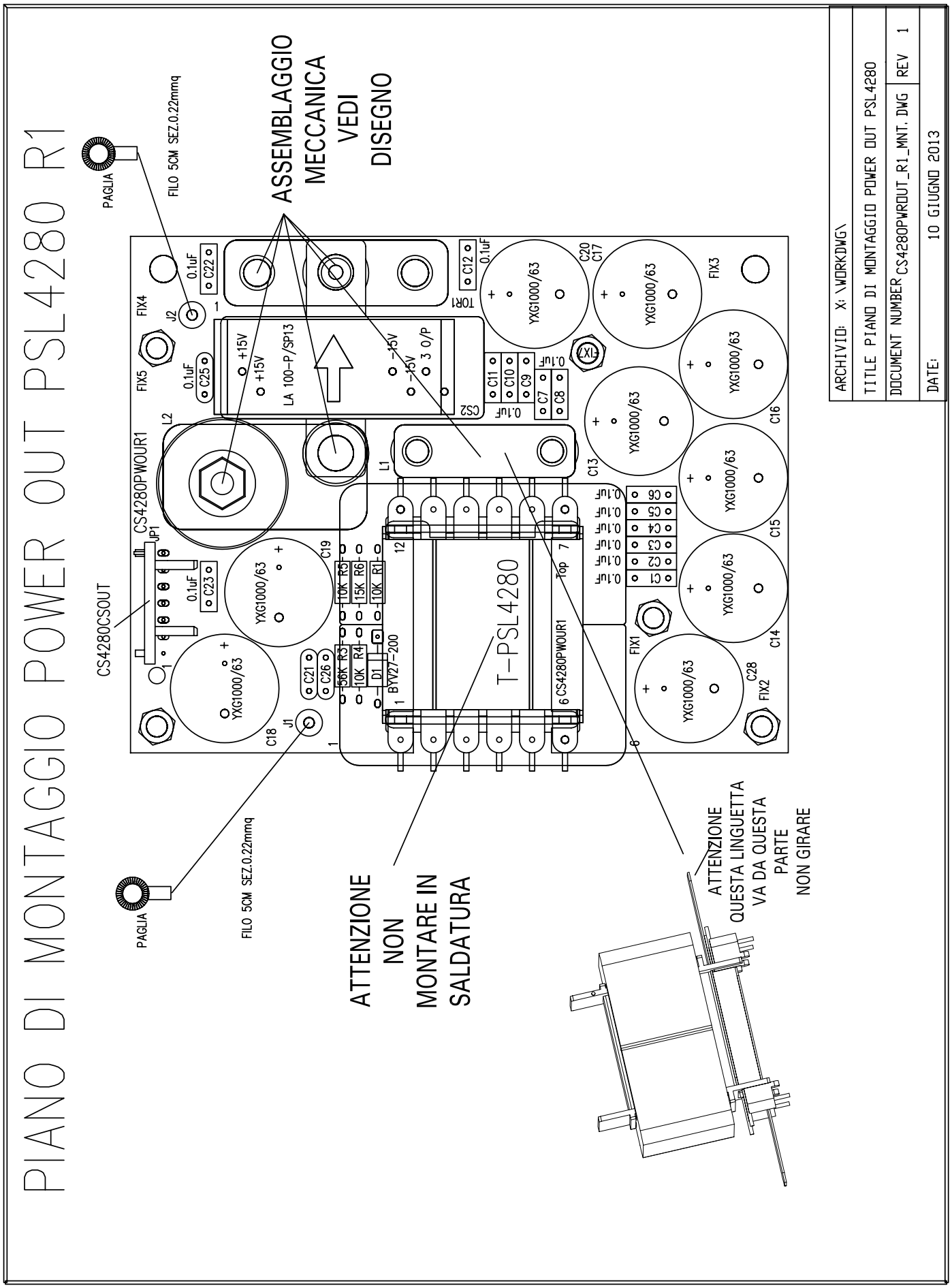
Item	Quantity	Reference	Part
1	1	CS1	PE-51718
2	2	C8	Y2K2pF
		C1	Y2K2pF
3	1	C2	470/400
4	2	C4	CP2.2/400
		C3	CP2.2/400
5	2	C6	CD10KpF-1KV
		C5	CD10KpF-1KV
6	1	C7	CP.1uF-400'V
7	4	C9	1KpF
		C10	1KpF
		C11	1KpF
		C12	1KpF
8	6	D1	STTH8R06D-RHRP860
		D2	STTH8R06D-RHRP860
		D3	STTH8R06D-RHRP860
		D4	STTH8R06D-RHRP860
		D5	STTH8R06D-RHRP860
		D6	STTH8R06D-RHRP860
9	4	FIX1	FIX35
		FIX2	FIX35
		FIX4	FIX35
		FIX11	FIX35
10	3	FIX6	FIX-SNAP
		FIX8	FIX-SNAP
		FIX10	FIX-SNAP
11	4	FST1	FAST-ON
		FST2	FAST-ON
		H10	FAST-ON
		H11	FAST-ON
12	1	F1	TMC-PSL5060
13	2	H1	KL105/29
		H2	KL105/29
14	1	JP1	KRA3/2
15	1	JP4	STRIP 6
16	2	L2	1.5uH
		L1	1.5uH
17	2	MD1	MODULO MOS
		MD2	MODULO MOS
18	4	Q1	STW45NM50-SiG47N60E-GE3
		Q2	STW45NM50-SiG47N60E-GE3
		Q3	STW45NM50-SiG47N60E-GE3
		Q4	STW45NM50-SiG47N60E-GE3
19	1	RV1	VARISTOR-385Vac
20	1	R1	470K
21	2	TSW1	TSWTCH42
		TSW2	TSWTCH42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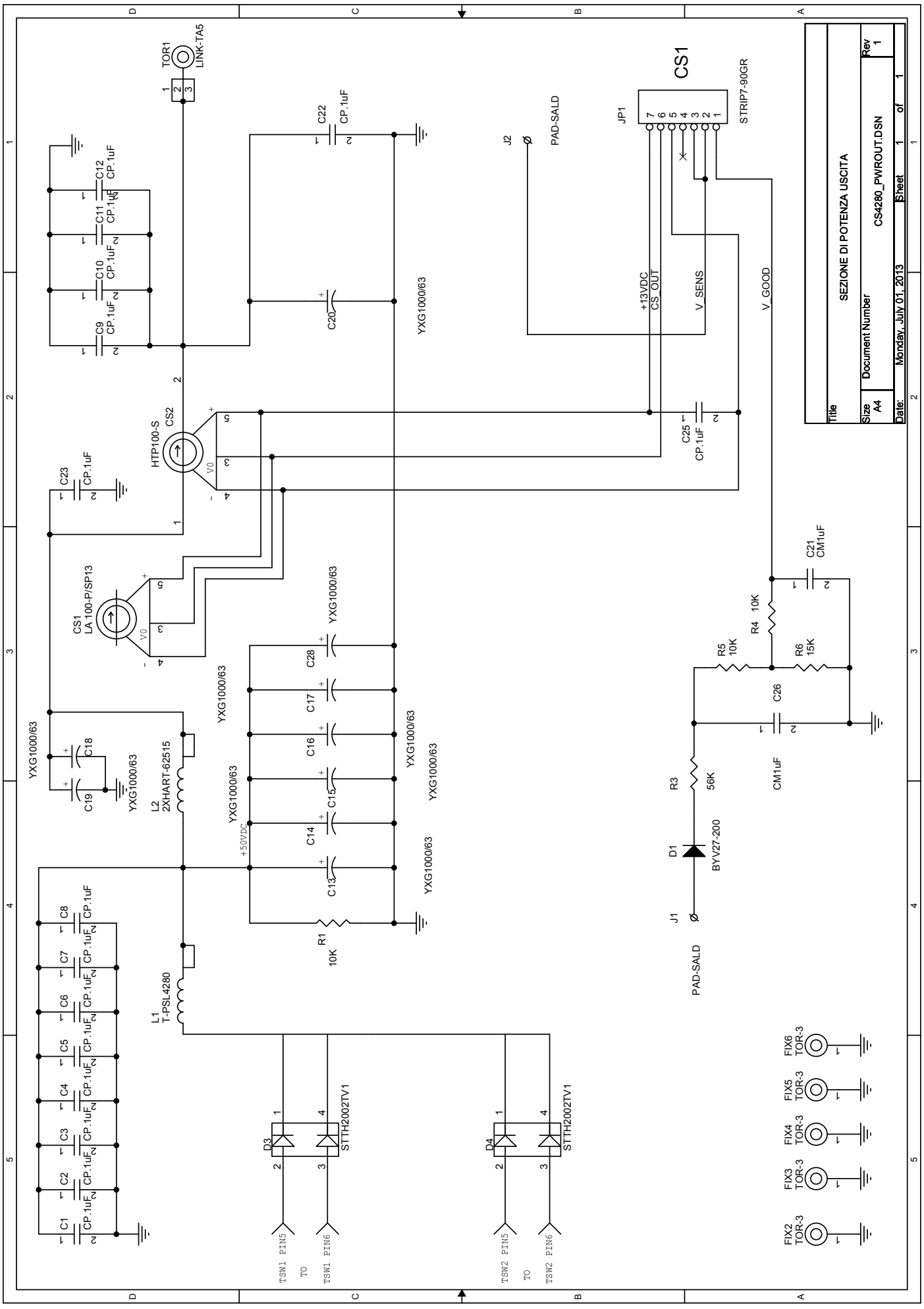
ASSEMBLAGGIO MECCANICA VEDI DISEGNO
PAGLIA
FILO 5CM SEZ.0.22mmq
CS4280CSOUT
CS4280PWOUR1
T-PSL4280
ATTENZIONE NON MONTARE IN SALDATURA
ATTENZIONE QUESTA LINGUETTA VA DA QUESTA PARTE NON GIRARE
ARCHIVIO: X:\WORKDWG\
TITLE PIANO DI MONTAGGIO POWER OUT PSL4280
DOCUMENT NUMBER CS4280PWROUT_R1_MNT.DWG REV 1
DATE: 10 GIUGNO 2013


SEZIONE DI POTENZA USCITA
Title
Size A4
Document Number
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Rev 1
Date: Monday, July 01, 2013
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TOR1 LINK-TA5
CS1
STRIP7-90GR
JP1
J2
PAD-SALD
C22 CP.1uF
C12 CP.1uF
C11 CP.1uF
C10 CP.1uF
C9 CP.1uF
C20
YXG1000/63
+13VDC
CS_OUT
V_SENS
V_GOOD
HTP100-S CS2
C25 CP.1uF
C23 CP.1uF
CS1 LA 100-P/SP13
C21 CM1uF
R4 10K
R5 10K
R6 15K
C26
CM1uF
C28
C17
C16
C15
C14
C13
C18
C19
L2 2XHART-62515
+50VDC
R3 56K
D1 BYY27-200
J1
PAD-SALD
R1 10K
L1 T-PSL4280
C1 CP.1uF
C2 CP.1uF
C3 CP.1uF
C4 CP.1uF
C5 CP.1uF
C6 CP.1uF
C7 CP.1uF
C8 CP.1uF
D3 STTH2002TV1
D4 STTH2002TV1
TSW1 PIN5 TO TSW1 PIN6
TSW2 PIN5 TO TSW2 PIN6
FIX2 TOR-3
FIX3 TOR-3
FIX4 TOR-3
FIX5 TOR-3
FIX6 TOR-3

SEZIONE DI POTENZA USCITA Revised: Monday, June 10, 2013
CS4280_PWROUT.DSN Revision: 1

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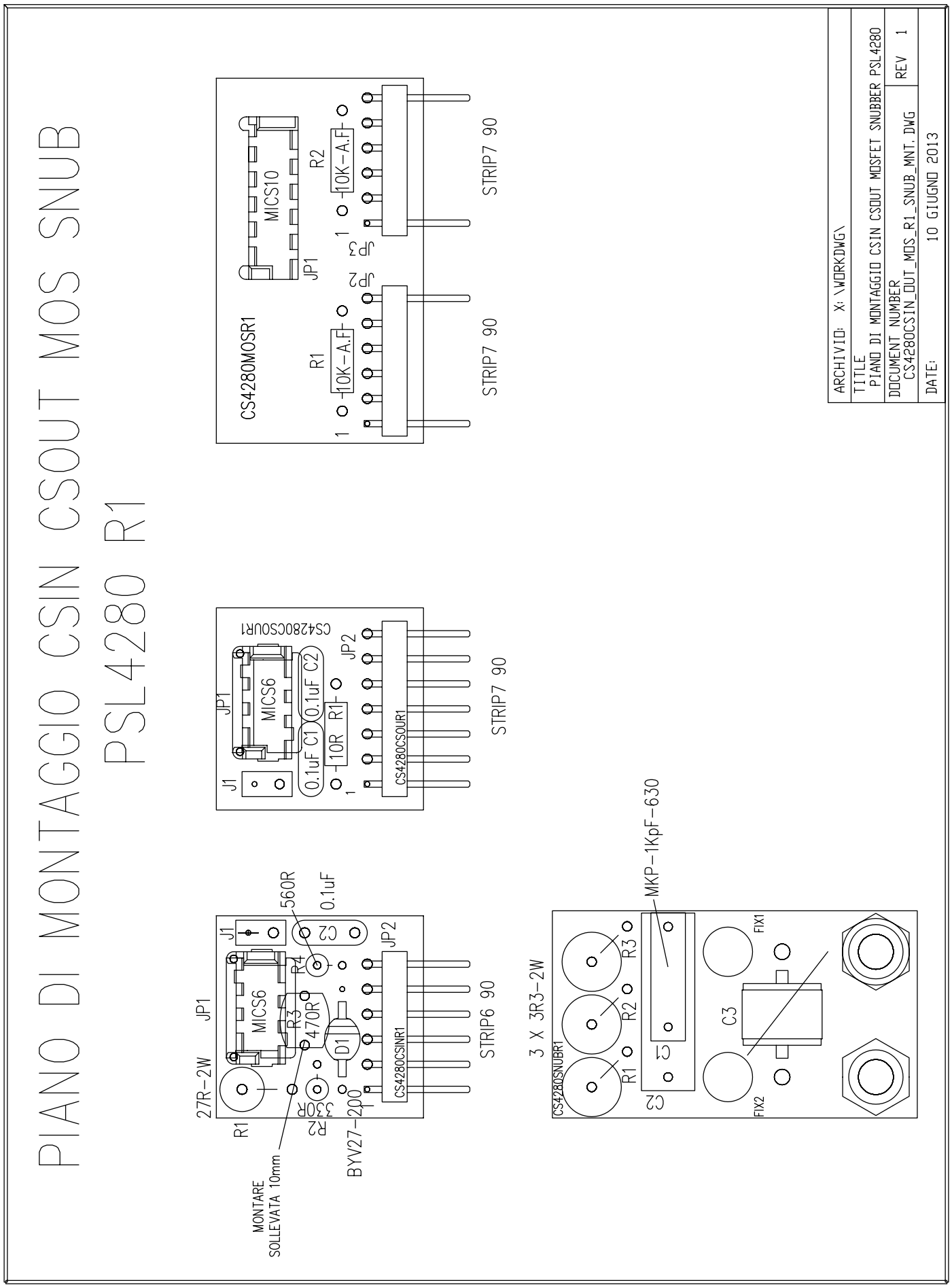
Item	Quantity	Reference	Part
1	1	CS1	LA 100-P/SP13
2	1	CS2	HTP100-S
3	15	C1	CP.1uF
		C2	CP.1uF
		C3	CP.1uF
		C4	CP.1uF
		C5	CP.1uF
		C6	CP.1uF
		C7	CP.1uF
		C8	CP.1uF
		C9	CP.1uF
		C10	CP.1uF
		C11	CP.1uF
		C12	CP.1uF
		C22	CP.1uF
		C23	CP.1uF
		C25	CP.1uF
4	9	C13	YXG1000/63
		C14	YXG1000/63
		C15	YXG1000/63
		C16	YXG1000/63
		C17	YXG1000/63
		C18	YXG1000/63
		C19	YXG1000/63
		C20	YXG1000/63
		C28	YXG1000/63
5	2	C26	CM1uF
		C21	CM1uF
6	1	D1	BYV27-200
7	2	D3	STTH2002TV1
		D4	STTH2002TV1
8	5	FIX2	TOR-3
		FIX3	TOR-3
		FIX4	TOR-3
		FIX5	TOR-3
		FIX6	TOR-3
9	1	JP1	STRIP7-90GR
10	2	J1	PAD-SALD
		J2	PAD-SALD
11	1	L1	T-PSL4280
12	1	L2	2XHART-62515
13	3	R1	10K
		R4	10K
		R5	10K
14	1	R3	56K
15	1	R6	15K
16	1	TOR1	LINK-TA5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PSL4280 R1
CS4280MOSR1
MICS10
JP1
R1
R2
10K-A.F
STRIP7 90
STRIP7 90
CS4280CSOUR1
MICS6
J1
JP1
JP2
0.1uF C1
0.1uF C2
10R R1
CS4280CSOUR1
STRIP7 90
27R-2W
R1
MICS6
JP1
J1
560R
0.1uF
C2
R4
R3
470R
D1
R2
330R
BYV27-200
CS4280CSINR1
JP2
STRIP6 90
MONTARE
SOLLEVATA 10mm
3 X 3R3-2W
CS4280SNUBR1
R1
R2
R3
C3
MKP-1KpF-630
C3
FIX1
FIX2
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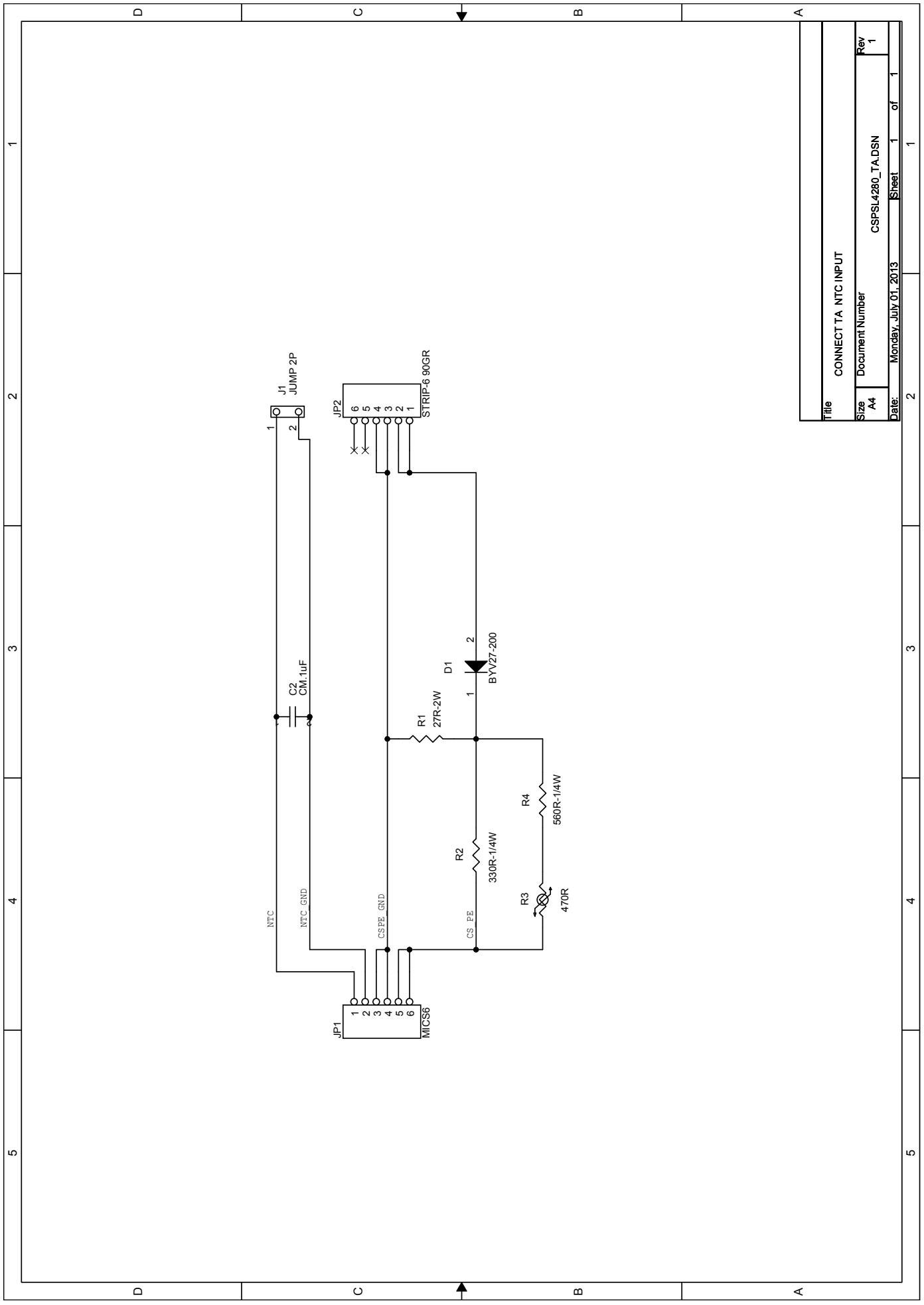
CS4280CSIN_OUT_MOS_R1_SNUB_MNT.DWG
REV 1
DATE:
10 GIUGNO 2013


J1
JUMP 2P
JP2
STRIP-6 90GR
C2
CM.1uF
D1
BYV27-200
R1
27R-2W
R2
330R-1/4W
R3
470R
R4
560R-1/4W
NTC
NTC_GND
CSPE_GND
CS_PE
JP1
MICS6
Title
CONNECT TA NTC INPUT
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A4
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CONNECT TA NTC INPUT Revised: Monday, June 10, 2013
CSPSL4280_TA.DSN   Revision: 1

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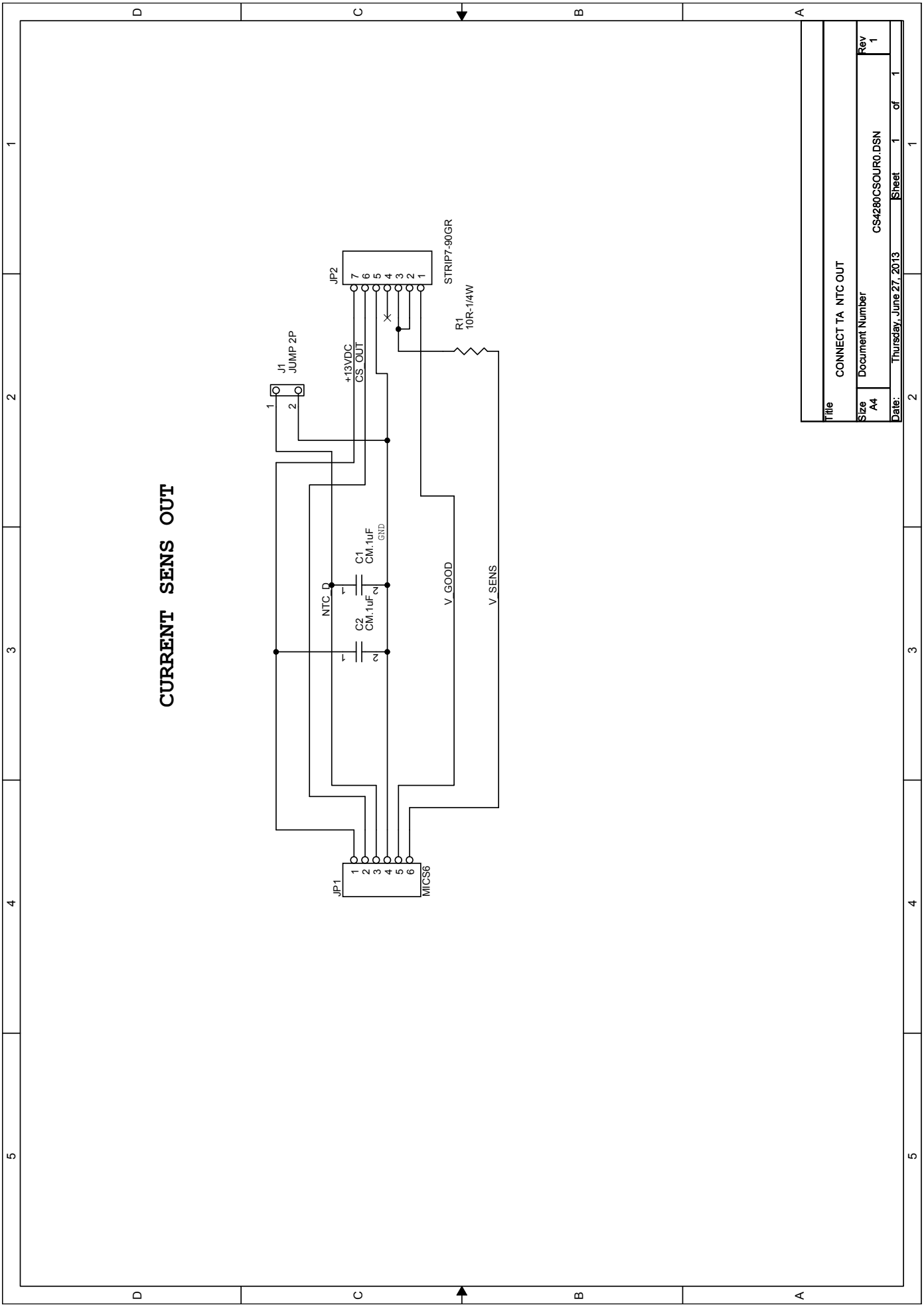
Item	Quantity	Reference	Part
1	1	C2	CM.1uF
2	1	D1	BYV27-200
3	1	JP1	MICS6
4	1	JP2	STRIP-6 90GR
5	1	J1	JUMP 2P
6	1	R1	27R-2W
7	1	R2	330R-1/4W
8	1	R3	470R
9	1	R4	560R-1/4W


CURRENT SENS OUT
JP2
STRIP7-90GR
J1
JUMP 2P
+13VDC
CS_OUT
R1
10R-1/4W
C1
CM.1uF
GND
C2
CM.1uF
NTC_D
V_GOOD
V_SENS
JP1
MICS6
CONNECT TA NTC OUT
Document Number
CS4280CSOUR0.DSN
Rev
1
Size
A4
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1

CONNECT TA NTC OUT Revised: Monday, June 10, 2013
CS4280CSOUR0.DSN   Revision: 1

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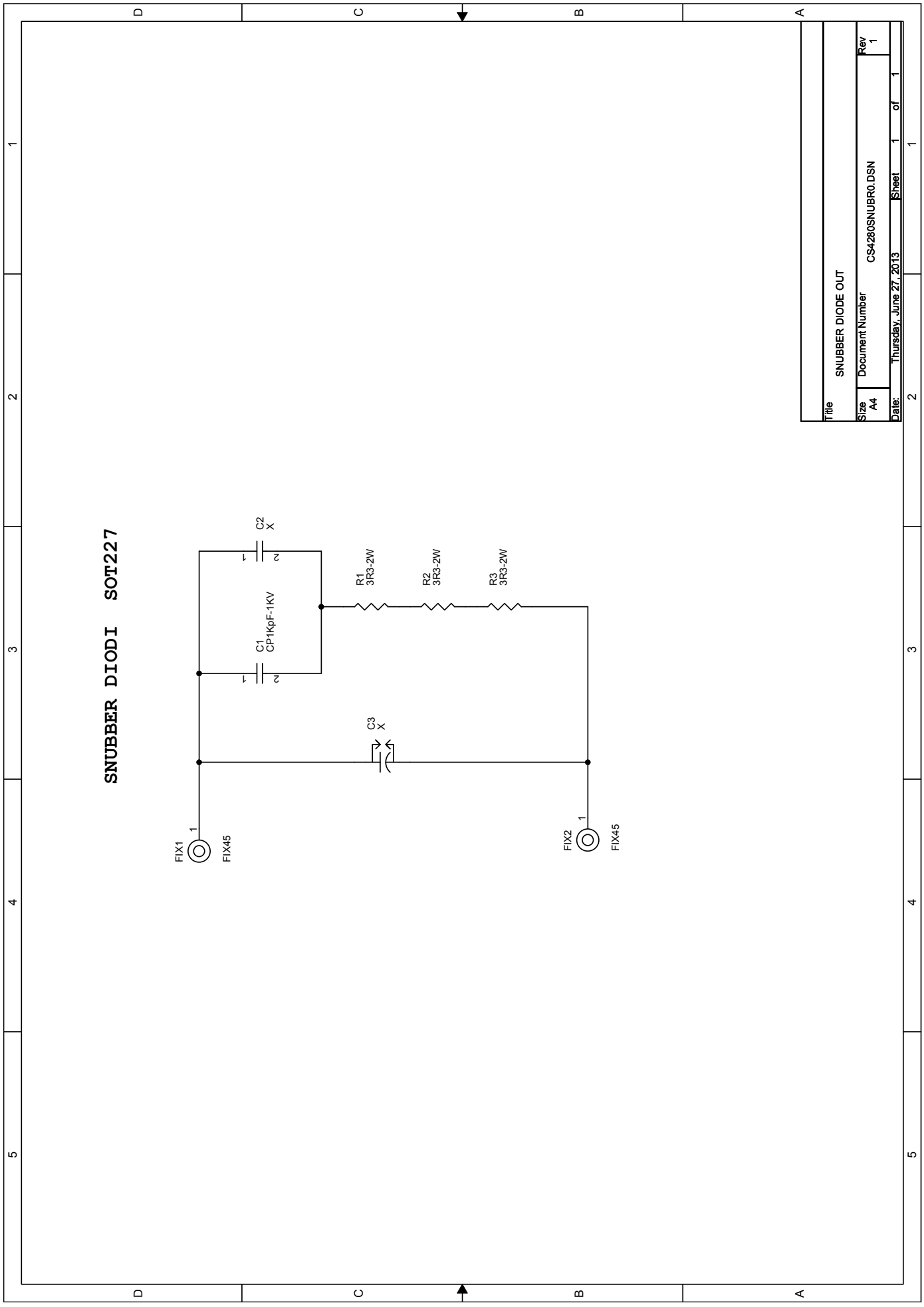
Item	Quantity	Reference	Part
1	2	C1	CM.1uF
		C2	CM.1uF
2	1	JP1	MICS6
3	1	JP2	STRIP7-90GR
4	1	J1	JUMP 2P
5	1	R1	10R-1/4W


SNUBBER DIODI SOT227
C2
X
C1
CP1KpF-1KV
R1
3R3-2W
R2
3R3-2W
R3
3R3-2W
C3
X
FIX1
1
FIX45
FIX2
1
FIX45
Title
SNUBBER DIODE OUT
Size
A4
Document Number
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1
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SNUBBER DIODE OUT Revised: Monday, June 10, 2013
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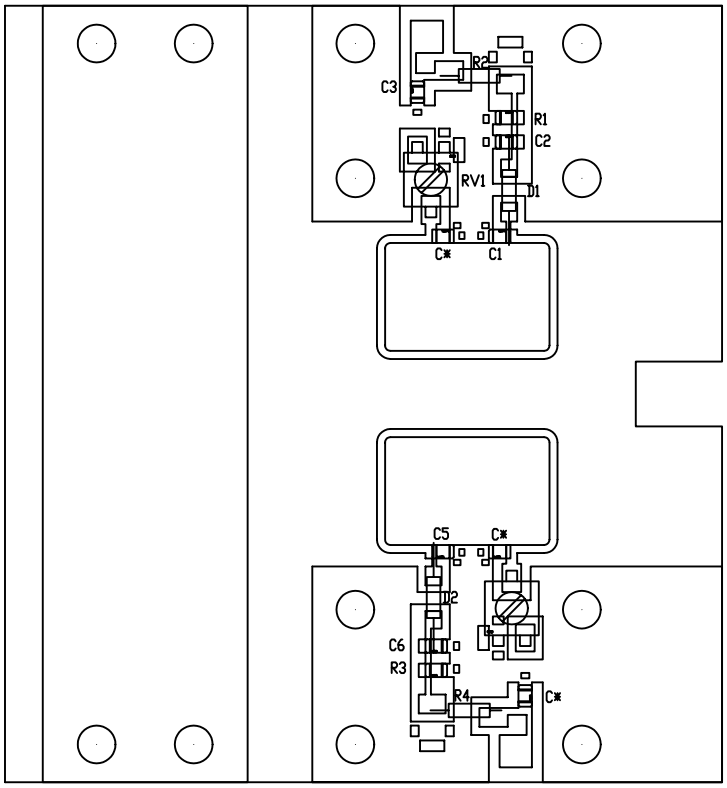
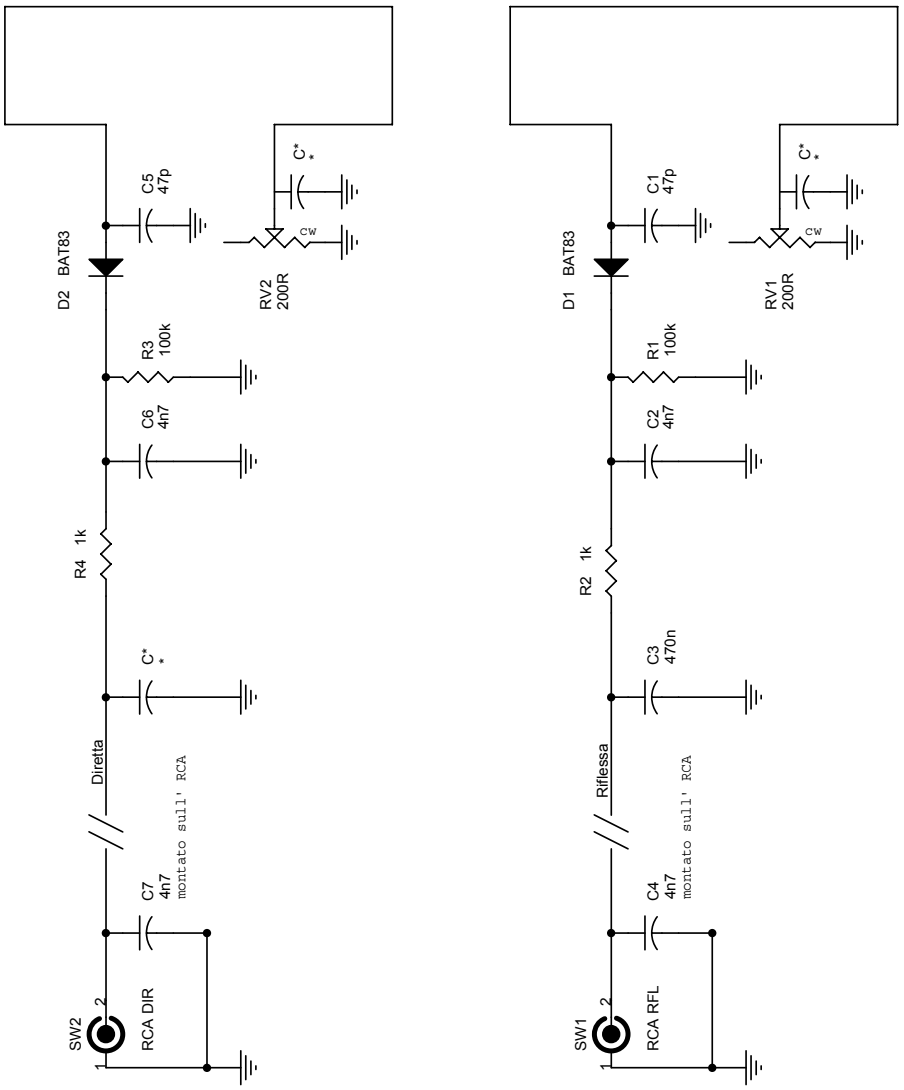
Item	Quantity	Reference	Part
1	1	C1	CP1KpF-1KV
2	2	C2	X
		C3	X
3	2	FIX1	FIX45
		FIX2	FIX45
4	3	R1	3R3-2W
		R2	3R3-2W
		R3	3R3-2W

6.2.13 Directional coupler (CSDCLPFPJ1KM)

Reflex



Foward



Nome Progetto: PJ5000MC		**Pagina:** 1 **di** 1	**Size:** A4
Autore: Ucelli Mauro	**Data:** 24/10/2001	**Codice Progetto:** PJ5000MC	
Nome PC in Rete: **sviluppo_8**	**Revisione:** 1.0	**Nome Parte:** Dir. Coupler Module 1KW	
File/Cartella: Testina1k	**Autorizzazione:**	**Codice:** <Doc>	

Dir. Coupler Module 1KW Revised: Tuesday, February 26, 2002
Revision: 1.0

PJ5000MC
PJ5000MC
Testina1k
Ucelli Mauro
24/10/2001

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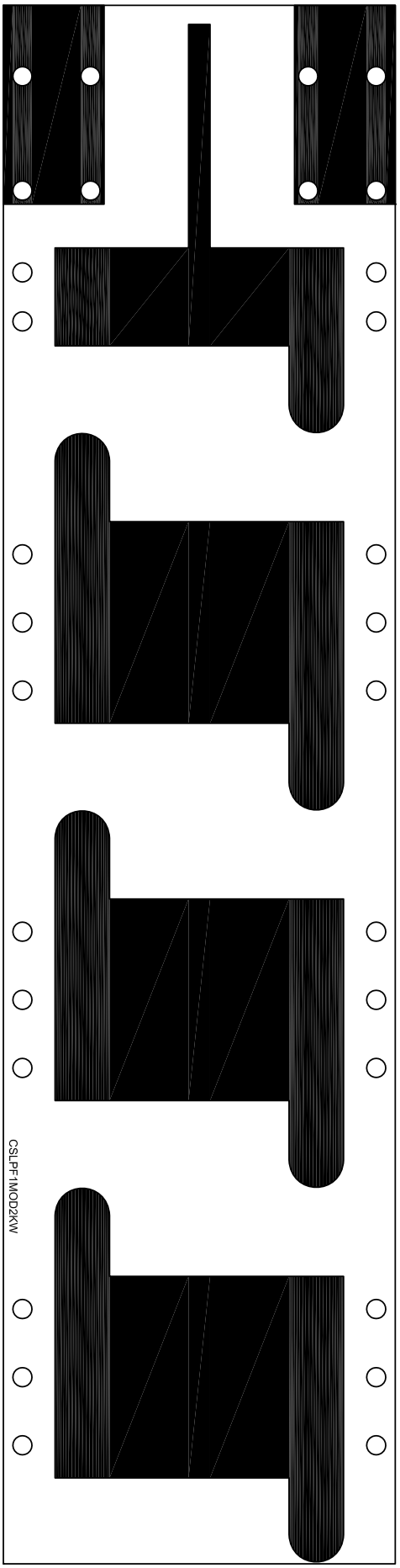
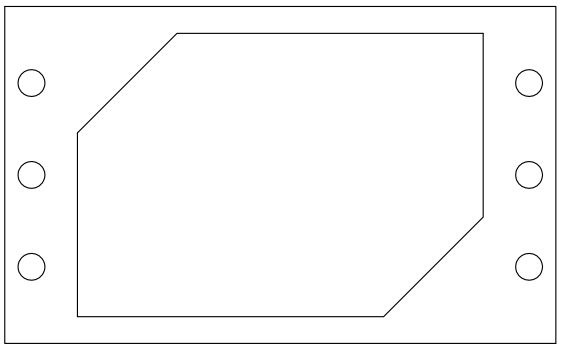
Item	Quantity	Reference	Part
1	1	C*	*
2	2	C5,C1	47p
3	4	C2,C4,C6,C7	4n7
4	1	C3	470n
5	2	D2,D1	BAT83
6	2	RV2,RV1	200R
7	2	R3,R1	100k
8	2	R2,R4	1k
9	1	SW1	RCA RFL
10	1	SW2	RCA DIR

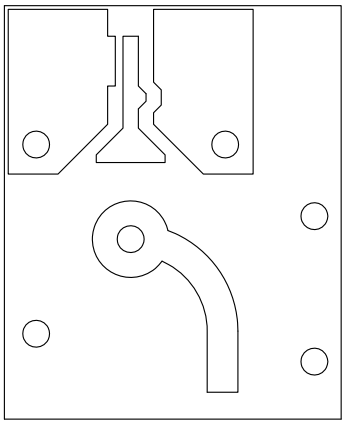
6.2.14 Low pass filter 1 (CSLPF1MOD2KW)



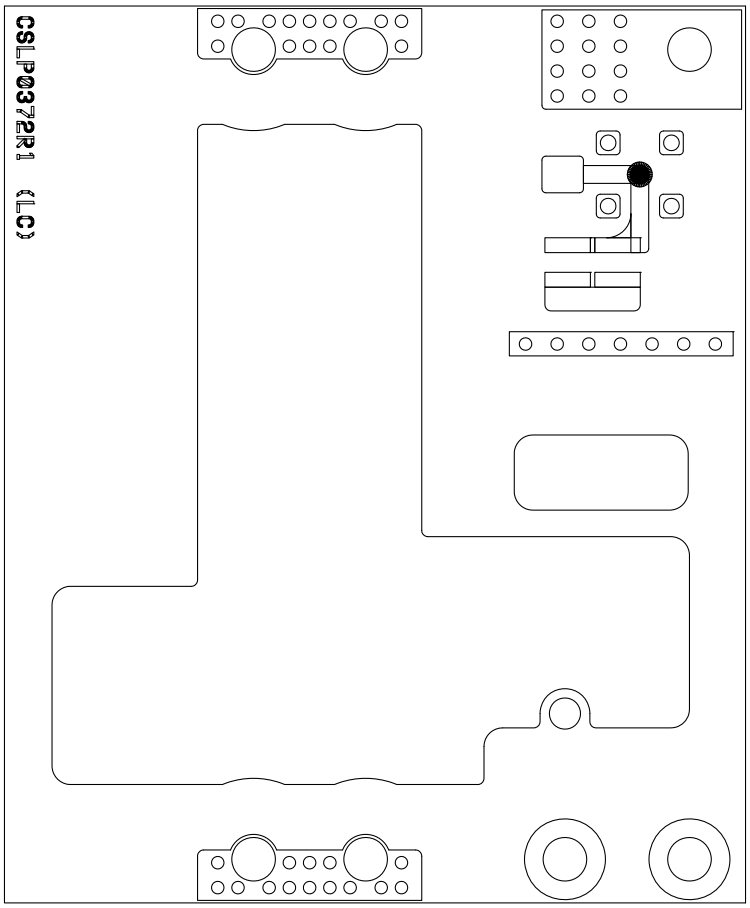
6.2.15 Capacitor 1 (CSB1LPFPJ1KM)



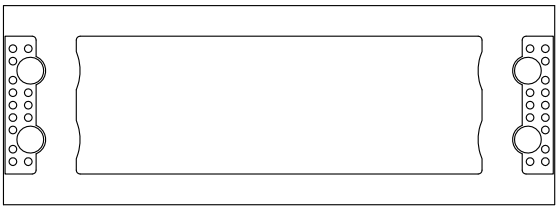
6.2.16 Card outlet connector (SLOUTRFPJ5K1)



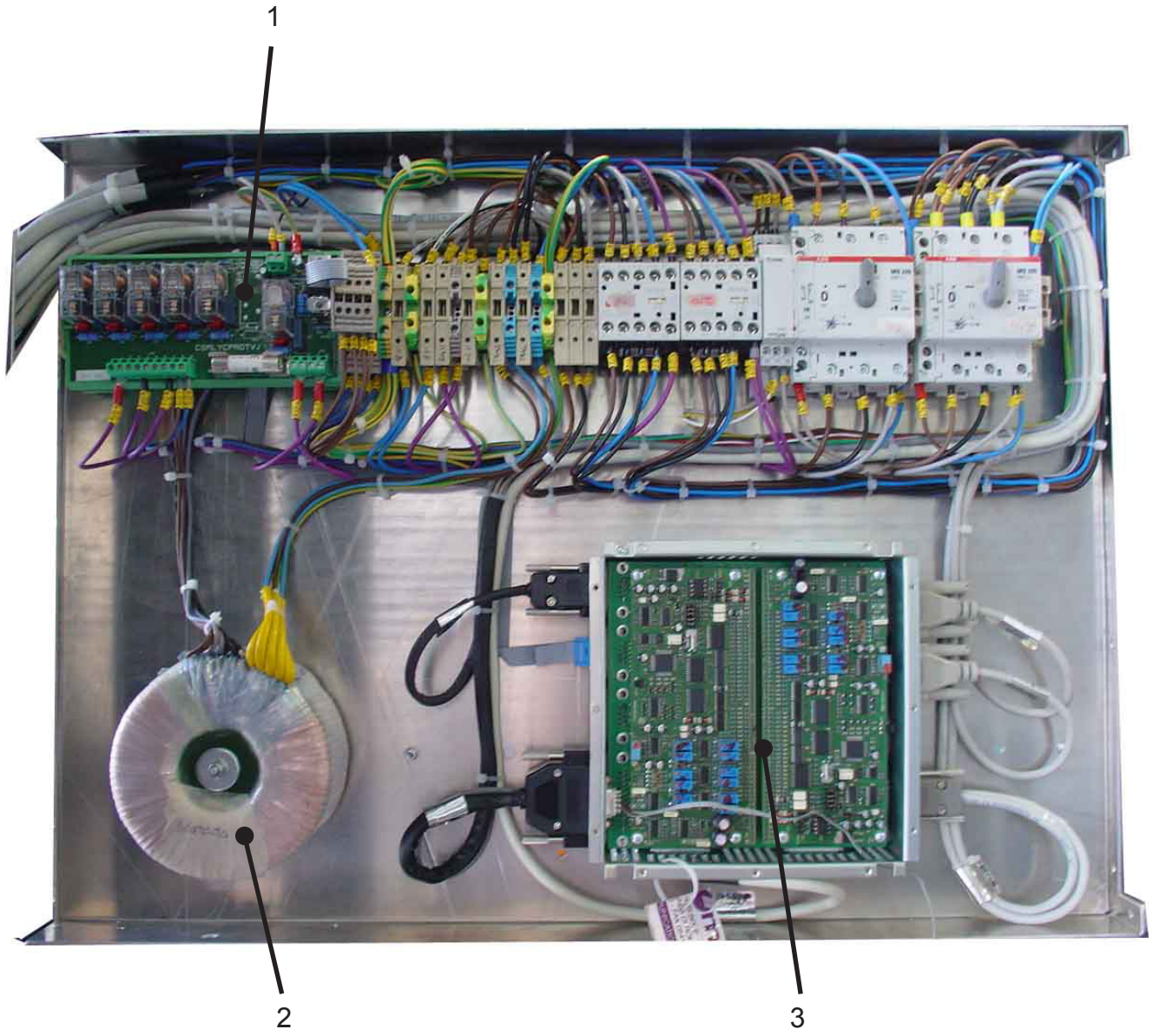
6.2.17 First capacitance low pass filter (CSLP0372R1)



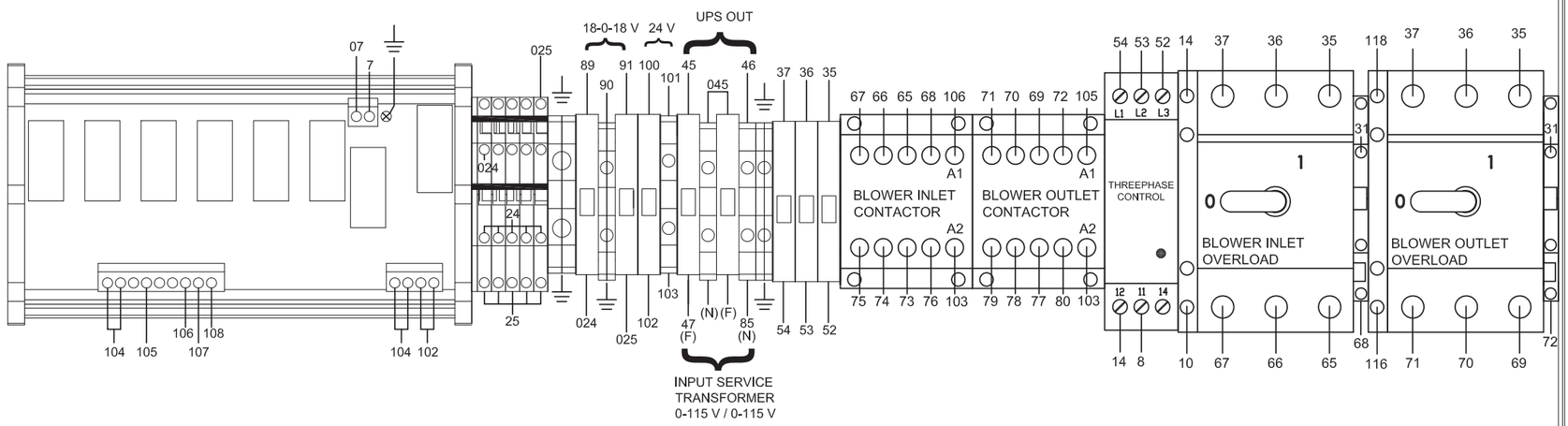
6.2.18 Low pass filter 2 (CSLPF2MOD2KW)

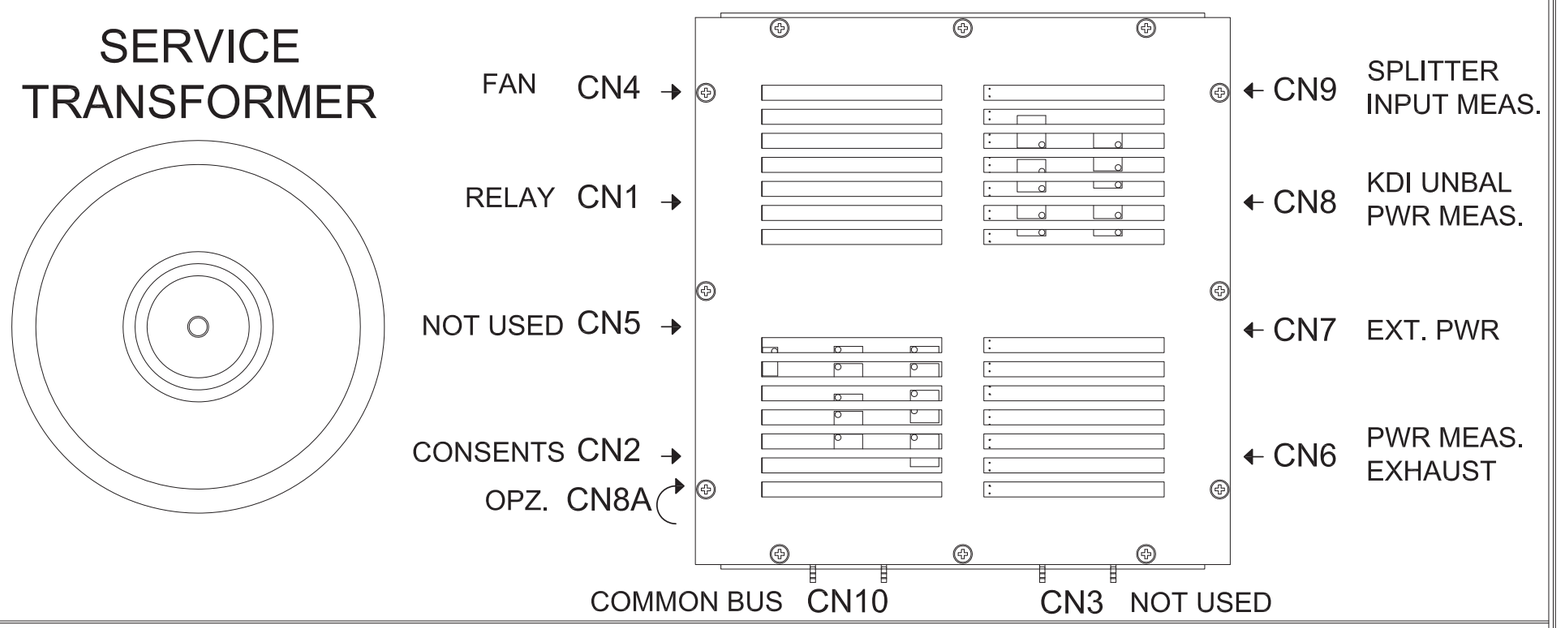


6.3 Electromechanical section

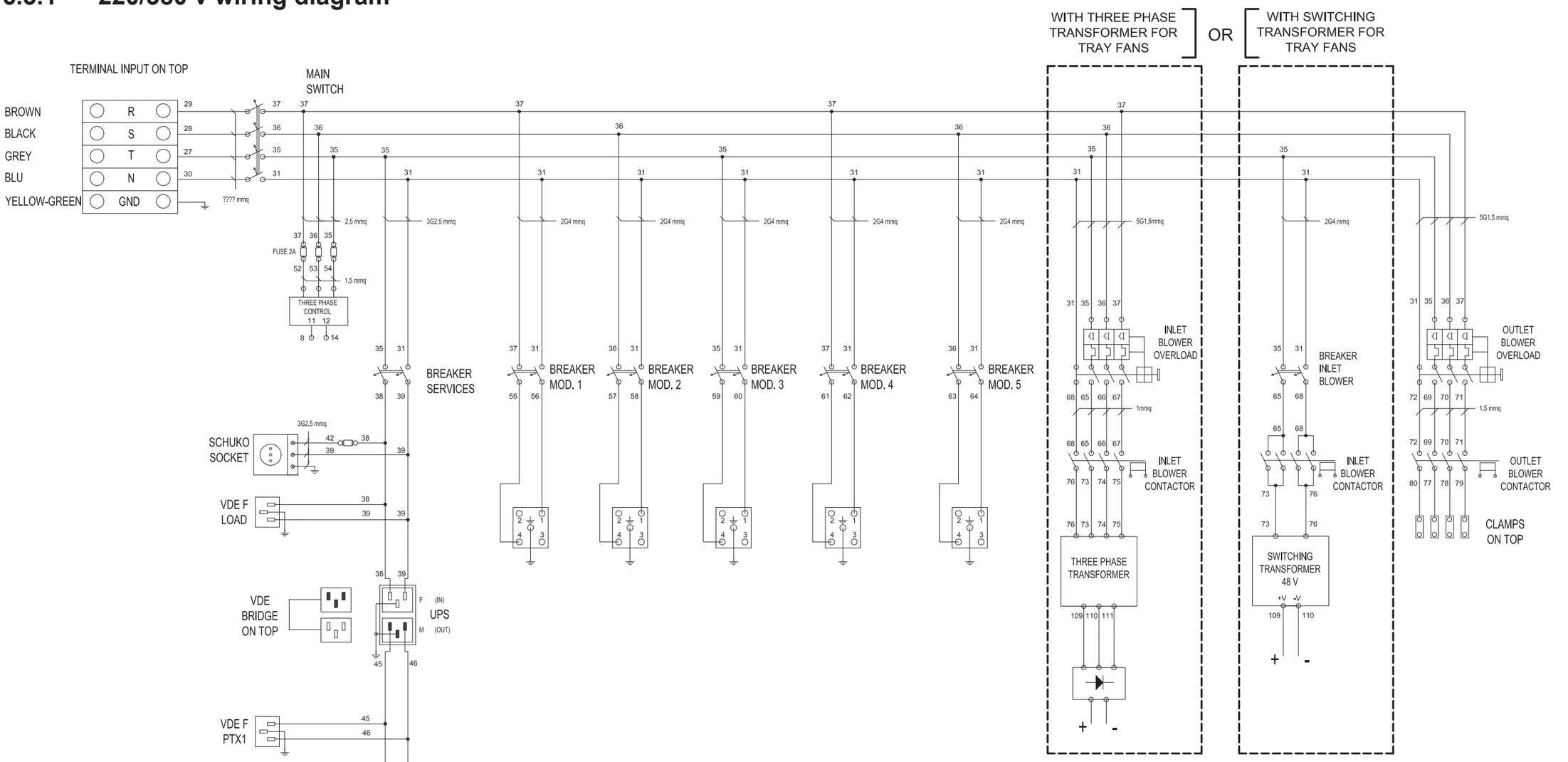


N°	Description	Code	Chapter
1	Relay interface board	CSRLYCPROTVJ	6.3.3
2	Service transformer		/
3	P.S. combiner	PF1ADPSPJ5KM { SLADPPSPJ5K2 / CPUPJ5KMC	6.3.4 / 6.2.10


07
7
025
024
24
25
104
105
106
108
107
104
102
18-0-18 V
24 V
UPS OUT
89
90
91
100
101
45
045
46
37
36
35
024
025
102
103
47
(F)
(N)
(F)
85
(N)
54
53
52
INPUT SERVICE
TRANSFORMER
0-115 V / 0-115 V
67 66 65 68 106
A1
A2
BLOWER INLET
CONTACTOR
75 74 73 76 103
71 70 69 72 105
A1
A2
BLOWER OUTLET
CONTACTOR
79 78 77 80 103
54 53 52
L1 L2 L3
THREEPHASE
CONTROL
12 11 14
14 8
14
37
36
35
1
0
BLOWER INLET
OVERLOAD
10
67
66
65
118
37
36
35
31
1
0
BLOWER OUTLET
OVERLOAD
31
68
116
71
70
69
72

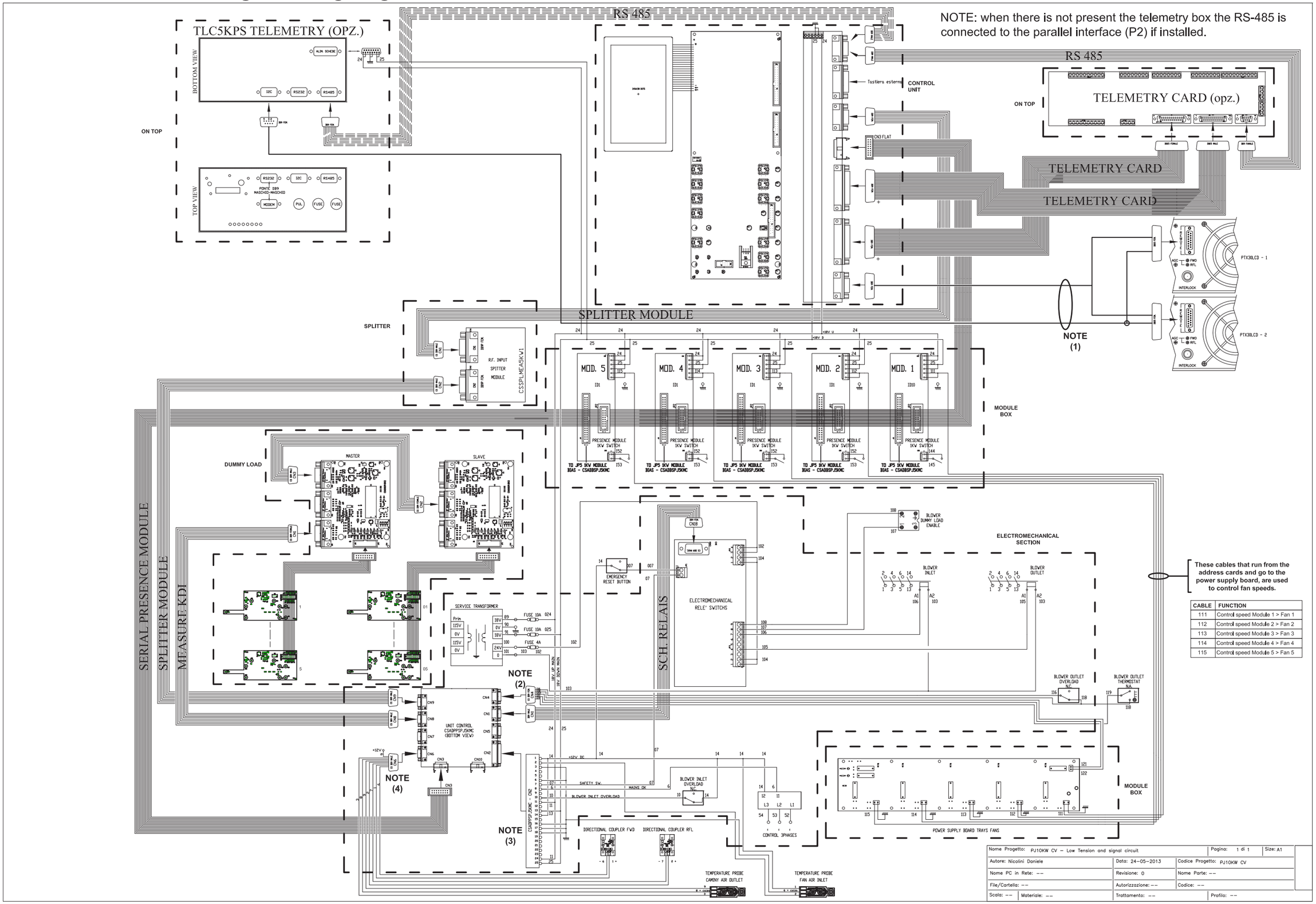

P.S. COMBINER
SERVICE
TRANSFORMER
FAN CN4
RELAY CN1
NOT USED CN5
CONSENTS CN2
OPZ. CN8A
CN9 SPLITTER
INPUT MEAS.
CN8 KDI UNBAL
PWR MEAS.
CN7 EXT. PWR
CN6 PWR MEAS.
EXHAUST
COMMON BUS CN10
CN3 NOT USED

6.3.1 220/380 v wiring diagram

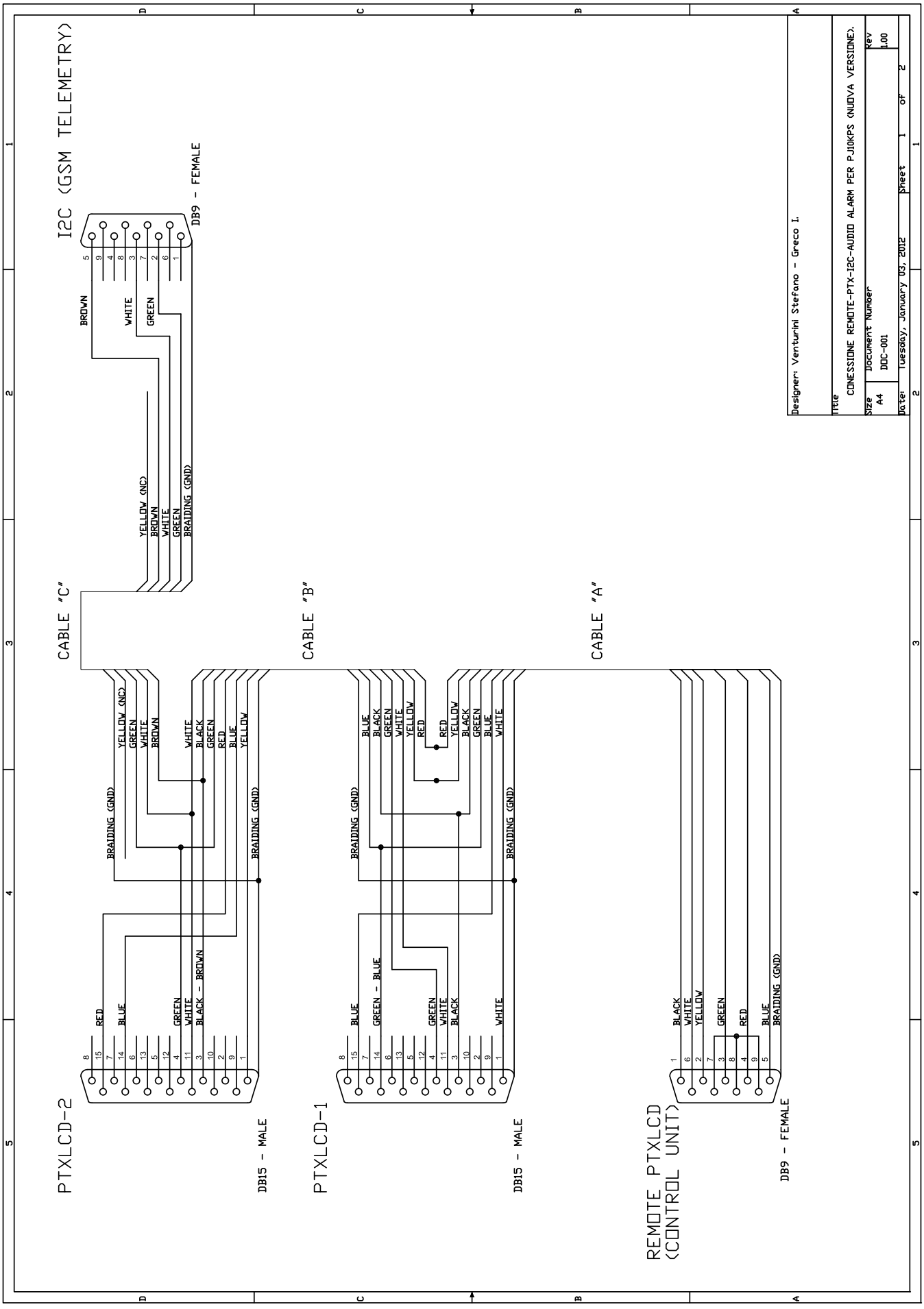


	DENOMINAZIONE: Circuito a 220/380 Volt		
	DISPOSITIVO: PJ10KW CV (Sezione cablaggio)		
	PEZZI PER MACCHINA: 1	N° PROGRAMMA:	CODICE AS400:
SEMILAVORATO:	DISEGNATO: Nicolini D. 24/05/13		CODICE DISEGNO:
MATERIALE:	SCALA: 1:1	REVISIONE: 00	TAVOLA: 1 di 1 / FOGLIO: A3
TRATTAMENTO:			

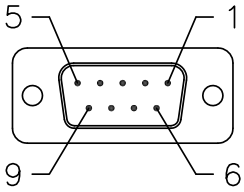
6.3.2 Low tension and signal wiring diagram



NOTE (1)

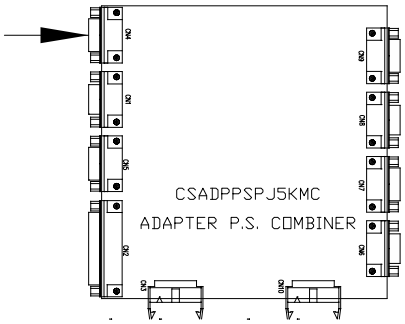

I2C (GSM TELEMETRY)
DB9 - FEMALE
BROWN
WHITE
GREEN
YELLOW (NC)
BROWN
WHITE
GREEN
BRAIDING (GND)
CABLE "C"
CABLE "B"
CABLE "A"
PTXLCD-2
DB15 - MALE
PTXLCD-1
DB15 - MALE
REMOTE PTXLCD
(CONTROL UNIT)
DB9 - FEMALE
Designer: Venturini Stefano - Greco I.
Title
CONESSIONE REMOTE-PTX-I2C-AUDIO ALARM PER PJ10KPS (NUOVA VERSIONE).
Size A4
Document Number DOC-001
Rev 1.00
Date: Tuesday, January 03, 2012
Sheet 1 of 2

NOTE (2)



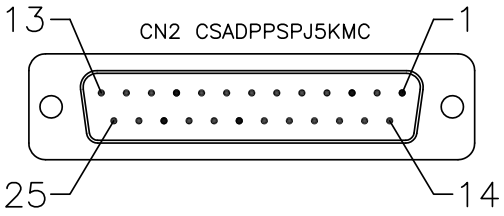
9 Pin Famale Connector
to CN4

Pin n°	Description	Cable number
1	+ 12V DC	118
2	BLOWER OUTLET THERMOSTAT	119
3		
4		
5	V FAN	122
6		
7	BLOWER OUTLET OVERLOAD	116
8		
9		
CASE	GND V FAN	121



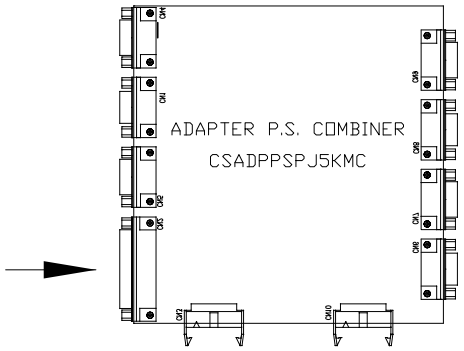
	DENOMINAZIONE: Cablaggio Connettore CN6 su Sch. CSADPPSPJ5KMC		
	DISPOSITIVO: PJ10KPS-CA (Sezione Cablaggio)		
	PEZZI PER MACCHINA: 1	N° PROGRAMMA: 0000.TLC	CODICE AS400:
SEMILAVORATO	DISEGNATO: Nicolini D. 20/06/13		CODICE DISEGNO: VISTA CABLAGGIO I
MATERIALE	SCALA: 1:1	REVISIONE: 00	TAVOLA: 1 di 1 / TOLLERANZA: +/- 0.1mm
TRATTAMENTO			

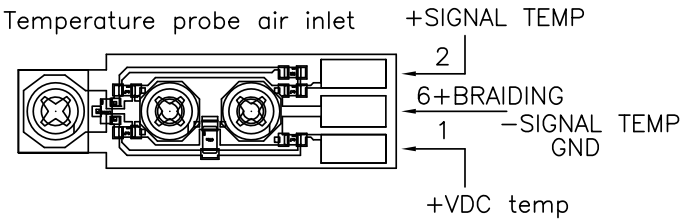
NOTE (3)



25 Pin Female Connector

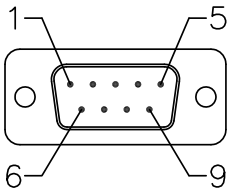
Pin/cable n°	Description
1	+12V DC and VDC TEMP
2	+ SIGNAL TEMP
3	GND
4	NC
5	NC
6	– SIGNAL TEMP, BRAIDING
7	EMERGENCY BUTTON
8	MAINS OK
10	BLOWER INLET OVERLOAD
11	POWER SUPPLY 18V UP
13	POWER SUPPLY 18V DW
14	+12V DC and VDC TEMP
15	NC
16	GND
17	GND
18	GND
19	NC
20	NC
21	NC
22	NC
23	NC
24	POWER SUPPLY 18V UP
25	POWER SUPPLY 18V DW





	DENOMINAZIONE: Descrizione Connettore CN2 su Sch. CSADPPSPJ5KMC			
	DISPOSITIVO: PJ10KPS–CA (Sezione Cablaggio)			
	PEZZI PER MACCHINA: 1	N° PROGRAMMA: 0000.TLC	CODICE AS400:	
SEMILAVORATO	DISEGNATO: Nicolini D. 20/06/13		CODICE DISEGNO: VISTA CABLAGGIO D	
MATERIALE				
TRATTAMENTO	SCALA: 1:1	REVISIONE: 00	TAVOLA: 1 di 1	TOLLERANZA: +/– 0.1mm

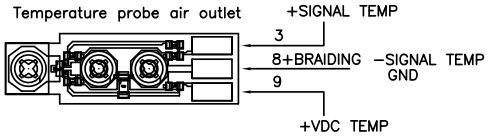
NOTE (4)



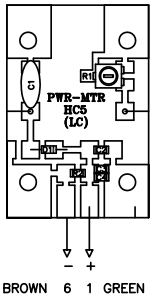
9 Pin Male Connector

to CN6–CSADPPSPJ5KMC

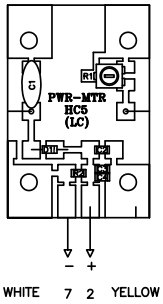
Pin n°	Description	Cable color
1	Power FWD (+)	GREEN
2	Power RFL (+)	YELLOW
3	+ SIGNAL TEMP	BROWN
4	GND	BRAIDING
5		
6	Power FWD (–)	BROWN
7	Power RFL (–)	WHITE
8	–SIGNAL TEMP	WHITE
9	+VDC TEMP (12V)	YELLOW

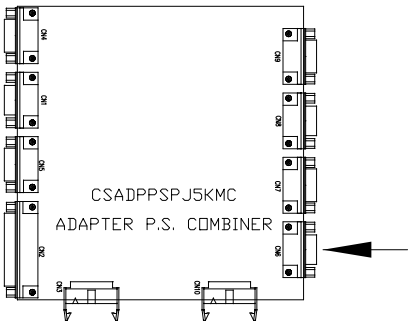


Directional coupler FWD



Directional coupler RFL

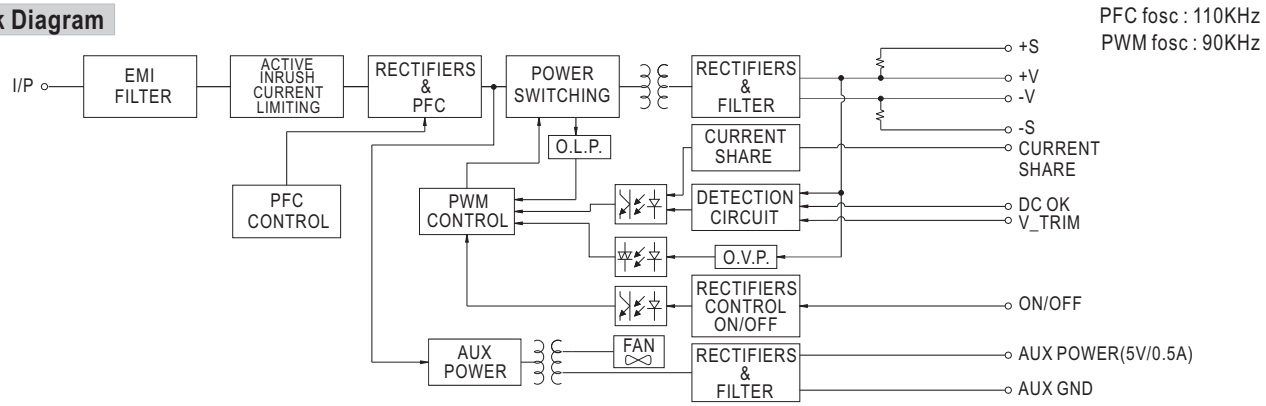




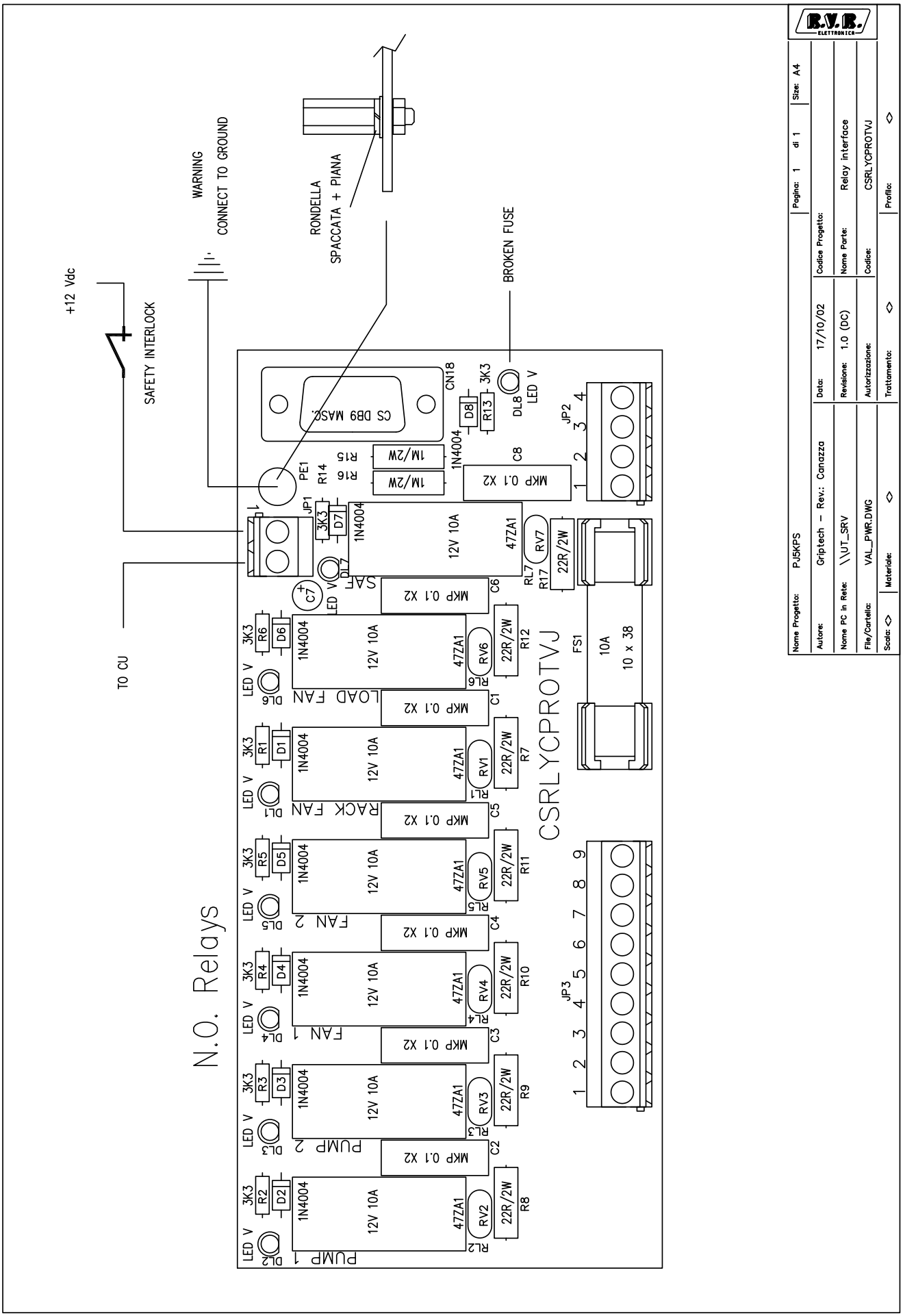
	DENOMINAZIONE: Cablaggio Connettore CN6 su Sch. CSADPPSPJ5KMC			
	DISPOSITIVO: PJ10KPS–CA (Sezione Cablaggio)			
	PEZZI PER MACCHINA: 1	N° PROGRAMMA: 0000.TLC	CODICE AS400:	
SEMILAVORATO	DISEGNATO: Nicolini D. 20/06/13		CODICE DISEGNO: VISTA CABLAGGIO I	
MATERIALE	SCALA: 1:1	REVISIONE: 00	TAVOLA: 1 di 1	TOLLERANZA: +/– 0.1mm
TRATTAMENTO				

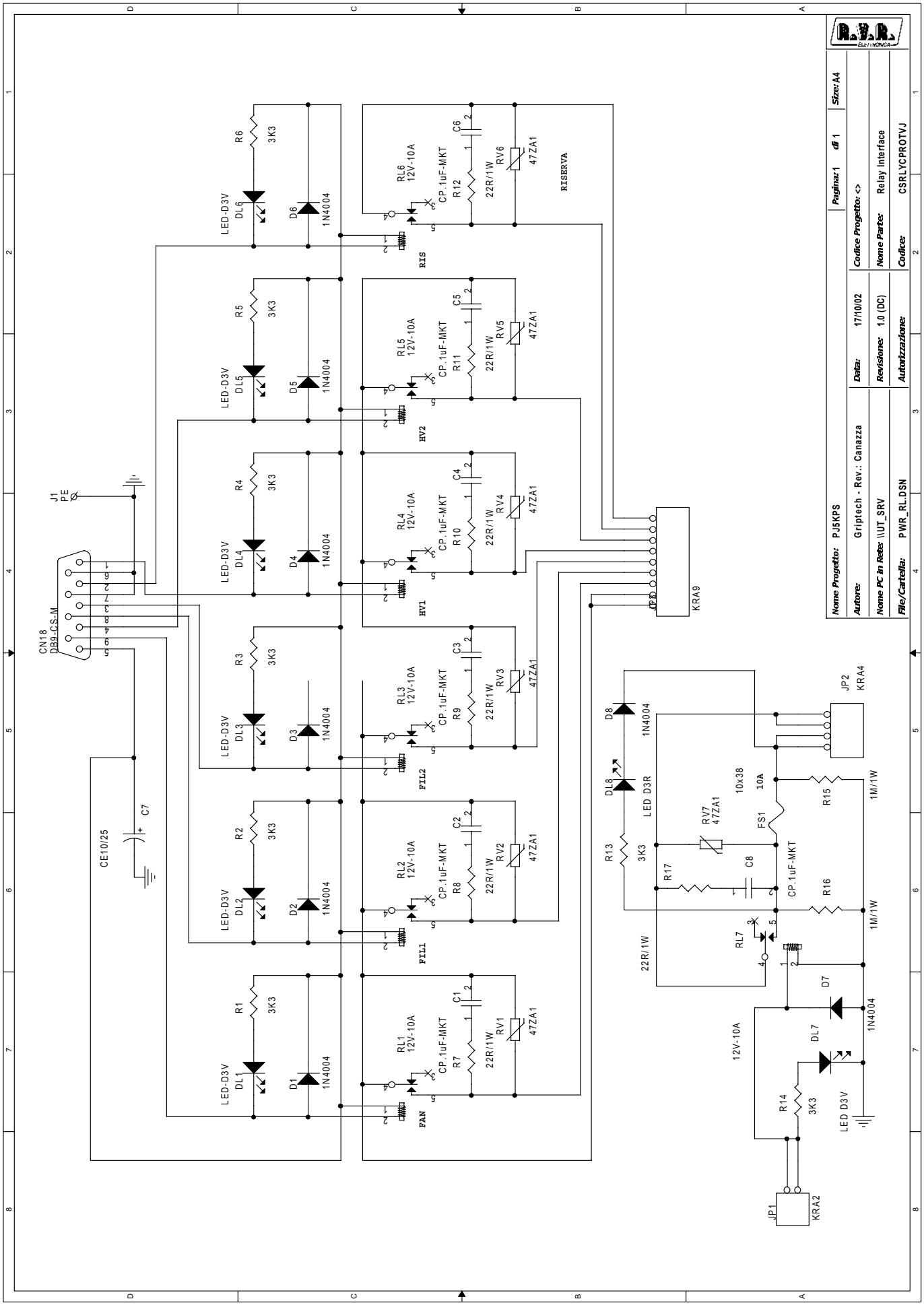
SWITCHING TRANFORMER FOR TRAY FANS

■ Block Diagram



6.3.3 Relay interface board (CSRLYCPROTVJ)

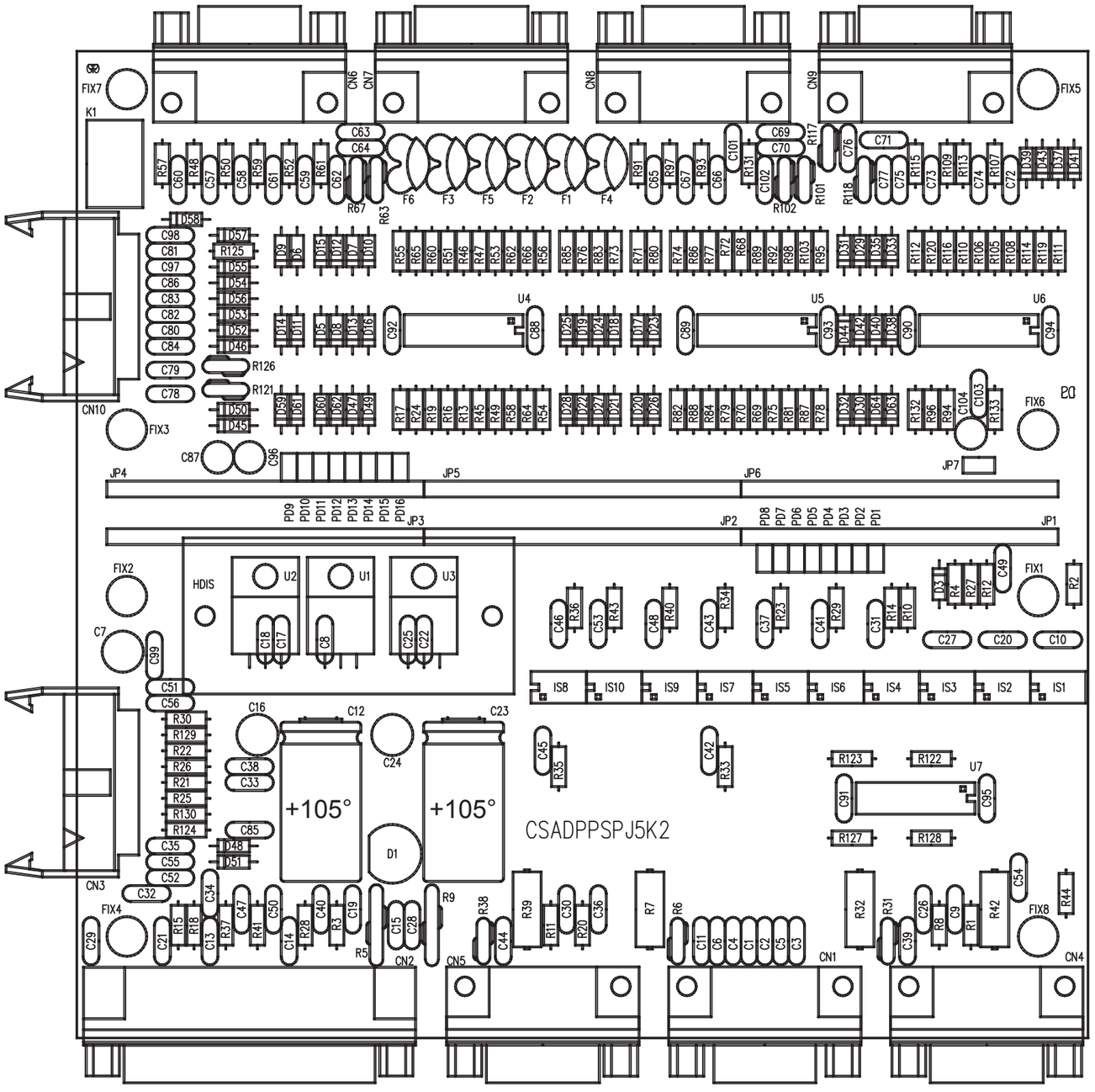



Nome Progetto: PJ5KPS
Autore: Griptech - Rev.: Canazza
Nome PC in Rete: \\UT_SRV
File/Cartella: PWR_RL.DSN
Data: 17/10/02
Revisione: 1.0 (DC)
Autorizzazione:
Pagina: 1 di 1
Size: A4
Codice Progetto: <>
Nome Parte: Relay Interface
Codice: CSRLYCPROTVJ
CN18 DB9-CS-M
J1 PE
C7 CE10/25
R1 R2 R3 R4 R5 R6 3K3
LED-D3V DL1 DL2 DL3 DL4 DL5 DL6
D1 D2 D3 D4 D5 D6 1N4004
RL1 RL2 RL3 RL4 RL5 RL6 12V-10A
C1 C2 C3 C4 C5 C6 CP.1uF-MKT
R7 R8 R9 R10 R11 R12 22R/1W
RV1 RV2 RV3 RV4 RV5 RV6 47ZA1
FAN FIL1 FIL2 HV1 HV2 RISERVA
KRA9
D8 1N4004
DL8 LED D3R
R13 3K3
RV7 47ZA1
R17
C8 CP.1uF-MKT
FS1 10x38 10A
R15 R16 1M/1W
22R/1W
RL7
JP2 KRA4
D7 1N4004
DL7 LED D3V
R14 3K3
12V-10A
JP1 KRA2

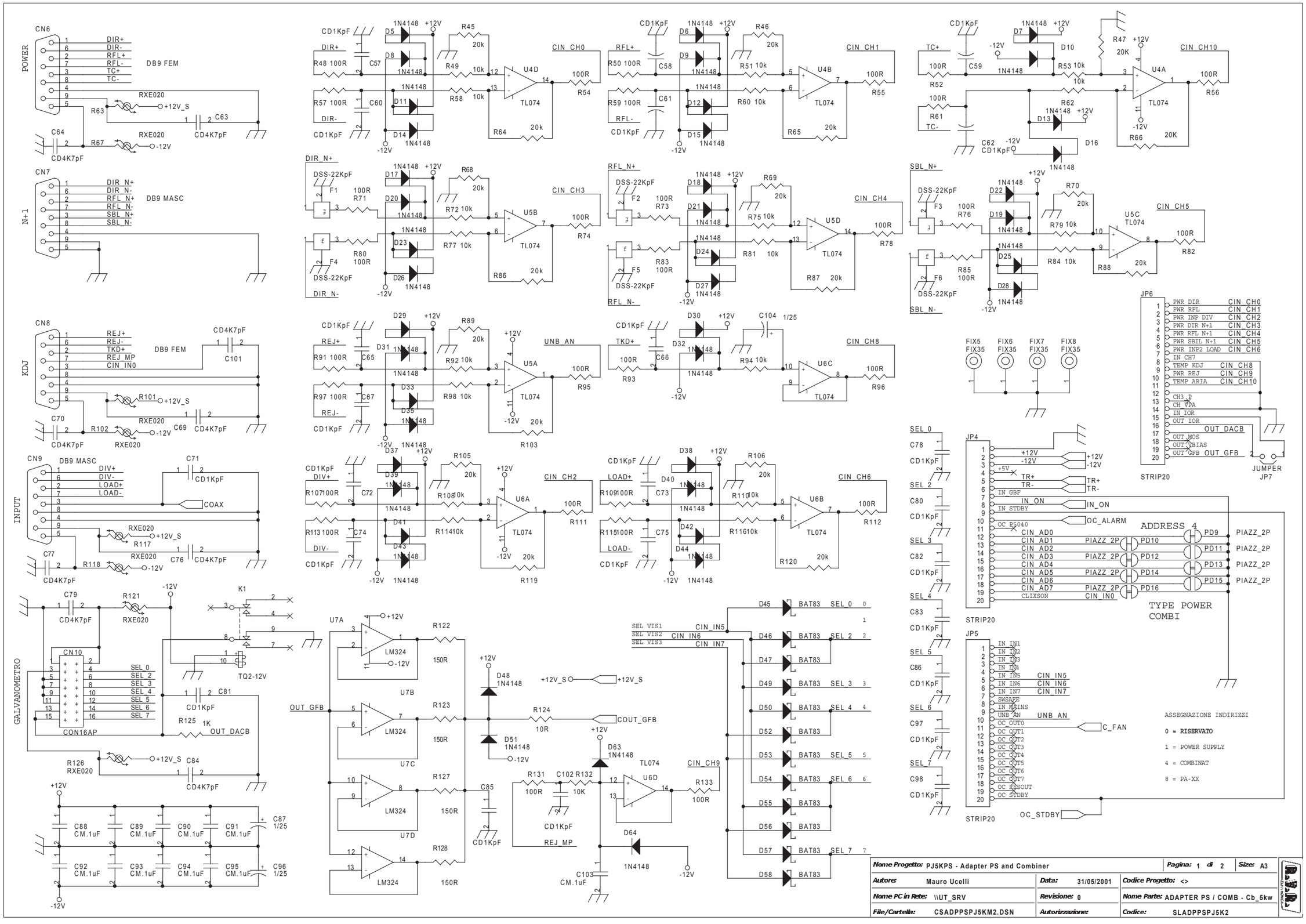
SLRLYCPROTVJ Bill Of Materials Page1

Item	Q.ty	Reference	Part
1	1	CN18	DB9-CS-M
2	7	C1, C2, C3, C4, C5, C6, C7	CE10/25
4	7	DL1, DL2, DL3, DL4, DL5, DL6, DL7	LED D3V
5	1	DL8	LED D3R
7	8	D1, D2, D3, D4, D5, D6, D7, D8	1N4004
8	1	FS1	10x38
9	1	JP1	KRA2
10	1	JP2	KRA4

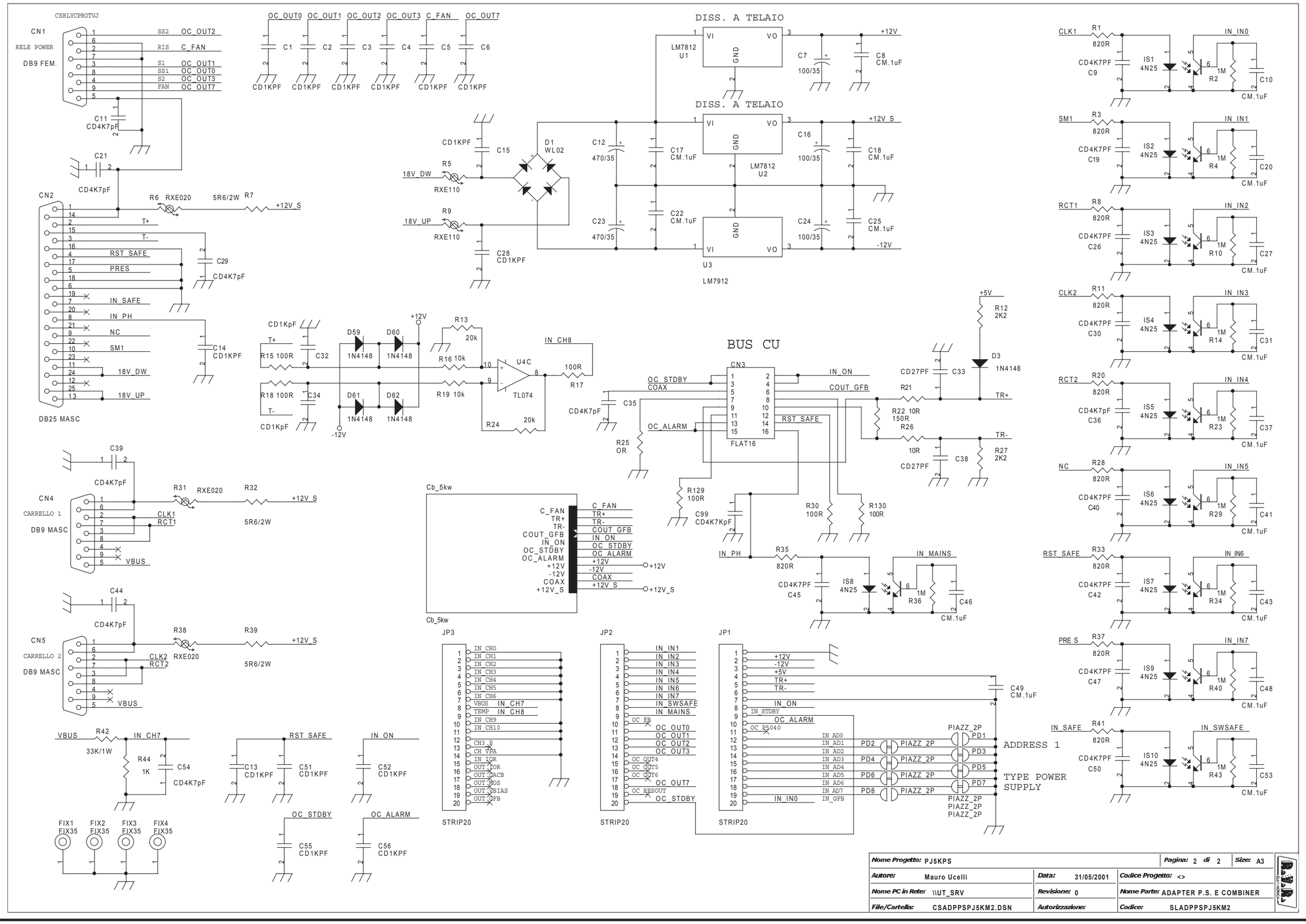
6.3.4 P.S. combiner adapter (SLADPPSPJ5K2)



Nome Progetto:	PJ5KPS - Adattatore Power Supply e Combiner			Pagina: 1 di 1	Size: A3
Autore:	Ucelli - Rev.: Canazza	Data:	08/10/2002	Codice Progetto:	
Nome PC in Rete:	\\UT_SRV	Revisione:	1.0 (DC)	Nome Parte:	Adapter PS e Comb
File/Cartella:	ADPPSP_2_LY.DWG	Autorizzazione:		Codice:	SLADPPSPJ5K2
Scala: <>	Materiale: <>	Trattamento:	<>	Profilo:	<>



Nome Progetto: PJ5KPS - Adapter PS and Combiner			Pagina: 1 di 2	Size: A3	
Autore: Mauro Ucelli		Data: 31/05/2001	Codice Progetto: <>		
Nome PC in Rete: \\UT_SRV		Revisione: 0	Nome Parte: ADAPTER PS / COMB - Cb_5kw		
File/Cartella: CSADPPSPJ5KM2.DSN		Autorizzazione:	Codice: SLADPPSPJ5K2		



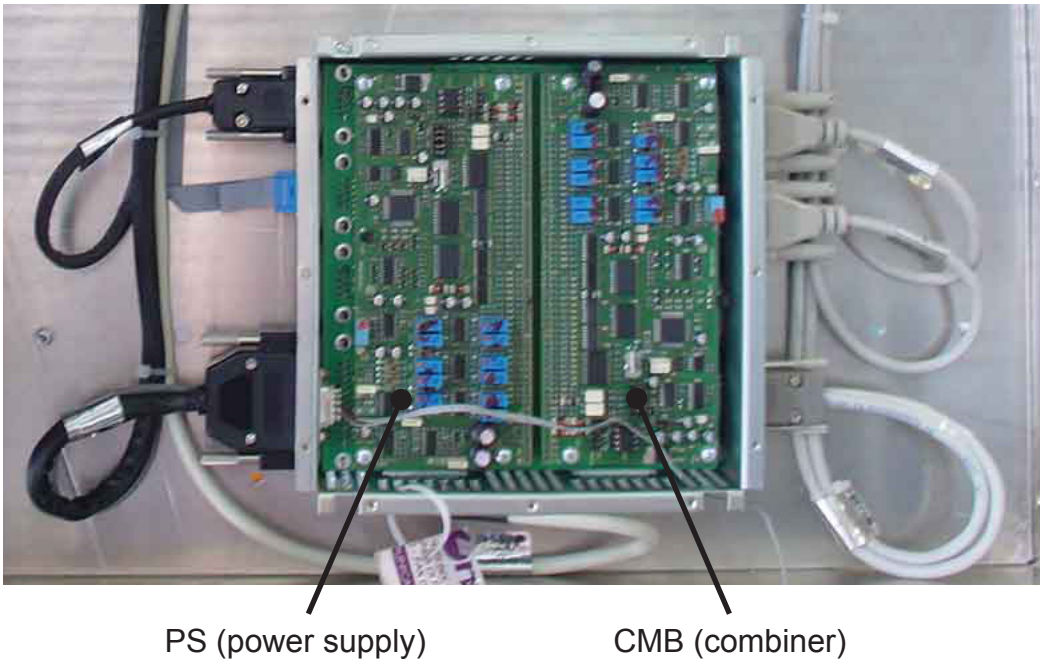
Nome Progetto: PJ5KPS		Pagina: 2 di 2	Size: A3
Autore: Mauro Ucelli	Data: 31/05/2001	Codice Progetto: <>	
Nome PC in Rete: \\UT_SRV	Revisione: 0	Nome Parte: ADAPTER P.S. E COMBINER	
File/Cartella: CSADPPSPJ5KM2.DSN	Autorizzazione:	Codice: SLADPPSPJ5KM2	

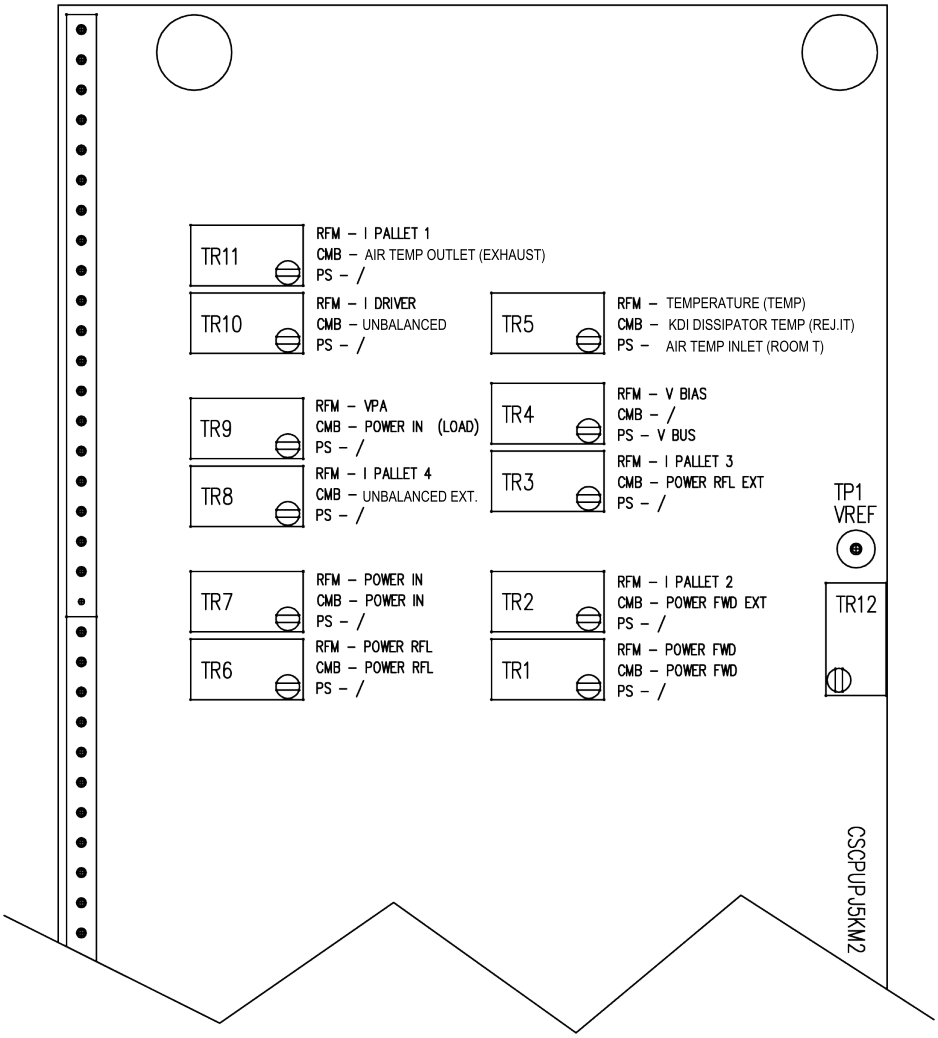
SLADPPSPJ5KM2 Bill Of Materials Page1

Item	Q.ty	Reference	Part
1	1	CN1	DB9 FEM.
2	1	CN2	DB25 MASC
3	1	CN3	FLAT16
4	4	CN4,CN5,CN7,CN9	DB9 MASC
5	2	CN6,CN8	DB9 FEM
6	1	CN10	CON16AP
7	38	C1,C2,C3,C4,C5,C6,C13, C14,C15,C28,C32,C51,C52, C55,C56,C57,C58,C59,C60, C61,C65,C66,C67,C71,C72, C73,C74,C75,C78,C80,C81, C82,C83,C85,C86,C97,C98, C102	CD1KPF
8	3	C7,C16,C24	100/35
9	25	C8,C10,C17,C18,C20,C22, C25,C27,C31,C37,C41,C43, C46,C48,C49,C53,C88,C89, C90,C91,C92,C93,C94,C95, C103	CM.1uF
10	26	C9,C11,C19,C21,C26,C29, C30,C35,C36,C39,C40,C42, C44,C45,C47,C50,C54,C63, C64,C69,C70,C76,C77,C79, C84,C101	CD4K7pF
11	2	C12,C23	470/35
12	2	C33,C38	CD27PF
13	3	K1,C34,C62	NC
14	3	C87,C96,C104	1/25
15	1	C99	CD4K7KpF
16	1	D1	WL02
17	47	D3,D5,D6,D7,D8,D9,D10, D11,D12,D13,D14,D15,D16, D17,D18,D19,D20,D21,D22, D23,D24,D25,D26,D27,D28, D29,D30,D31,D32,D33,D35, D37,D38,D39,D40,D41,D42, D43,D44,D48,D51,D59,D60, D61,D62,D63,D64	1N4148
18	12	D45,D46,D47,D49,D50,D52, D53,D54,D55,D56,D57,D58	BAT83
19	8	FIX1,FIX2,FIX3,FIX4,FIX5, FIX6,FIX7,FIX8	FIX35
20	6	F1,F2,F3,F4,F5,F6	DSS-22KpF
21	10	IS1,IS2,IS3,IS4,IS5,IS6, IS7,IS8,IS9,IS10	4N25
22	6	JP1,JP2,JP3,JP4,JP5,JP6	STRIP20
23	1	JP7	JUMPER
24	16	PD1,PD2,PD3,PD4,PD5,PD6, PD7,PD8,PD9,PD10,PD11, PD12,PD13,PD14,PD15,PD16	PIAZZ_2P
25	10	R1,R3,R8,R11,R20,R28,R33, R35,R37,R41	820R
26	10	R2,R4,R10,R14,R23,R29, R34,R36,R40,R43	1M
27	2	R5,R9	RXE110
28	11	R6,R31,R38,R63,R67,R101, R102,R117,R118,R121,R126	RXE020
29	3	R7,R32,R39	5R6/2W
30	2	R27,R12	2K2
31	20	R13,R24,R45,R46,R47,R64, R65,R66,R68,R69,R70,R86, R87,R88,R89,R103,R105, R106,R119,R120	20k
32	37	R15,R17,R18,R30,R48,R50, R52,R54,R55,R56,R57,R59, R61,R71,R73,R74,R76,R78, R80,R82,R83,R85,R91,R93, R95,R96,R97,R107,R109, R111,R112,R113,R115,R129, R130,R131,R133	100R
33	22	R16,R19,R49,R51,R53,R58, R60,R62,R72,R75,R77,R79, R81,R84,R92,R94,R98,R108, R110,R114,R116,R132	10k
34	3	R21,R26,R124	10R
35	1	R22	180R
36	1	R25	OR
37	1	R42	33K/1W
38	2	R125,R44	1K
39	4	R122,R123,R127,R128	150R
40	2	U1,U2	LM7812
41	1	U3	LM7912
42	3	U4,U5,U6	TL074
43	1	U7	LM324

6.3.4.1 P.S. combiner trimmer

In the PJ10KPS-CA are present microcontrol boards, one for each 2.2 kW module, one for the control of the power supply and one for the control of the combiner. The boards are identical, but in each the trimmers have diverged meaning. In figure, “RFM” refers to the RF module, “PS” to the power supply and “CMB” to the combiner. TR12 is set so that VREF is 3.3 V.





6.4 Parallel interface (opz.)(CSINTREMPJ5K)

A parallel-type interface is mounted on the top of the PJ10KPS-CA, in which the different signals are available through terminal blocks (Figure 6.4.1). This interface is connected to the CU from which it receives the different signals and to which the eventual commands are forwarded.
The card contains digital inputs, digital outputs and analog outputs. Among the digital inputs, a “copy” of all the possible orders that can be given locally to the unit by using the buttons of the control unit are displayed.

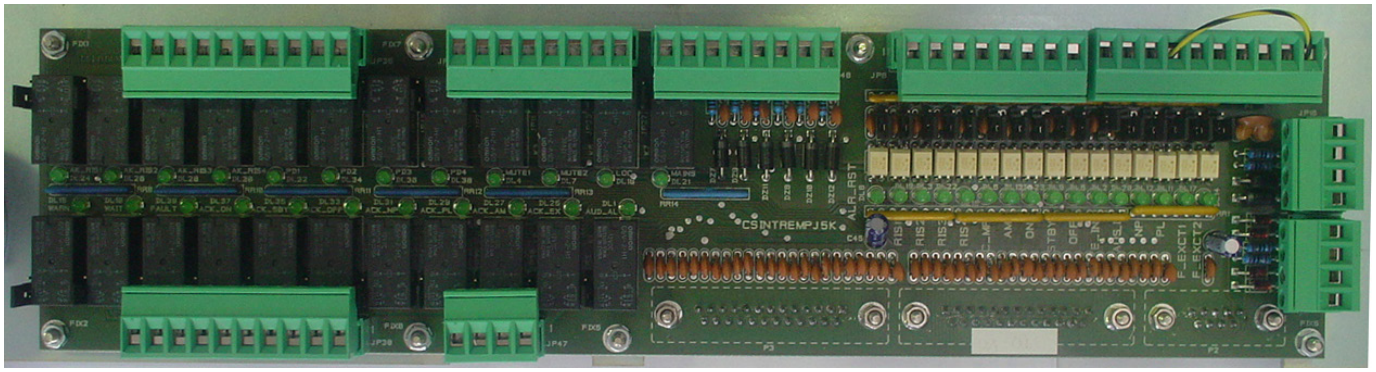
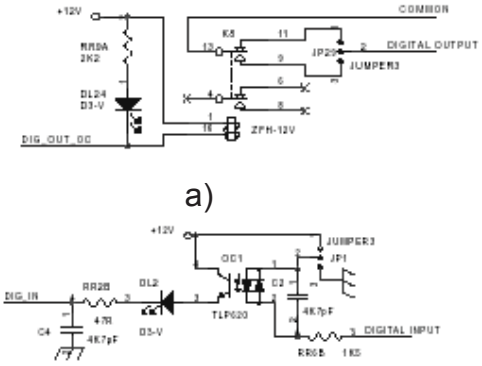


Figure 6.4.1

The digital outputs supply information concerning the status of the PJ0KPS-CA.
The analogue outputs enable the remote control of the most important parameters, for example the forward and reflected power.
This interface was designed for a maximum configurability and adaptability to the tel metry systems to which it may be connected. For example, each digital input can be configured through a jumper in order to be “active” when grounded or when connected to a supply source between +12V and +24V.
The scheme of one generic digital input is shown in Figure 6.4.2 b). Please pay attention to the anti-parallel type optocouplers, so that if the jumper is closed between the pins 1 and 2, by grounding the DIGITAL INPUT, the input is active. On the contrary by closing 2 and 3, the input is active when the DIGITAL INPUT is connected to a positive voltage.
Each digital output can be configured individually as “Normally open “ or “Normally closed “ (NO or NC). In Figure 6.4.2 a) the scheme of a generic digital output is shown. Please note that when the jumper is closed between 1 and 2, the output is normally short-circuited with the common pin, while in the other case the circuit is normally open.
It is important to remember that the different commands can be given to the unit through the parallel interface only if the Local/Remote selector situated on the front panel is on the “Remote” position.



a)

b)

Figure 6.4.2

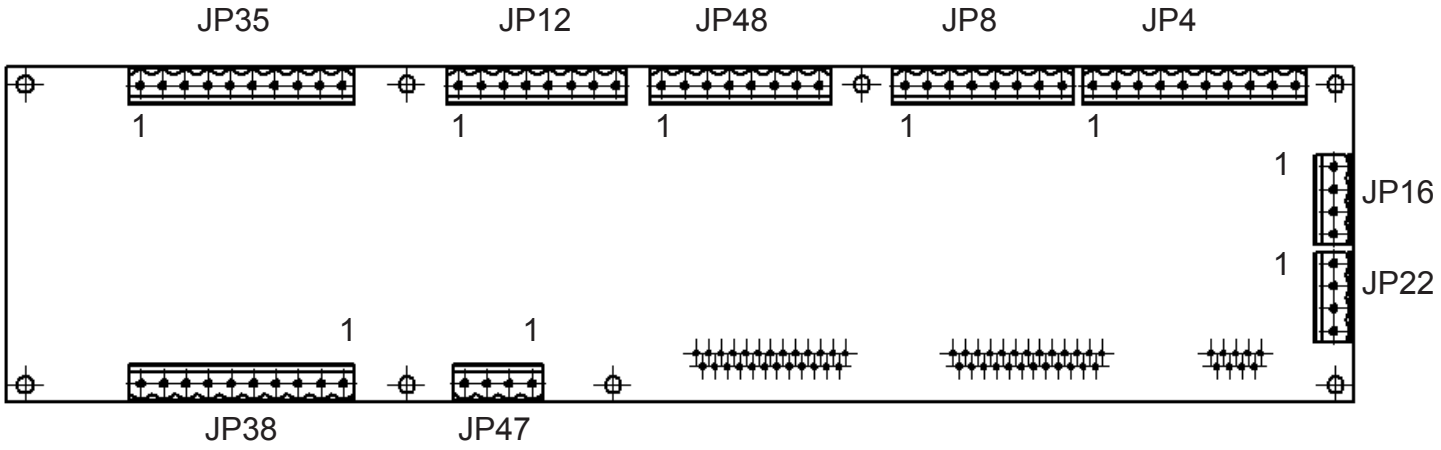


Figure 6.4.3

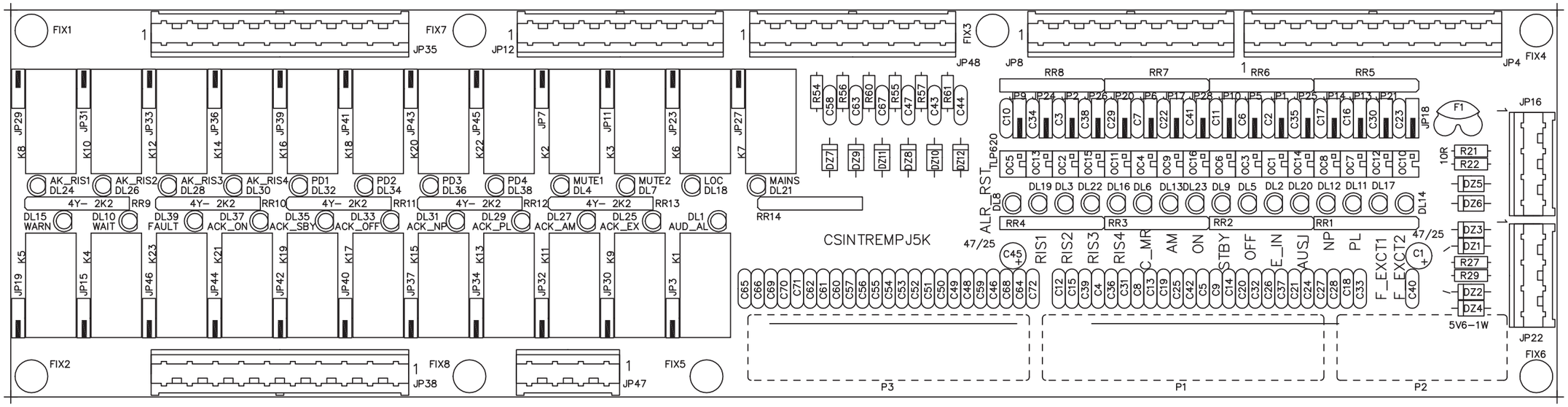
The following table describes the function of each jumper of the parallel interface. The first column indicates the identifying number of the jumper as shown on Figure 6.4.3, the second indicates the name of the signal and the third column describes its function.

Clamp	Type	Name	Description
JP4/1	In	ON	Corresponds to the ON button of the control unit
JP4/2	In	STDBY	Corresponds to the STDBY button of the control unit
JP4/3	In	OFF	Corresponds to the OFF button of the control unit
JP4/4	In	EXT INH	External inhibition jumper. It is a “N.C.” type jumper, which means that it must be active for the PJ10KPS-CA to work. Upon delivery, this terminal is closed to ground by a jumper.
JP4/5	In	AUX INH	Auxiliary external inhibition jumper. It is a “N.O.” type jumper,which means that it must be not active for the PJ10KPS-CA to work. It is “auxiliary” because even if nothing is connected to it the PJ10KPS-CA works normally.
JP4/6	In	NOM PWR	Corresponds to the NOMINAL POWER button of the control unit

JP4/7	In	LOW PWR	Corresponds to the REDUCED POWER button of the control unit
JP4/8	In	AUDIO ALARM EXC. 1	Audio alarm of exciter 1. This input, when active, indicates an alarm on exciter 1. If the PJ10KPS-CA is in automatic changeover modality, if the exciter 1 is on air and if this signal remains active for a time lag equivalent to the time setted in the Settings menu at line Exc. Wait time, the changeover procedure between the exciters will be started.
JP4/9	In	AUDIO ALARM EXC. 2	Same as AUDIO ALARM EXC. 1 for exciter 2.
JP4/10	/	GND	Grounding contact.
JP8/1	In	ALARM RESET	Corresponds to the ALARM RESET button on the control unit
JP8/2	In	RESRV. 1	Reserve 1 input. When this input is active, the failure is registered by the software in the Alarms menu. For example it can be connected to a switch that indicates that the door of the station is open or to a sensor of a power reserve of an electric generator. In this way, by consulting the menus of the unit, it is possible to trace the moment at which (time and date) the failure occurred.
JP8/3	In	RESRV. 2	Same as JP8/2
JP8/4	In	RESRV. 3	Same as JP8/2
JP8/5	In	RESRV. 4	Same as JP8/2
JP8/6	In	EXCITER CHANGEOVER CMD	This command launches the changeover procedure between the exciters. It has the same function as when you press the OK button when selecting line On air exciter in the menu Exciters. In order to launch the changeover between the exciters through this command, the manual changeover modality should be formerly selected through the correspondent button on the control unit or through the JP8/7 jumper, having however the unit in “Remote” modality.
JP8/7	In	EXCITER CHANGEOVER	Corresponds to ther EXCITER CHANGEOVER button of the control unit
JP8/8	/	GND	Ground
JP16/1	Out	+12V dc	Power source. A maximum of 100 mA can be absorbed between this jumper and JP16/2. This power source can be used if the user wants to enter the comands following a positive logic (high voltage - active comand)
JP16/2	Out	+12V dc	Same as JP16/1
JP16/3	/	GND	Ground
JP16/4	/	GND	Ground
JP22/1	I/O	TX/RX +	Bus RS 485. Please note that this serial port is operational only when the unit is in “Remote” modality.

JP22/2	I/O	TX/RX -	Bus RS 485
JP22/3	/	LINE TRM	Line termination for bus RS 485
JP22/4	/	LINE TRM	Line termination for bus RS 485
JP48/1	/	GND	Ground
JP48/2	/	GND	Ground
JP48/3	Out	FWD PWR	Forward power. Analogical output, 3.9V for 5000W
JP48/4	Out	RFL PWR	Reflect power. Analogical output, 3.9V for 1200W
JP48/5	Out	OUT AIR TEMP	Temperature of the air at the output of the chimney. Analogical output, 0V for -50°C, 3.9V for 100°C
JP48/6	Out	V FAN	Supply voltage of the fans.
JP48/7	Out	EFF.	General efficiency. Analogical output, 3.9V for 100%, 0V for 0%.
JP48/8	Out	OUT DAC 6	Reserved for future applications.
JP12/1	Out	CMN MUTE 1	Common contact MUTE 1 (see JP12/2).
JP12/2	Out	MUTE 1	MUTE excitater 1. Digital output, active when exciter 1 is inhibited by the control unit. Like all the digital outputs on the parallele interface, it can be configurated through jumper as normally open or normally closed. This output has a common contact dedicated to this function (JP12/1).
JP12/3	Out	CMN MUTE 2	Common contact MUTE 2 (see JP12/4).
JP12/4	Out	MUTE 2	MUTE exciter 2. Digital output, active when exciter 2 is inhibited by the control unit. This output has a common contact dedicated to this function (JP12/3).
JP12/5	Out	CMN LOCAL	Common contact LOCAL (see JP12/6).
JP12/6	Out	LOCAL	LOCAL/REMOTE status. Digital output, active when the TX10000U-KLC is setted in local modality. This output has a common contact dedicated to this function (JP12/5).
JP12/7	Out	CMN MAINS	Common contact MAINS (see JP12/8).
JP12/8	Out	MAINS	MAINS alarm, active when are present problems on the alimentation
JP47/1	Out	AUDIO ALARM	“AUDIO” alarm (see JP4/8 and JP4/9). This output is active when the on air exciter is in audio alarm status. This output has a common contact dedicated to this function (JP47/2).
JP47/2	Out	CMN AUDIO ALARM	Common contact AUDIO ALARM (see JP47/1).
JP47/3	Out	CMN RL3	Common contact shared from the outputs JP38/1-10.
JP47/4	Out	CMN RL3	Parallel contact with JP47/3.
JP35/1	Out	RESRV. 1	Reserve 1. Digitale output, active when the INPUT RESERVE 1 input (JP8/2) is active. The common contact of this output is RL4 (JP35/5)
JP35/2	Out	RESRV. 2	Same as JP35/1, corresponds to INPUT RESERVE 2. The common contact of this output is RL4 (JP35 / 5)
JP35/3	Out	RESRV. 3	Same as JP35/1, corresponds to INPUT RESERVE 3. The common contact of this output is RL4 (JP35 / 5)

JP35/4	Out	RESRV. 4	Same as JP35/1, corresponds to INPUT RESERVE 4. The common contact of this output RL4 (JP35/5)
JP35/5	Out	CMN RL4	Common contact shared between different digital outputs (JP35/1-4)
JP35/6	Out	SET1.	Digital output, active when the parameter SET1 is active (see menu Settings). The common contact of this output RL5 (JP35/10).
JP35/7	Out	SET2.	Same as JP36/6, corresponds to SET2. The common contact of this output is RL5 (JP35/10).
JP35/8	Out	SET3.	Same as JP36/6, corresponds to SET3. The common contact of this output is RL5 (JP35/10).
JP35/9	Out	SET4.	Similar to JP36/6, related to SET4. The common contact of this output is the RL5 (JP35/10).
JP35/10	Out	CMN RL5	Common contact shared between the different digital output (JP35/6-9)
JP38/1	Out	EXC. ON AIR	Digital output, active when the exciter 1 is on air, and not active when the exciter 2 is on air. common contact of this output is the RL3 (JP47/3).
JP38/2	Out	AUTO/MAN	Digital output, active when the PJ10KPS-CA is in changeover mode as regards the exciters. The common contact of this output is RL3 (JP47/3).
JP38/3	Out	LOWER POWER	Digital output, active when the PJ10KPS-CA is set for the lower power level. Common contact of this output is the RL3 (JP47/3).
JP38/4	Out	NOMINAL POWER	Digital output, active when the PJ10KPS-CA is set for the nominal power level. common contact of this output is the RL3 (JP47/3).
JP38/5	Out	OFF	Digital output, active when the PJ10KPS-CA is set for the lower power level. The common contact of this output is the RL3 (JP47/3).
JP38/6	Out	STDBY	Digital output, active when the PJ10KPS-CA is set for the lower power level. The common contact of this output is the RL3 (JP47/3).
JP38/7	Out	ON	Digital output, active when the PJ10KPS-CA is set on ON mode. The common contact of this output is the RL3 (JP47/3).
JP38/8	Out	FAULT	Digital output, active when the PJ10KPS-CA is set on FAULT mode. The common contact of this output is the RL3 (JP47/3).
JP38/9	Out	WAIT	Digital output, active when the PJ10KPS-CA is set on WAIT mode. The common contact of this output is the RL3 (JP47/3).
JP38/10	Out	WARNING	Digital output, active when the PJ10KPS-CA is set on WARNING mode. The common contact of this output is the RL3 (JP47/3).



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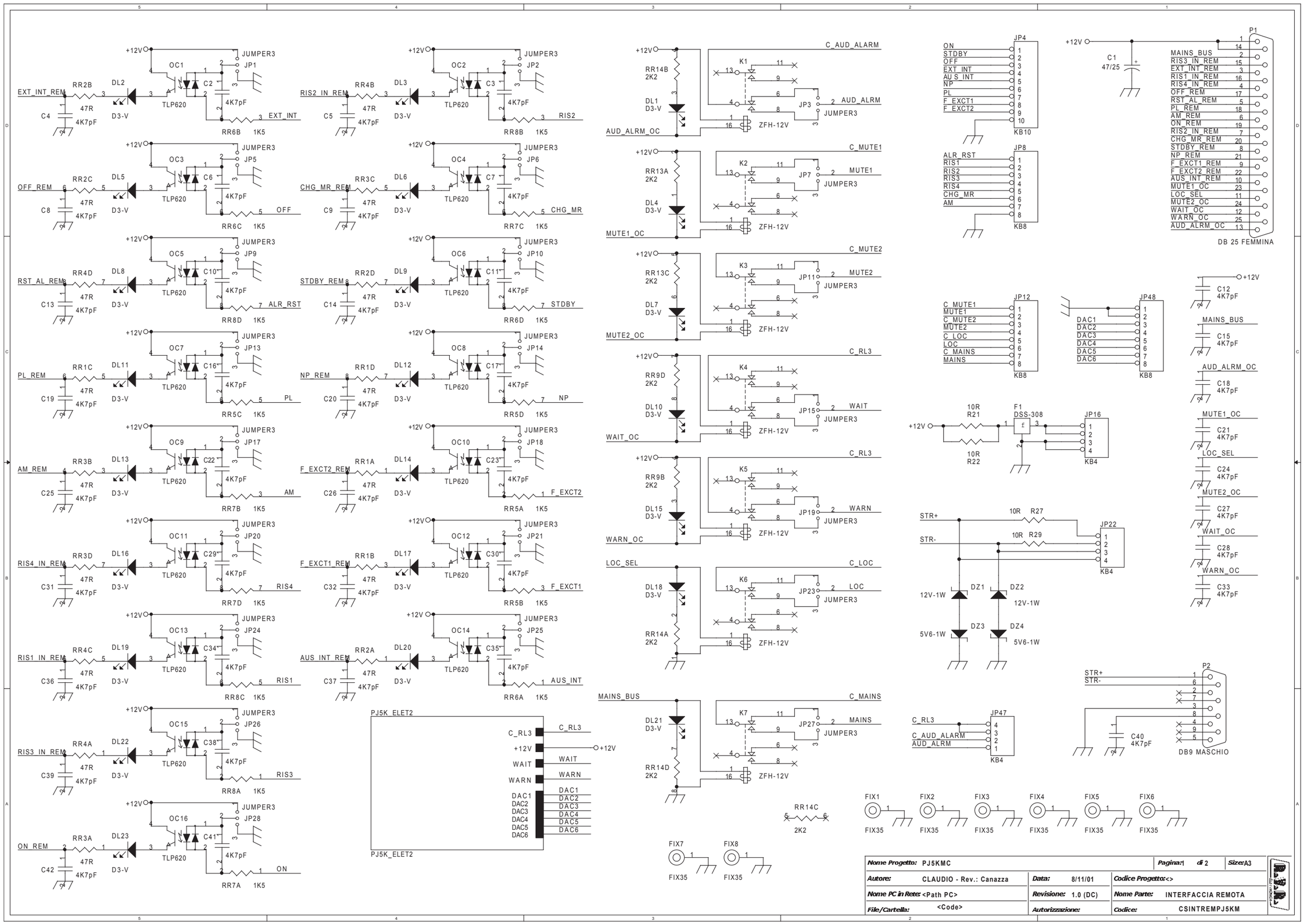
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JP1
C2
4K7pF
TLP620
EXT_INT_REM
RR2B
DL2
D3-V
C4
47R
4K7pF
RR6B 1K5
EXT_INT
OC2
JP2
RIS2_IN_REM
RR4B
DL3
C3
C5
RR8B 1K5
RIS2
OC3
JP5
OFF_REM
RR2C
DL5
C6
C8
RR6C 1K5
OFF
OC4
JP6
CHG_MR_REM
RR3C
DL6
C7
C9
RR7C 1K5
CHG_MR
OC5
JP9
RST_AL_REM
RR4D
DL8
C10
C13
RR8D 1K5
ALR_RST
OC6
JP10
STDBY_REM
RR2D
DL9
C11
C14
RR6D 1K5
STDBY
OC7
JP13
PL_REM
RR1C
DL11
C16
C19
RR5C 1K5
PL
OC8
JP14
NP_REM
RR1D
DL12
C17
C20
RR5D 1K5
NP
OC9
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AM_REM
RR3B
DL13
C22
C25
RR7B 1K5
AM
OC10
JP18
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RR1A
DL14
C23
C26
RR5A 1K5
F_EXCT2
OC11
JP20
RIS4_IN_REM
RR3D
DL16
C29
C31
RR7D 1K5
RIS4
OC12
JP21
F_EXCT1_REM
RR1B
DL17
C30
C32
RR5B 1K5
F_EXCT1
OC13
JP24
RIS1_IN_REM
RR4C
DL19
C34
C36
RR8C 1K5
RIS1
OC14
JP25
AUS_INT_REM
RR2A
DL20
C35
C37
RR6A 1K5
AUS_INT
OC15
JP26
RIS3_IN_REM
RR4A
DL22
C38
C39
RR8A 1K5
RIS3
OC16
JP28
ON_REM
RR3A
DL23
C41
C42
RR7A 1K5
ON
TLP620
47R
4K7pF
D3-V
PJ5K_ELET2
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WAIT
WARN
DAC1
DAC2
DAC3
DAC4
DAC5
DAC6
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DL1 D3-V
AUD_ALARM_OC
C_AUD_ALARM
K1
JP3
AUD_ALARM
ZFH-12V
RR13A 2K2
DL4 D3-V
MUTE1_OC
C_MUTE1
K2
JP7
MUTE1
RR13C 2K2
DL7 D3-V
MUTE2_OC
C_MUTE2
K3
JP11
MUTE2
RR9D 2K2
DL10 D3-V
WAIT_OC
C_RL3
K4
JP15
WAIT
RR9B 2K2
DL15 D3-V
WARN_OC
C_RL3
K5
JP19
WARN
LOC_SEL
DL18 D3-V
RR14A 2K2
C_LOC
K6
JP23
LOC
MAINS_BUS
DL21 D3-V
RR14D 2K2
C_MAINS
K7
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MAINS
RR14C
2K2
FIX7
FIX8
FIX35
JP4
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STDBY
OFF
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AUS_INT
NP
PL
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F_EXCT2
KB10
JP8
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RIS1
RIS2
RIS3
RIS4
CHG_MR
AM
KB8
P1
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RIS3_IN_REM
EXT_INT_REM
RIS1_IN_REM
RIS4_IN_REM
OFF_REM
RST_AL_REM
PL_REM
AM_REM
ON_REM
RIS2_IN_REM
CHG_MR_REM
STDBY_REM
NP_REM
F_EXCT1_REM
F_EXCT2_REM
AUS_INT_REM
MUTE1_OC
LOC_SEL
MUTE2_OC
WAIT_OC
WARN_OC
AUD_ALARM_OC
DB 25 FEMMINA
C1
47/25
JP12
C_MUTE1
MUTE1
C_MUTE2
MUTE2
C_LOC
LOC
C_MAINS
MAINS
JP48
DAC1
DAC2
DAC3
DAC4
DAC5
DAC6
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4K7pF
C15
C18
C21
C24
C27
C28
C33
10R
R21
R22
F1
DSS-308
JP16
JP22
R27
R29
STR+
STR-
DZ1
DZ2
DZ3
DZ4
12V-1W
5V6-1W
JP47
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C_AUD_ALARM
AUD_ALRM
P2
DB9 MASCHIO
C40
FIX1
FIX2
FIX3
FIX4
FIX5
FIX6
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Pagina: 1 di 2
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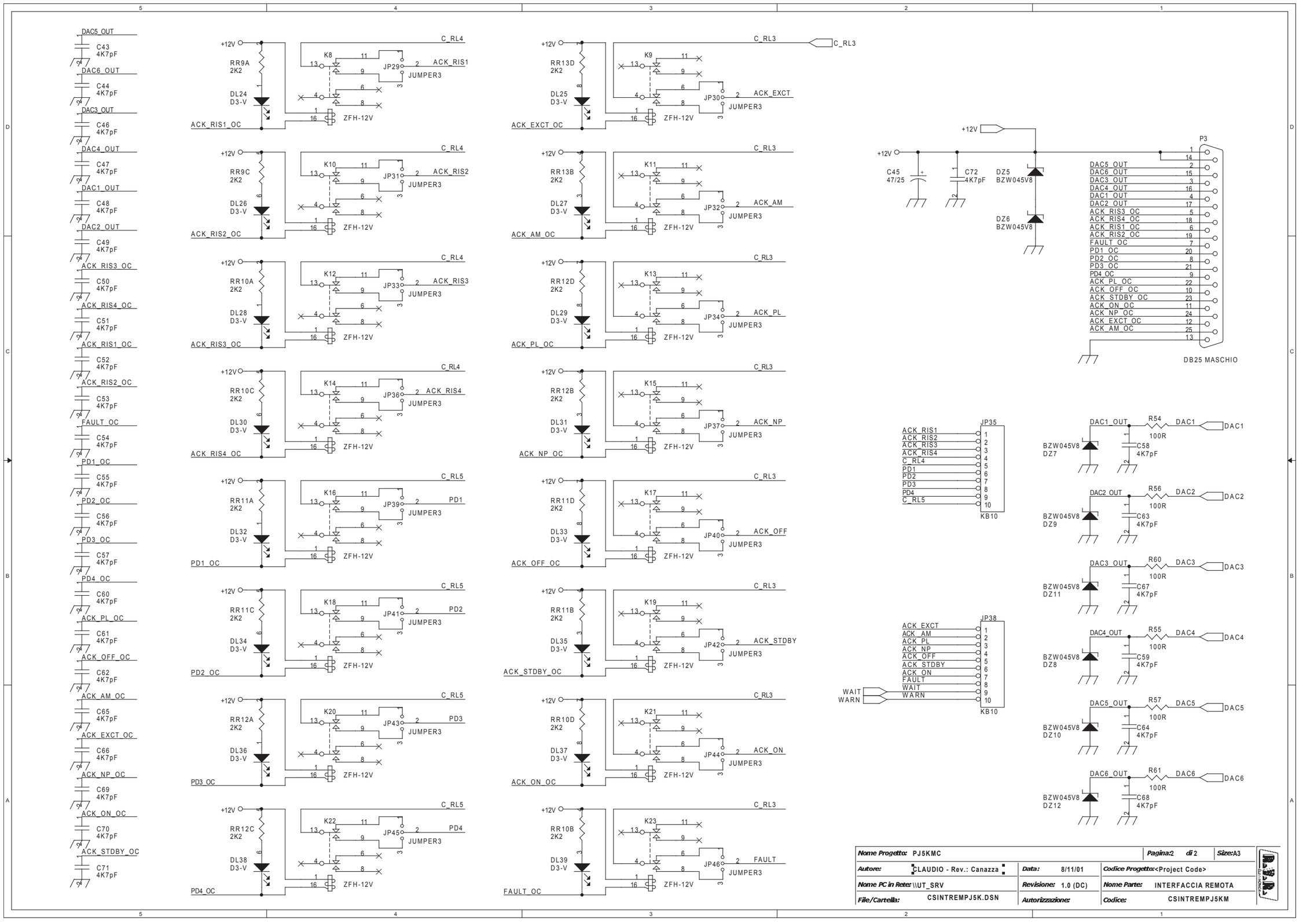
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DAC6_OUT
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DAC3_OUT
C46 4K7pF
DAC4_OUT
C47 4K7pF
DAC1_OUT
C48 4K7pF
DAC2_OUT
C49 4K7pF
ACK_RIS3_OC
C50 4K7pF
ACK_RIS4_OC
C51 4K7pF
ACK_RIS1_OC
C52 4K7pF
ACK_RIS2_OC
C53 4K7pF
FAULT_OC
C54 4K7pF
PD1_OC
C55 4K7pF
PD2_OC
C56 4K7pF
PD3_OC
C57 4K7pF
PD4_OC
C60 4K7pF
ACK_PL_OC
C61 4K7pF
ACK_OFF_OC
C62 4K7pF
ACK_AM_OC
C65 4K7pF
ACK_EXCT_OC
C66 4K7pF
ACK_NP_OC
C69 4K7pF
ACK_ON_OC
C70 4K7pF
ACK_STDBY_OC
C71 4K7pF
+12V
RR9A 2K2
DL24 D3-V
ACK_RIS1_OC
K8
JP29
JUMPER3
ACK_RIS1
C_RL4
ZFH-12V
RR9C 2K2
DL26 D3-V
ACK_RIS2_OC
K10
JP31
ACK_RIS2
RR10A 2K2
DL28 D3-V
ACK_RIS3_OC
K12
JP33
ACK_RIS3
RR10C 2K2
DL30 D3-V
ACK_RIS4_OC
K14
JP36
ACK_RIS4
RR11A 2K2
DL32 D3-V
PD1_OC
K16
JP39
PD1
C_RL5
RR11C 2K2
DL34 D3-V
PD2_OC
K18
JP41
PD2
RR12A 2K2
DL36 D3-V
PD3_OC
K20
JP43
PD3
RR12C 2K2
DL38 D3-V
PD4_OC
K22
JP45
PD4
RR13D 2K2
DL25 D3-V
ACK_EXCT_OC
K9
JP30
ACK_EXCT
C_RL3
RR13B 2K2
DL27 D3-V
ACK_AM_OC
K11
JP32
ACK_AM
RR12D 2K2
DL29 D3-V
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K13
JP34
ACK_PL
RR12B 2K2
DL31 D3-V
ACK_NP_OC
K15
JP37
ACK_NP
RR11D 2K2
DL33 D3-V
ACK_OFF_OC
K17
JP40
ACK_OFF
RR11B 2K2
DL35 D3-V
ACK_STDBY_OC
K19
JP42
ACK_STDBY
RR10D 2K2
DL37 D3-V
ACK_ON_OC
K21
JP44
ACK_ON
RR10B 2K2
DL39 D3-V
FAULT_OC
K23
JP46
FAULT
ZFH-12V
JUMPER3
C45 47/25
C72 4K7pF
DZ5 BZW045V8
DZ6 BZW045V8
P3
DB25 MASCHIO
JP35
KB10
JP38
WAIT
WARN
DAC1_OUT
R54 100R
DAC1
BZW045V8 DZ7
C58 4K7pF
DAC2_OUT
R56 100R
DAC2
BZW045V8 DZ9
C63 4K7pF
DAC3_OUT
R60 100R
DAC3
BZW045V8 DZ11
C67 4K7pF
DAC4_OUT
R55 100R
DAC4
BZW045V8 DZ8
C59 4K7pF
DAC5_OUT
R57 100R
DAC5
BZW045V8 DZ10
C64 4K7pF
DAC6_OUT
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DAC6
BZW045V8 DZ12
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File/Cartella: CSINTREMPJ5K.DSN
Autorizzazione:
Codice: CSINTREMPJ5KM

SLINTREMPJ5KM Bill Of Materials Page1

Item	Q.ty	Reference	Part
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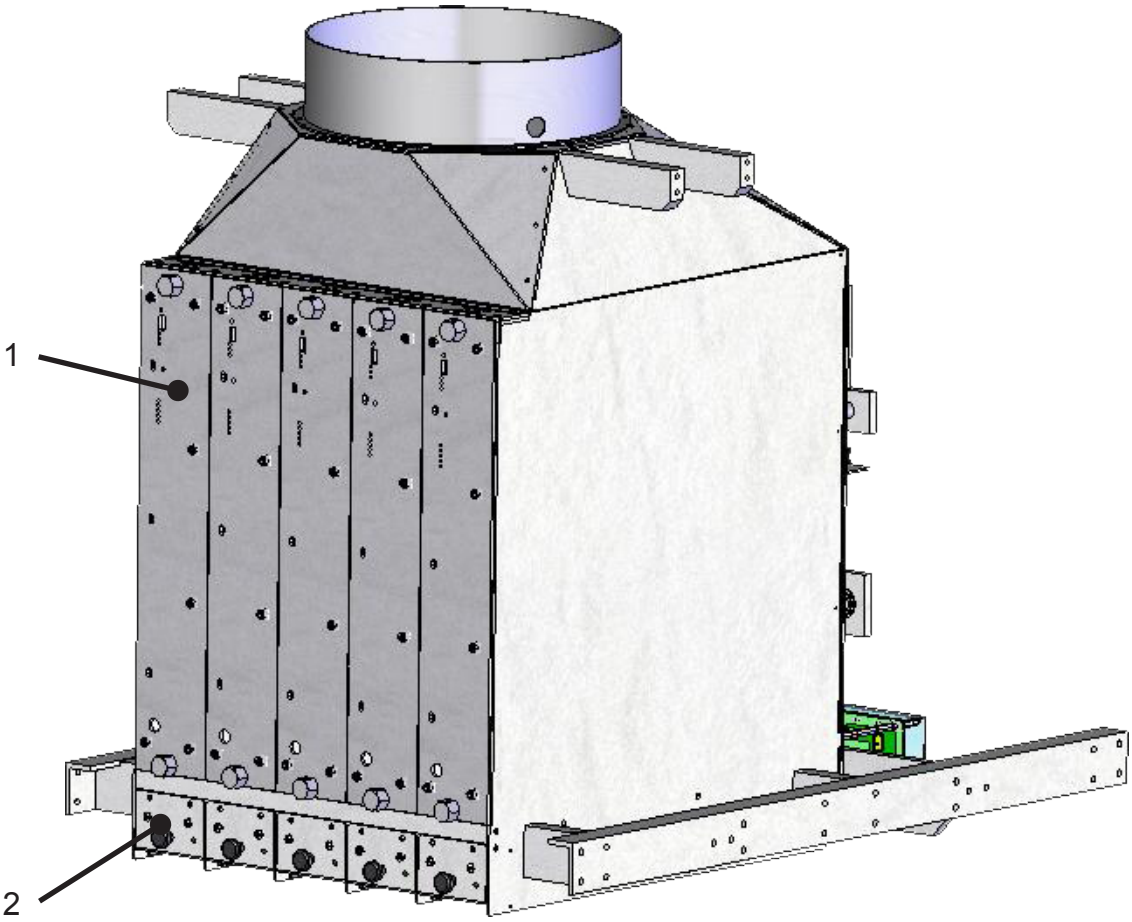
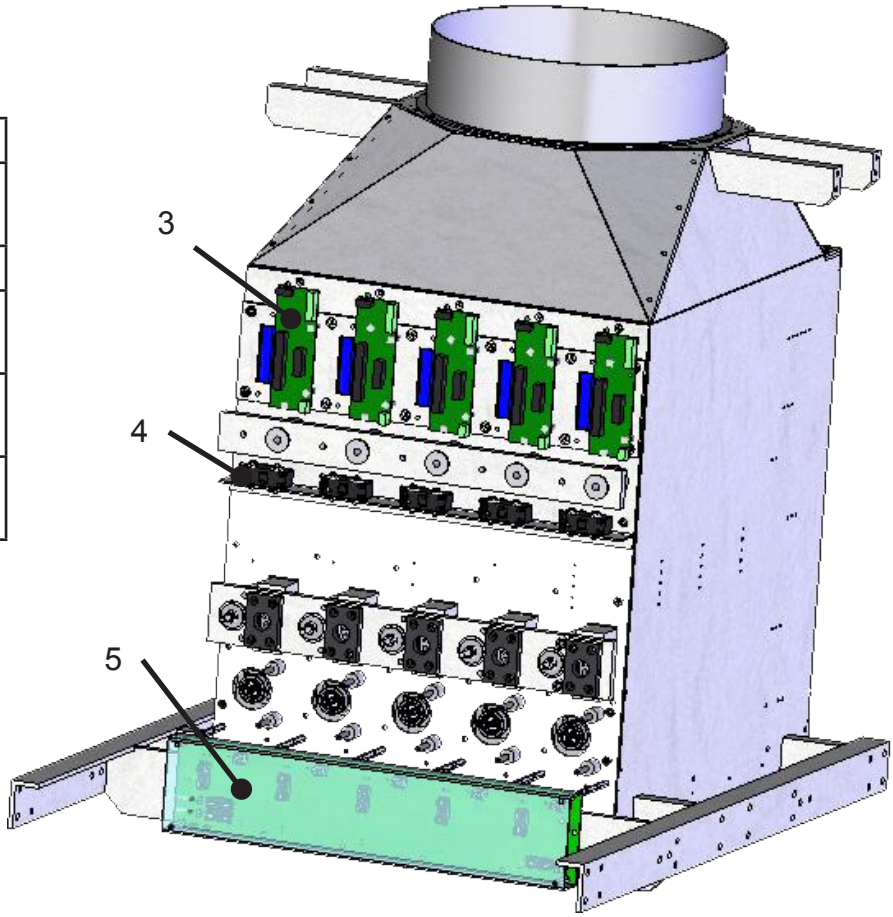
3	39	DL1,DL2,DL3,DL4,DL5,DL6, DL7,DL8,DL9,DL10,DL11, DL12,DL13,DL14,DL15,DL16, DL17,DL18,DL19,DL20,DL21, DL22,DL23,DL24,DL25,DL26, DL27,DL28,DL29,DL30,DL31, DL32,DL33,DL34,DL35,DL36, DL37,DL38,DL39	D3-V
4	2	DZ2,DZ1	12V-1W
5	2	DZ4,DZ3	5V6-1W
6	8	DZ5,DZ6,DZ7,DZ8,DZ9,DZ10, DZ11,DZ12	BZW045V8
7	8	FIX1,FIX2,FIX3,FIX4,FIX5, FIX6,FIX7,FIX8	FIX35
8	1	F1	DSS-308
9	39	JP1,JP2,JP3,JP5,JP6,JP7, JP9,JP10,JP11,JP13,JP14, JP15,JP17,JP18,JP19,JP20, JP21,JP23,JP24,JP25,JP26, JP27,JP28,JP29,JP30,JP31, JP32,JP33,JP34,JP36,JP37, JP39,JP40,JP41,JP42,JP43, JP44,JP45,JP46	JUMPER3
10	3	JP4,JP35,JP38	KB10
11	3	JP8,JP12,JP48	KB8
12	3	JP16,JP22,JP47	KB4
13	23	K1,K2,K3,K4,K5,K6,K7,K8, K9,K10,K11,K12,K13,K14, K15,K16,K17,K18,K19,K20, K21,K22,K23	ZFH-12V
14	16	OC1,OC2,OC3,OC4,OC5,OC6, OC7,OC8,OC9,OC10,OC11, OC12,OC13,OC14,OC15,OC16	TLP620
15	1	P1	DB 25 FEMMINA
16	1	P2	DB9 MASCHIO
17	1	P3	DB25 MASCHIO
18	4	RR1,RR2,RR3,RR4	47R
19	4	RR5,RR6,RR7,RR8	1K5
20	6	RR9,RR10,RR11,RR12,RR13, RR14	2K2
21	4	R21,R22,R27,R29	10R
22	6	R54,R55,R56,R57,R60,R61	100R

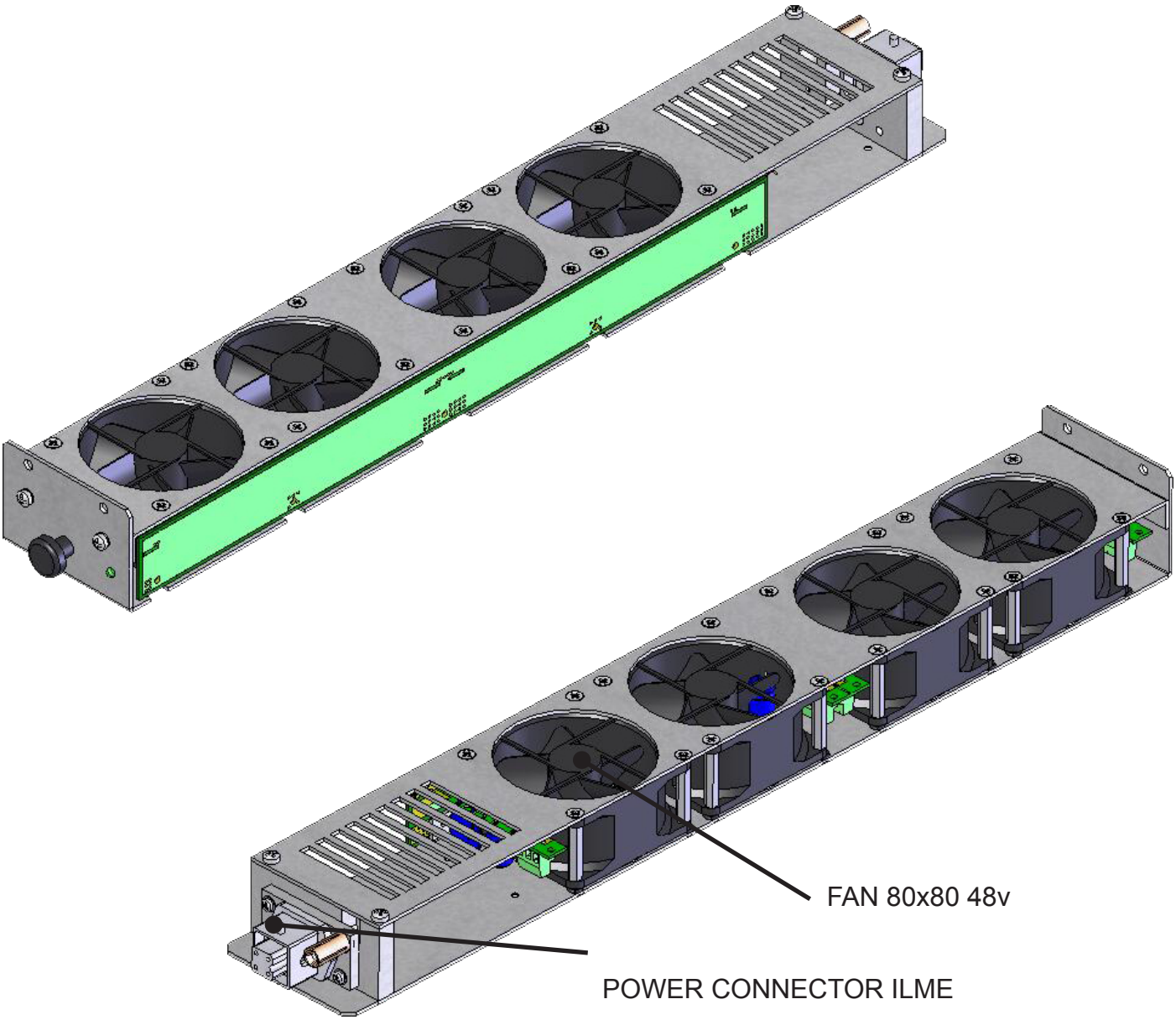
6.5 Module box



N°	Description	Chapter
1	RF module (N° 1 from left)	6.2
2	Tray fans	6.5.1
3	RF module I/O interface	6.5.2
4	Presence module switch	/
5	Power supply board tray fans	6.5.3

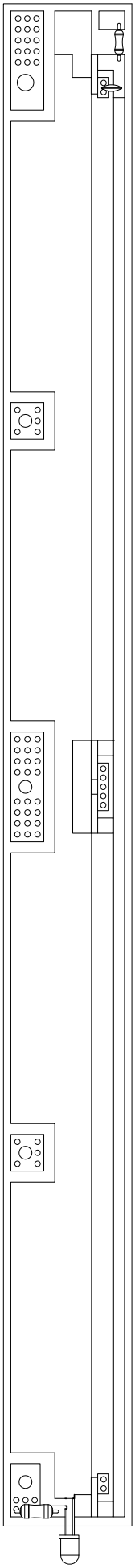


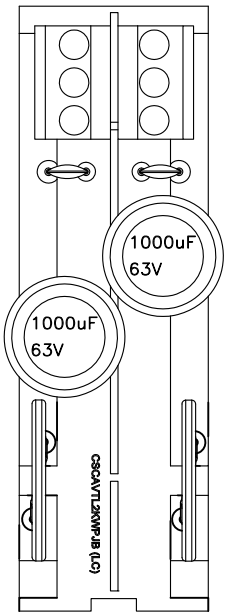
6.5.1 Tray fans (CASVTLMPJ10KCV)

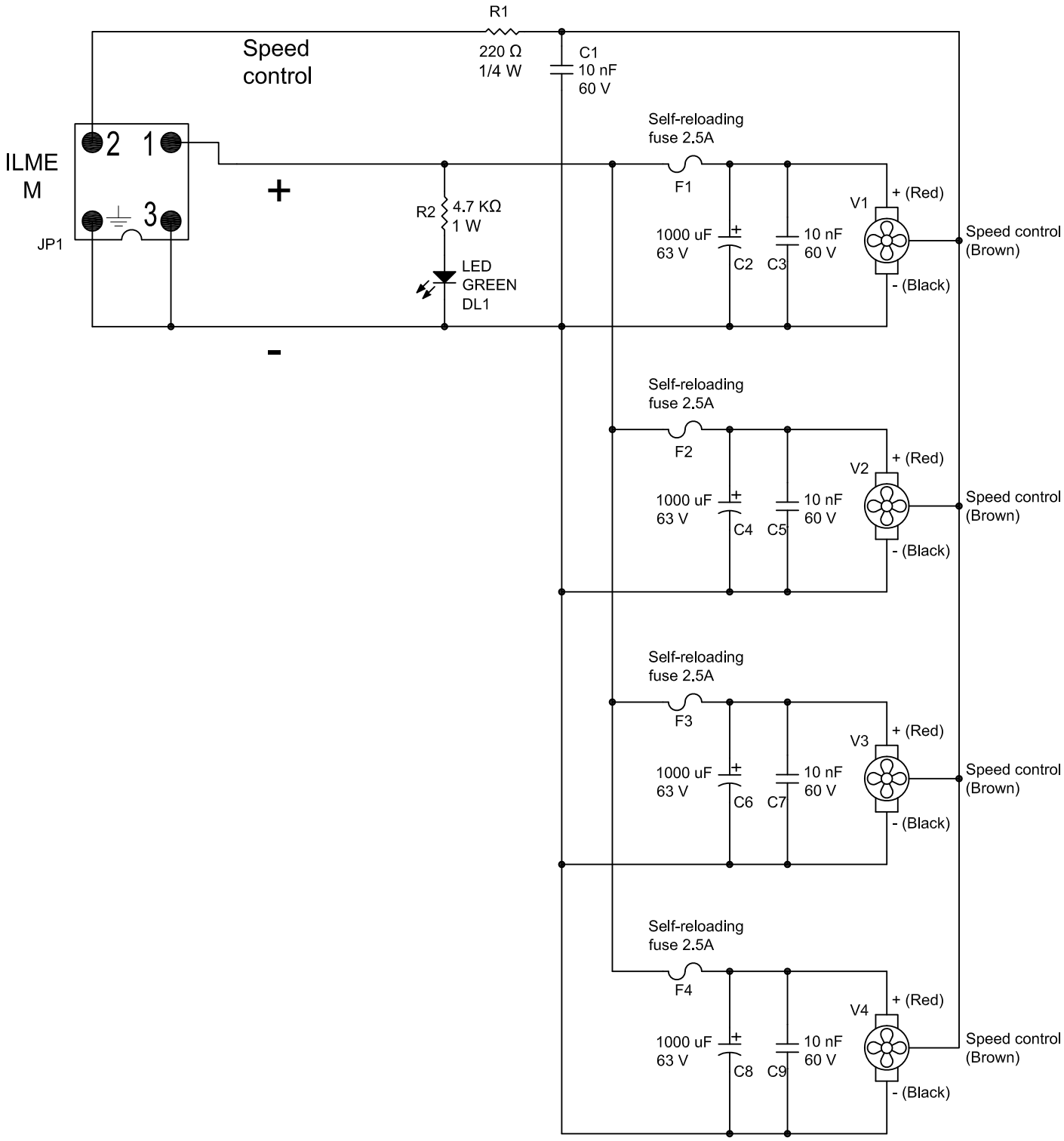


Pinout ilme male power supply

Pin	Cable color	Description
1	Red	+ (48V DC)
2	Purple	Speed control
3	Black	- (0 V)
GND	Black	- (0 V)



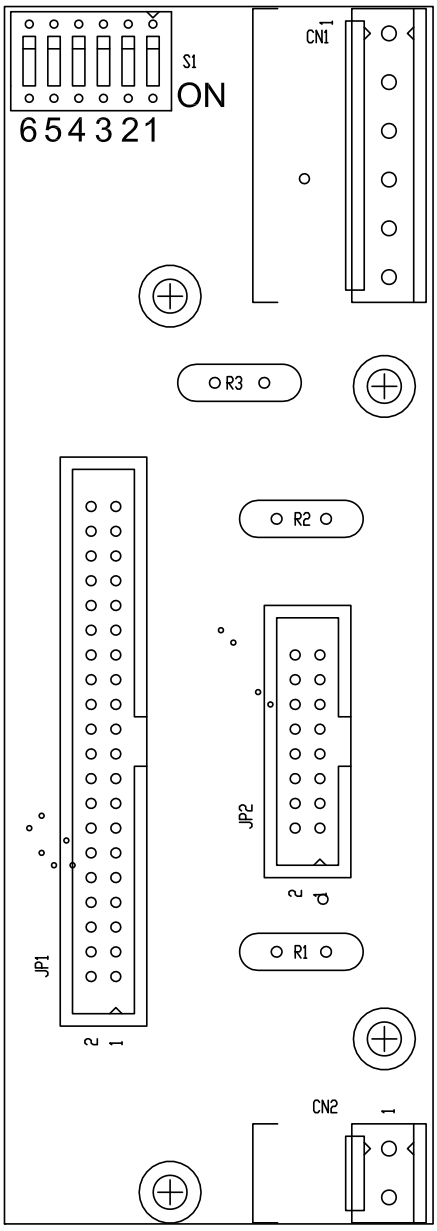

1000uF
63V
1000uF
63V



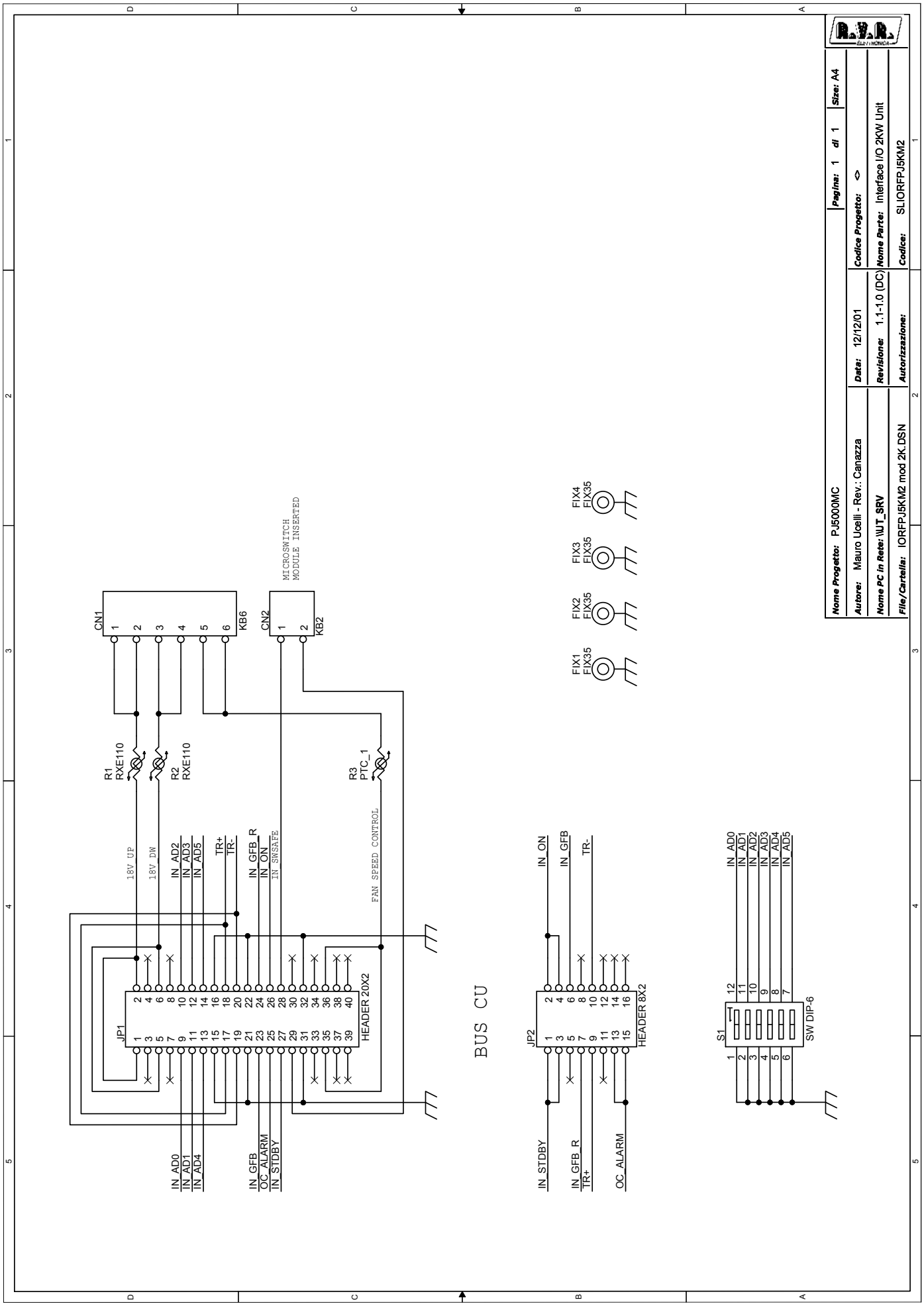
CSALVTL2KWPJA/CSALVTL2KWPJB - Bill of material

Item	Qty	Reference	Part	Description
1	1	JP1	/	Conn. Ilme 4 poli maschio + supporto
2	1	R1	220 ohm	Resistenza 1/4W
3	1	R2	4,7 kohm	Resistenza 1W
4	1	DL1	Led verde	Diodo led 5mm
5	5	C1,C3,C5,C7,C9	100nF 60V	Condensatore a disco
6	4	C2,C4,C6,C8	1000uF 63V	Condensatore elettr.
7	4	V1,V2,V3,V4		Ventola sanyo/ebm papst 80x80 48V
8	4	F1,F2,F3,F4	250V 2,5A	Fusibile autoripristinante
9	4	/	/	Morsetto verde 3 poli a saldare

6.5.2 RF module I/O interface (SLIORFPJ5KM2)



Nome Progetto:	PJ5KPS - Interfaccia I/O modulo RF			Pagina: 1 di 1	Size: A4
Autore:	Ucelli - Rev.: Canazza	Data:	14/10/2002	Codice Progetto:	<>
Nome PC in Rete:	\\UT_SRV	Revisione:	2 - 1.0 (DC)	Nome Parte:	Interfaccia I/O modulo RF
File/Cartella:	CSIORFPJ5KM2.DWG	Autorizzazione:		Codice:	SLIORFPJ5KM2
Scala: 1:1	Materiale: <>	Trattamento: <>		Profilo: <>	

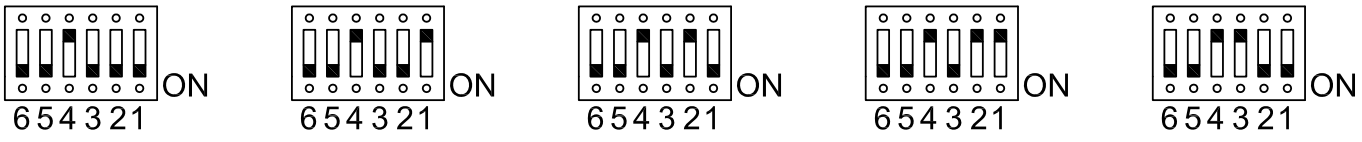

Nome Progetto: PJ5000MC
Pagina: 1 di 1
Size: A4
Autore: Mauro Ucelli - Rev.: Canazza
Data: 12/12/01
Codice Progetto: <>
Nome PC in Rete: \WT_SRV
Revisione: 1.1-1.0 (DC)
Nome Parte: Interface I/O 2KW Unit
File/Cartella: IORFPJ5KM2 mod 2K.DSN
Autorizzazione:
Codice: SLIORFPJ5KM2
CN1
KB6
CN2
KB2
MICROSWITCH
MODULE INSERTED
R1
RXE110
R2
RXE110
R3
PTC_1
FIX1
FIX35
FIX2
FIX35
FIX3
FIX35
FIX4
FIX35
18V UP
18V DW
IN_AD2
IN_AD3
IN_AD5
TR+
TR-
IN_GFB_R
IN_ON
IN_SWSAFE
FAN SPEED CONTROL
JP1
HEADER 20X2
BUS CU
JP2
HEADER 8X2
IN_ON
IN_GFB
TR-
IN_STDBY
IN_GFB_R
TR+
OC_ALARM
S1
SW DIP-6
IN_AD0
IN_AD1
IN_AD2
IN_AD3
IN_AD4
IN_AD5
IN_AD0
IN_AD1
IN_AD4
IN_GFB
OC_ALARM
IN_STDBY

CSIORFPJ5KM2 Bill Of Materials Page1

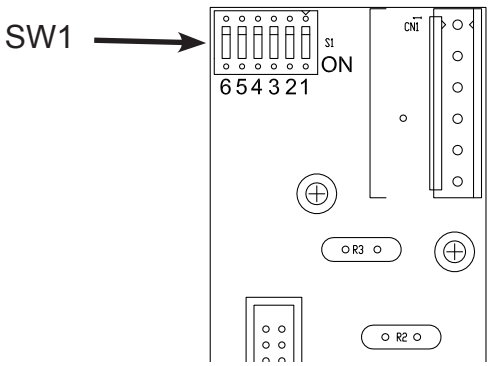
Item	Q.ty	Reference	Part
1	1	CN1	KB6
2	1	CN2	KB2
3	4	FIX1,FIX2,FIX3,FIX4	FIX35
4	1	JP1	HEADER
5	1	JP2	HEADER
6	2	R2,R1	RXE110
7	1	R3	PTC_1
8	1	S1	SW DIP-6

6.5.2.1 RF module address

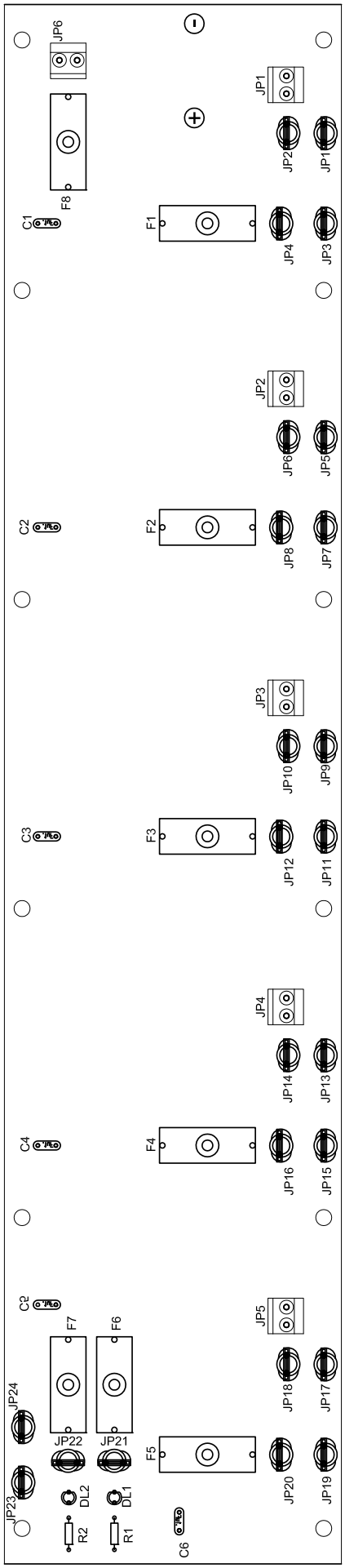
The address assigned to the module is mailed by a dip-switch on the interface board (SW1).
In figure are brought back the configurations assigned to the different settings.
The RF module 1 (that more to left looking at the machine from the front) have address 8, the 2 has address 9 and so on until at 12. The other addresses are reserved for future uses.

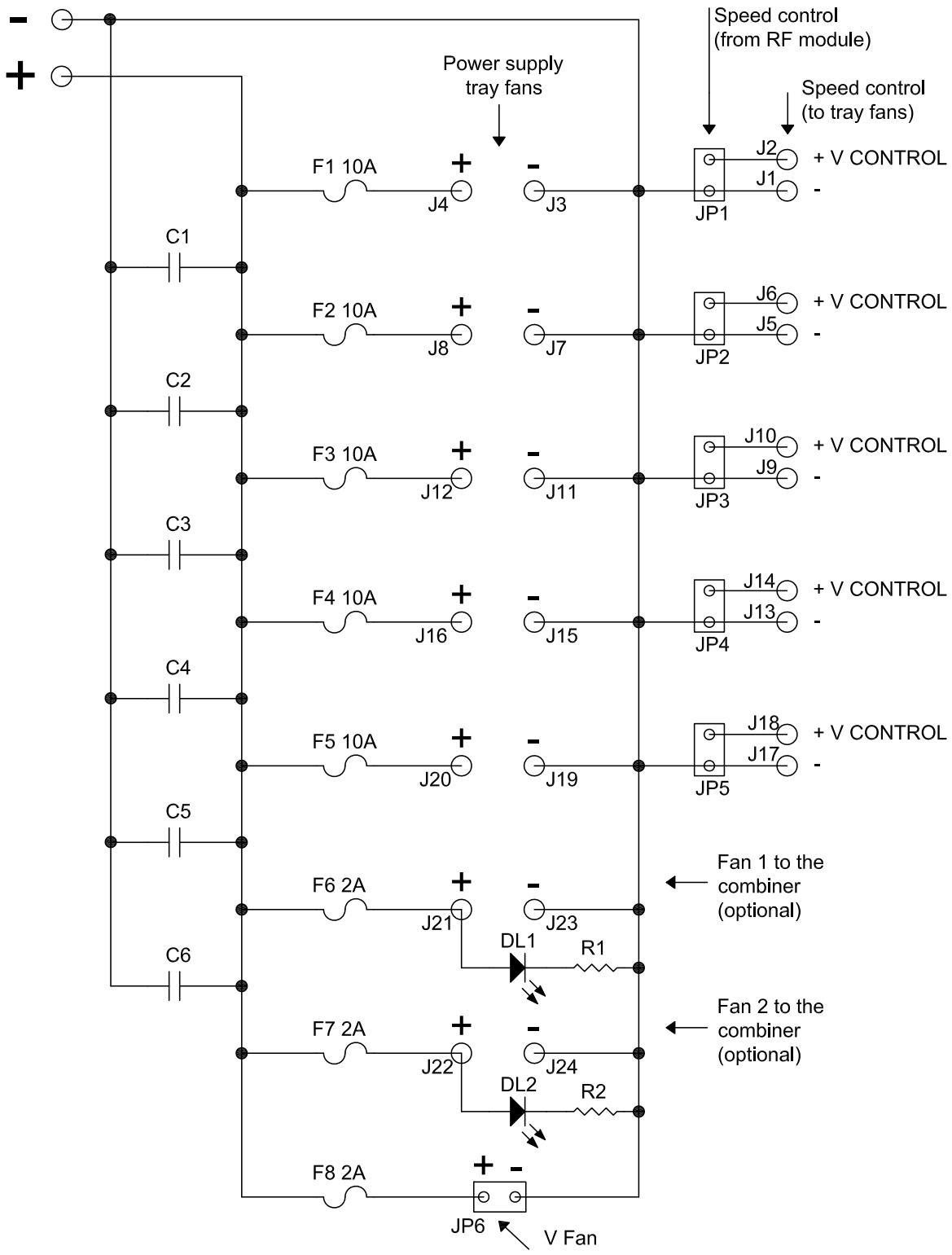


Module 1 Address 8 | Module 2 Address 9 | Module 3 Address 10 | Module 4 Address11 | Module 5 Address 12



6.5.3 Power supply board tray fans (CSALVTL2KWPJ)

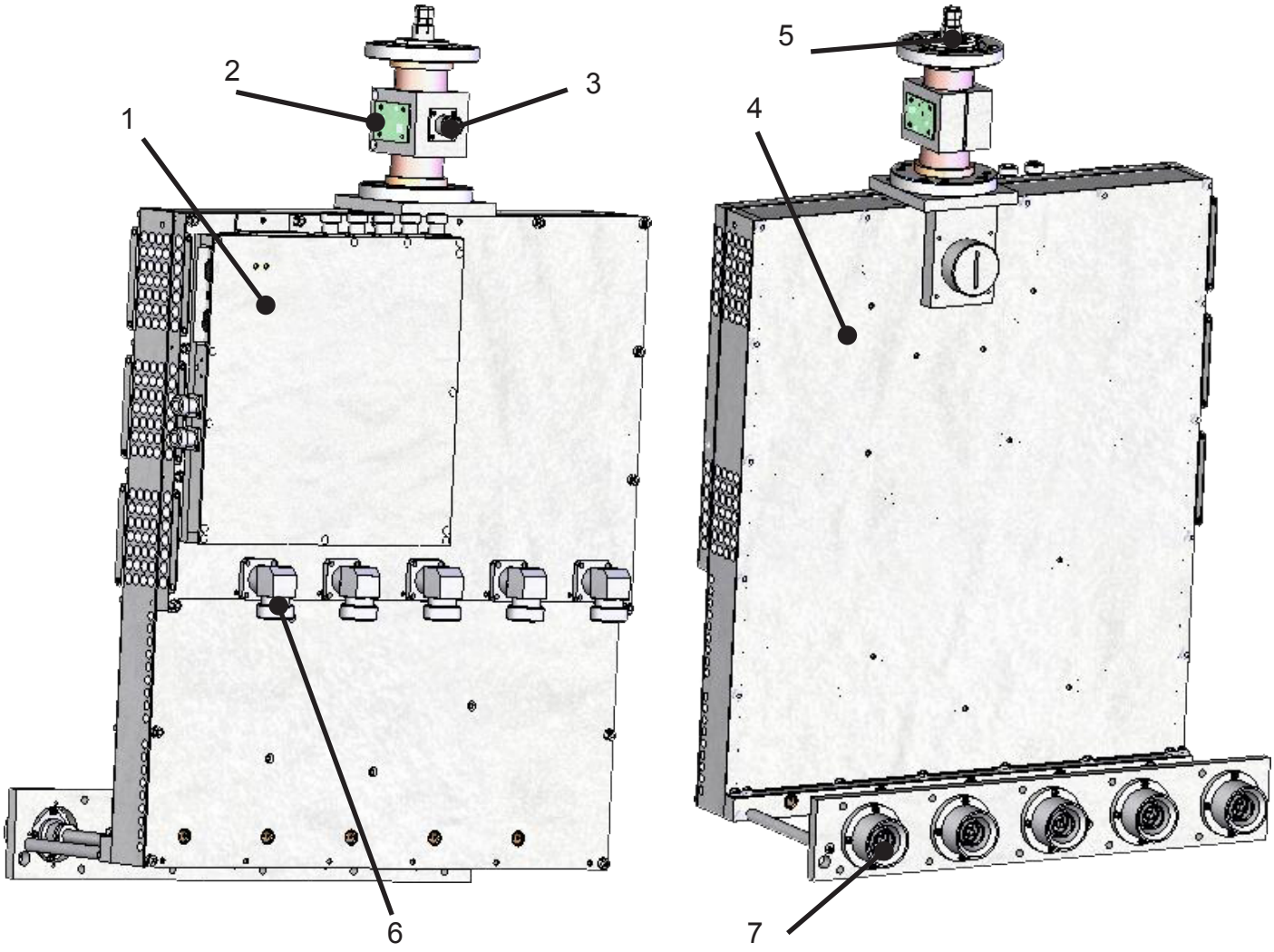




CSALVTL2KWPJ - Bill of material

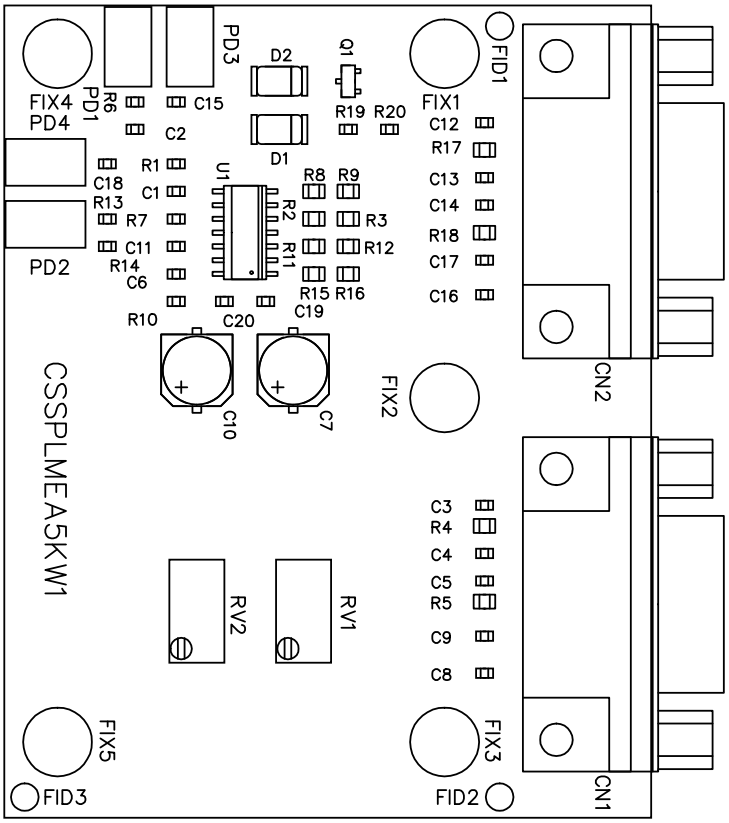
Item	Qty	Reference	Part	Description
1	6	JP1,JP2,JP3,JP4,JP5,JP6		Morsetto a 2 poli a saldare per stampato
2	24	J1,…….,J24		Faston maschio a saldare
3	8	F1,F2,F3,F4,F5,F6,F7,F8		Portafusibile da stampato
4	2	/	/	Coperchio per portafusibile
5	2	R1,R2	4,7 kohm	Resistenza 1W
6	6	C1,C2,C3,C4,C5,C6	100nF 63V	Condensatore in poliestere
7	8	DL1,DL2	led verde	Diodo led 5mm

6.6 Combiner and splitter

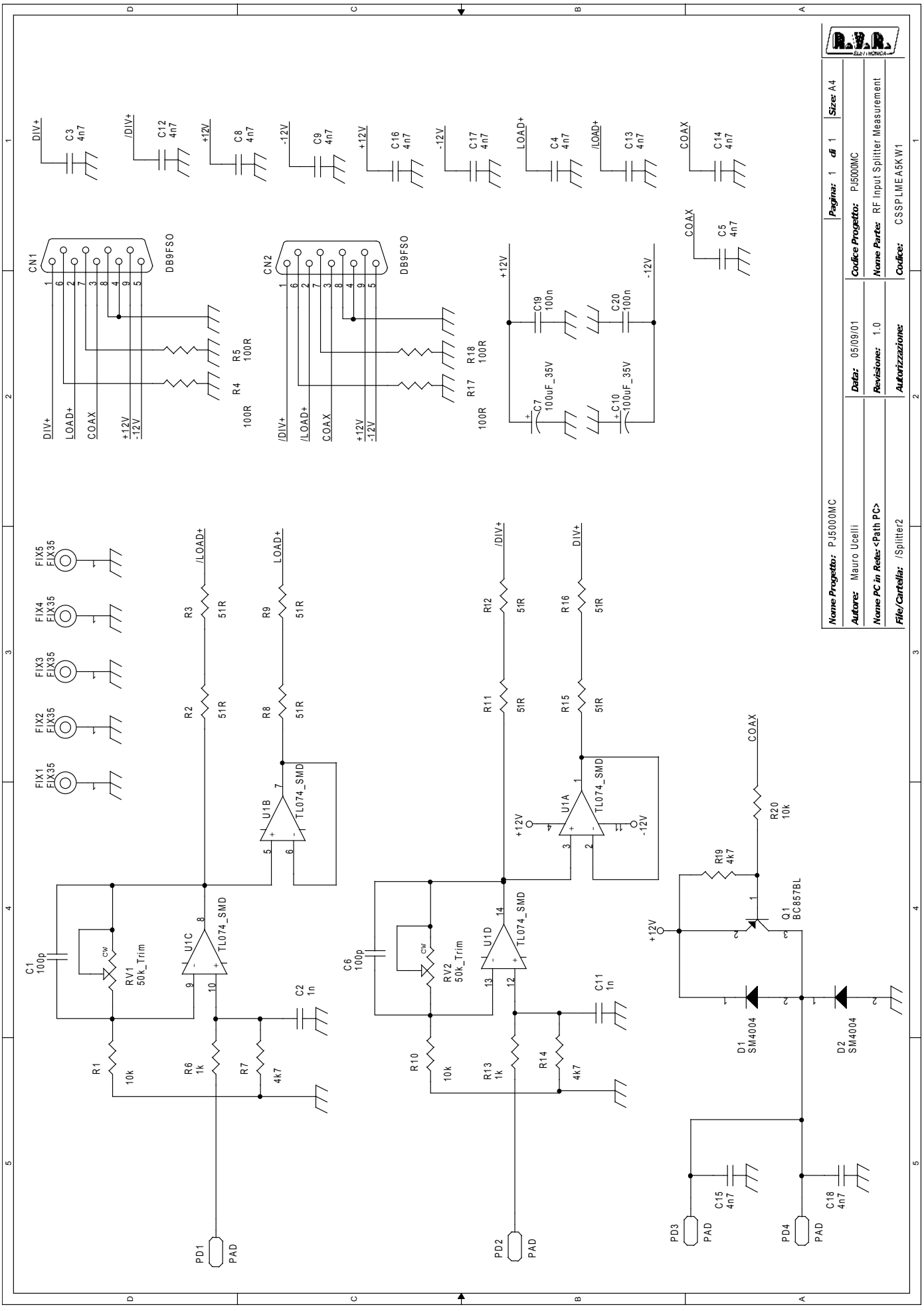


N°	Description	Code
1	Splitter	PF1SPLNPJ5KM { SLSPLMEA5KW1 / SLSPLINP5KW1
2	Directional coupler	SL042MT1001
3	RF probe	/
4	Combiner	PF1HC510KWPJ-158
5	RF output EIA 1+5/8” (optional EIA 3+1/8”)	/
6	Connection to dummy load	/
7	RF input from module	/

6.6.1 Splitter - Card measures splitter (SLSPLMEA5KW1)



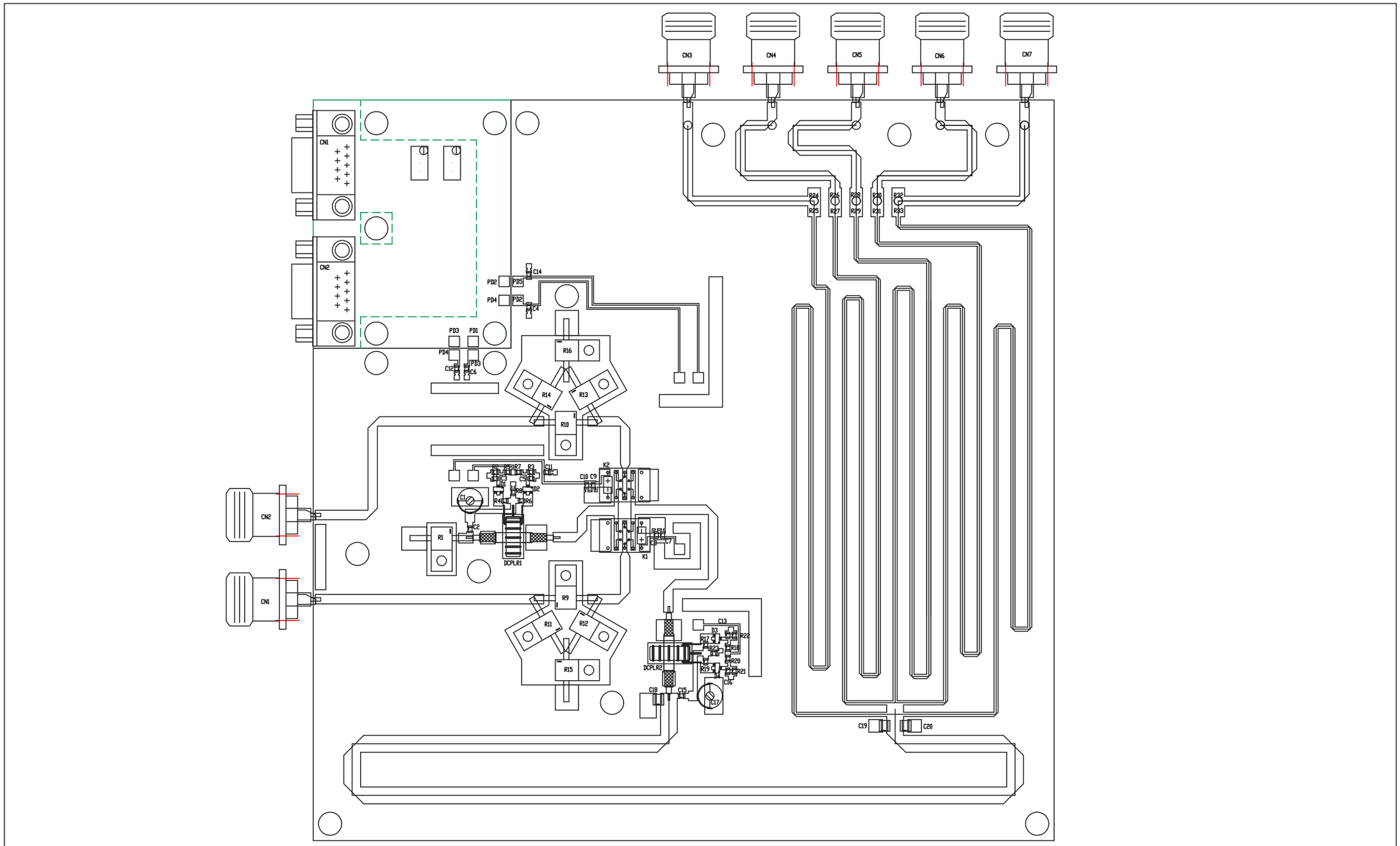
Nome Progetto:	PJ5KPS – Scheda misure splitter			Pagina: 1 di 1	Size: A4
Autore:	Ucelli – Rev.: Canazza	Data:	14/10/2002	Codice Progetto:	<>
Nome PC in Rete:	\\UT_SRV	Revisione:	1.0 (DC)	Nome Parte:	Scheda misure input splitter
File/Cartella:	SPLITLY.DWG	Autorizzazione:		Codice:	SLSPLMEA5KW1
Scala: 1:1	Materiale: <>	Trattamento:	<>	Profilo:	<>


Nome Progetto: PJ5000MC
Autore: Mauro Ucelli
Nome PC in Rete: <Path PC>
File/Cartella: /Splitter2
Data: 05/09/01
Revisione: 1.0
Autorizzazione:
Pagina: 1 di 1
Size: A4
Codice Progetto: PJ5000MC
Nome Parte: RF Input Splitter Measurement
Codice: CSSPLMEA5KW1
CN1
DB9FSO
CN2
DB9FSO
DIV+
LOAD+
COAX
+12V
-12V
/DIV+
/LOAD+
C1 100p
C2 1n
C3 4n7
C4 4n7
C5 4n7
C6 100p
C7 100uF_35V
C8 4n7
C9 4n7
C10 100uF_35V
C11 1n
C12 4n7
C13 4n7
C14 4n7
C15 4n7
C16 4n7
C17 4n7
C18 4n7
C19 100n
C20 100n
R1 10k
R2 51R
R3 51R
R4 100R
R5 100R
R6 1k
R7 4k7
R8 51R
R9 51R
R10 10k
R11 51R
R12 51R
R13 1k
R14 4k7
R15 51R
R16 51R
R17 100R
R18 100R
R19 4k7
R20 10k
RV1 50k_Trim
RV2 50k_Trim
U1A TL074_SMD
U1B TL074_SMD
U1C TL074_SMD
U1D TL074_SMD
Q1 BC857BL
D1 SM4004
D2 SM4004
FIX1 FIX35
FIX2 FIX35
FIX3 FIX35
FIX4 FIX35
FIX5 FIX35
PD1 PAD
PD2 PAD
PD3 PAD
PD4 PAD

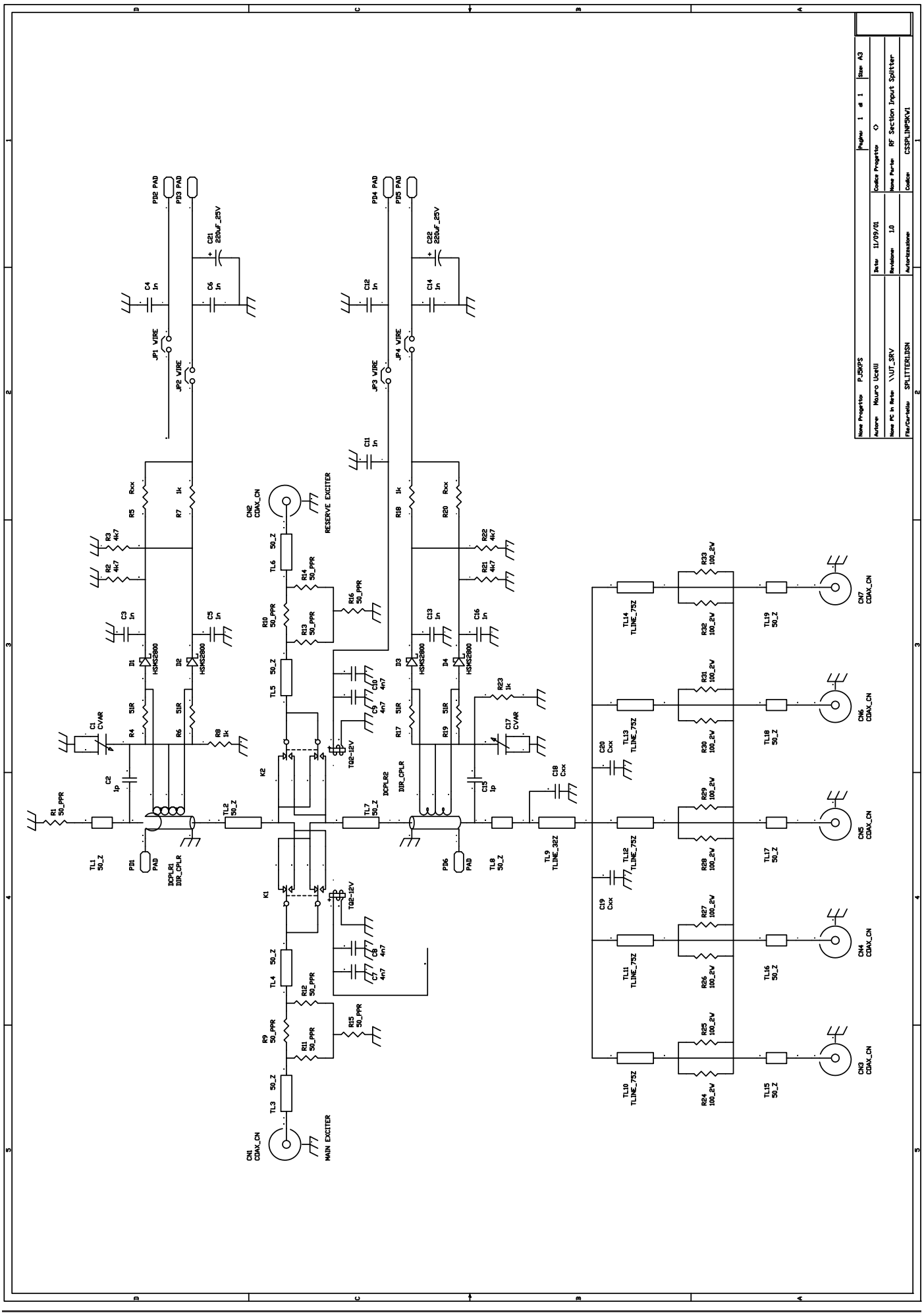
CSSPLMEA5KW1 Bill Of Materials Page1

Item	Q.ty	Reference	Part
1	2	CN2,CN1	DB9FSO
2	2	C6,C1	100p
3	2	C11,C2	1n
4	12	C3,C4,C5,C8,C9,C12,C13, C14,C15,C16,C17,C18	4n7
5	2	C7,C10	100uF_35V
6	2	C19,C20	100n
7	2	D1,D2	SM4004
8	5	FIX1,FIX2,FIX3,FIX4,FIX5	FIX35
9	4	PD1,PD2,PD3,PD4	PAD
10	1	Q1	BC857BL
11	2	RV2,RV1	50k_Trim
12	3	R1,R10,R20	10k
13	8	R2,R3,R8,R9,R11,R12,R15, R16	51R
14	4	R4,R5,R17,R18	100R
15	2	R13,R6	1k
16	3	R7,R14,R19	4k7
17	1	U1	TL074_SMD

6.6.2 Splitter - input splitter (SLSPLINP5KW1)



Nome Progetto:	PJ5KPS - RF input splitter				Pagina: 1	di 1	Size: A3
Autore:	Ucelli - Rev.: Canazza		Data: 08/10/2002		Codice Progetto: <>		
Nome PC in Rete:	\\UT_SRV		Revisione: 1.0 (DC)		Nome Parte:	Input splitter	
File/Cartella:	CSSPLINP5KW1.DWG		Autorizzazione:		Codice:	SLSPLINP5KW1	
Scala: <>	Materiale: <>		Trattamento: <>		Profilo: <>		


Nome Progetto PJ5KPS
Autore Mauro Ucelli
Nome PC in Rete \\UT_SRV
File/Cartella SPLITTER.DSN
Data 11/09/01
Revisione 1.0
Autorizzazione
Codice Progetto
Nome Parte RF Section Input Splitter
Codice CSSPLINPSKV1
Pagina 1 di 1
Size A3
RESERVE EXCITER
MAIN EXCITER
JP1 WIRE
JP2 WIRE
JP3 WIRE
JP4 WIRE
HSMS2800
TQ2-12V
DCPLR1
DCPLR2
DIR_CPLR

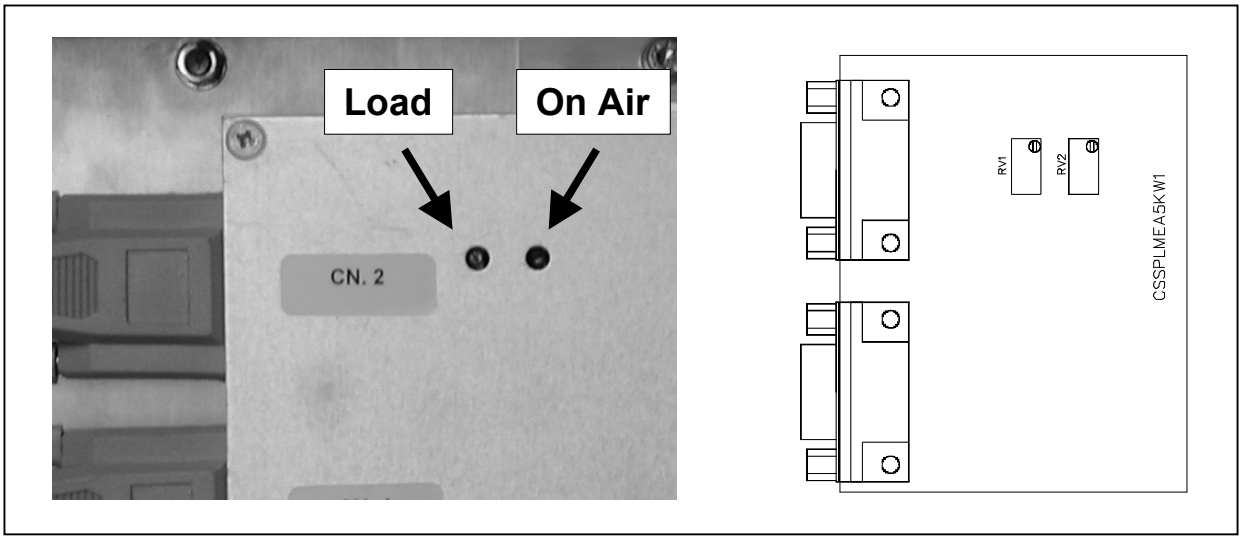
CSSPLINP5KW1 Bill Of Materials Page1

Item	Q.ty	Reference	Part
1	7	CN1,CN2,CN3,CN4,CN5,CN6, CN7	COAX_CN
2	2	C1,C17	CVAR
3	2	C2,C15	1p
4	9	C3,C4,C5,C6,C11,C12,C13, C14,C16	1n
5	4	C7,C8,C9,C10	4n7
6	3	C18,C19,C20	Cxx
7	2	C22,C21	220uF_25V
8	2	DCPLR1,DCPLR2	DIR_CPLR
9	4	D1,D2,D3,D4	HSMS2800
10	4	JP1,JP2,JP3,JP4	WIRE
11	2	K1,K2	TQ2-12V
12	6	PD1,PD2,PD3,PD4,PD5,PD6	PAD
13	9	R1,R9,R10,R11,R12,R13, R14,R15,R16	50_PPR
14	4	R2,R3,R21,R22	4k7
15	4	R4,R6,R17,R19	51R
16	2	R20,R5	Rxx
17	4	R7,R8,R18,R23	1k
18	10	R24,R25,R26,R27,R28,R29, R30,R31,R32,R33	100_2W
19	13	TL1,TL2,TL3,TL4,TL5,TL6, TL7,TL8,TL15,TL16,TL17, TL18,TL19	50_Z
20	1	TL9	TLINE_32Z
21	5	TL10,TL11,TL12,TL13,TL14	TLINE_75Z

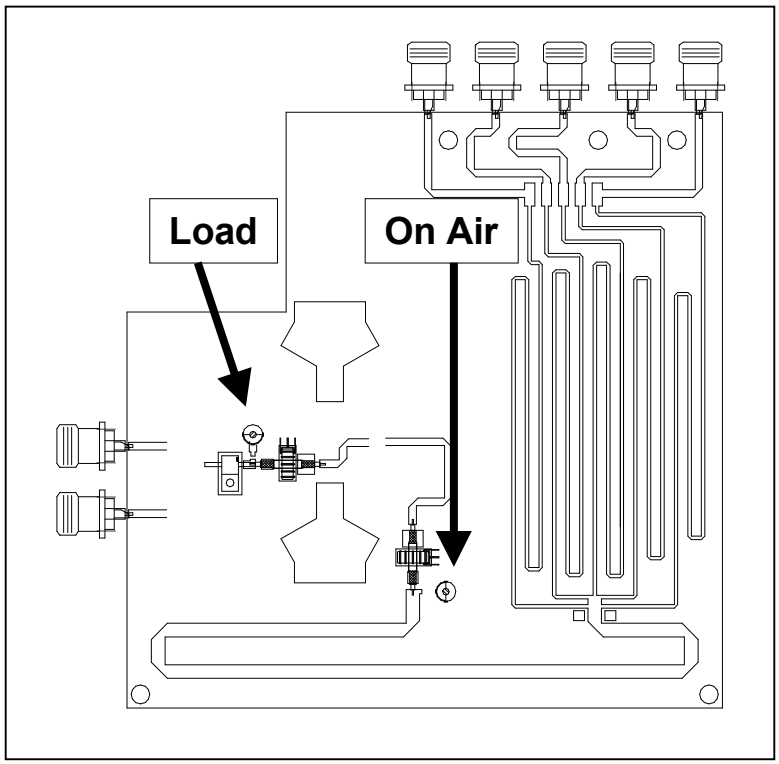
6.6.2.1 Splitter board trimmers

On the entry splitter board are present two trimmers for the regulation of the measure of the emitted power from the two exciters.

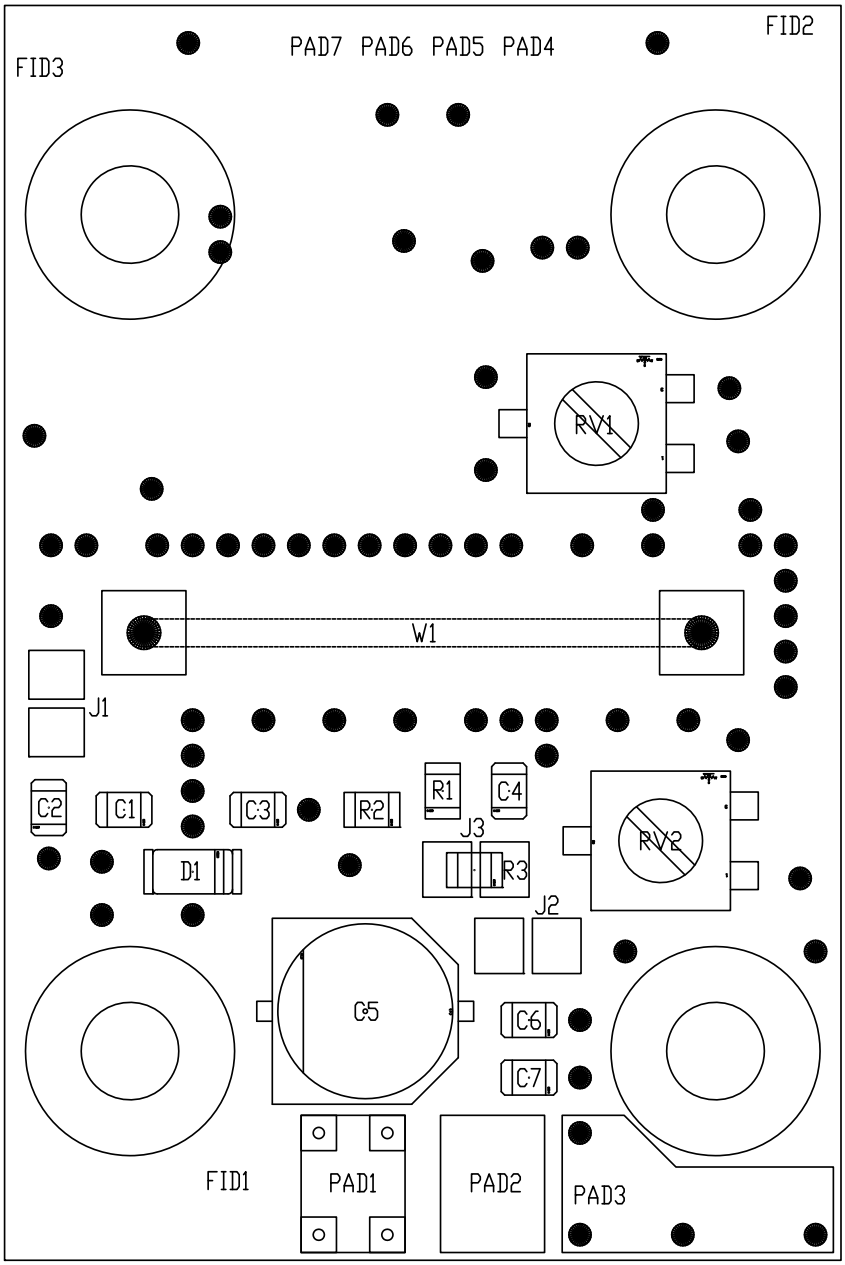
These measures are those visible in the EXCITERS menu.



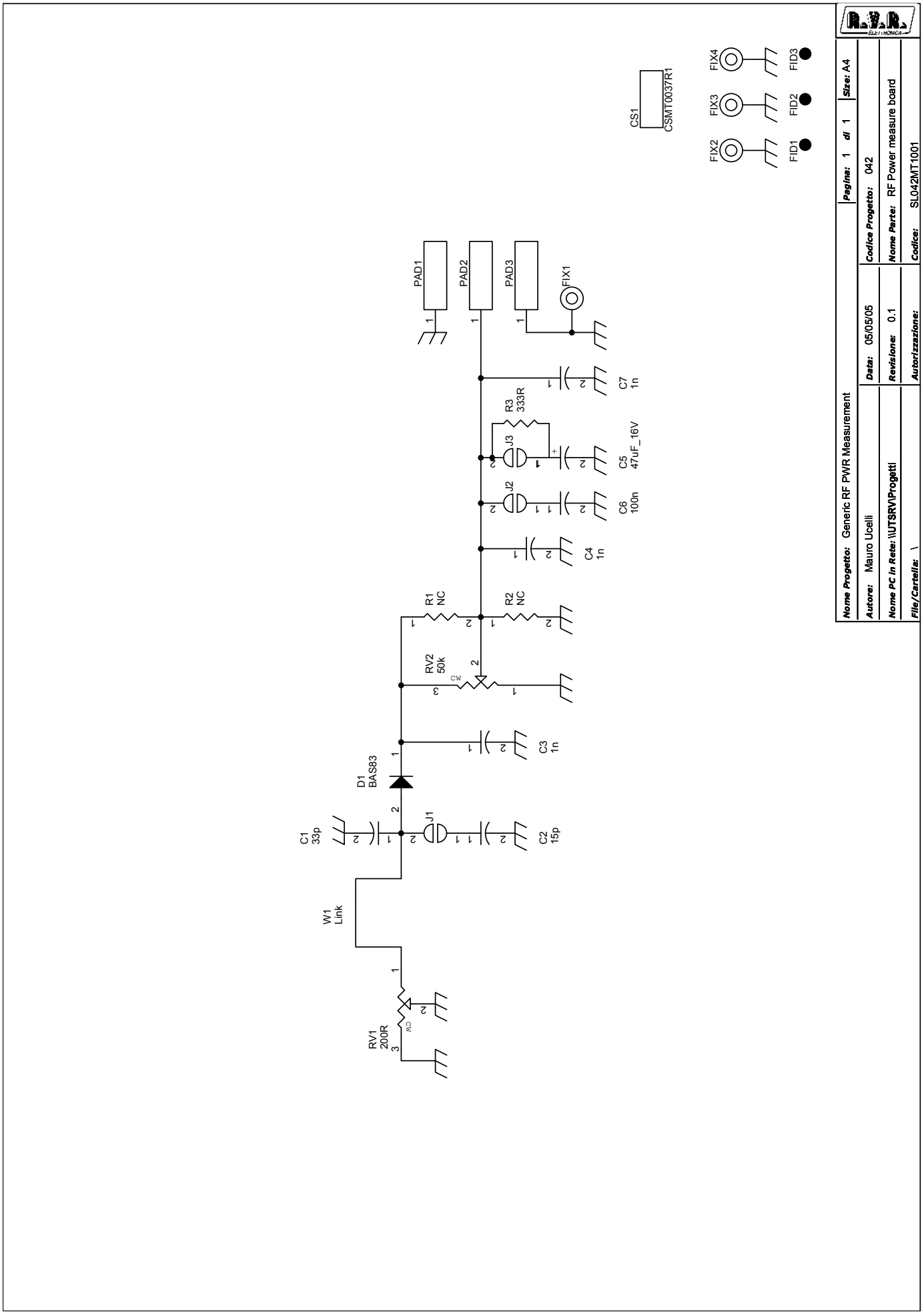
On the circuits of power measure of the exciters there are two compensators to maximize the directive and minimize the operation error measure of the frequency of operation.



6.6.3 Directional coupler (SL042MT1001)



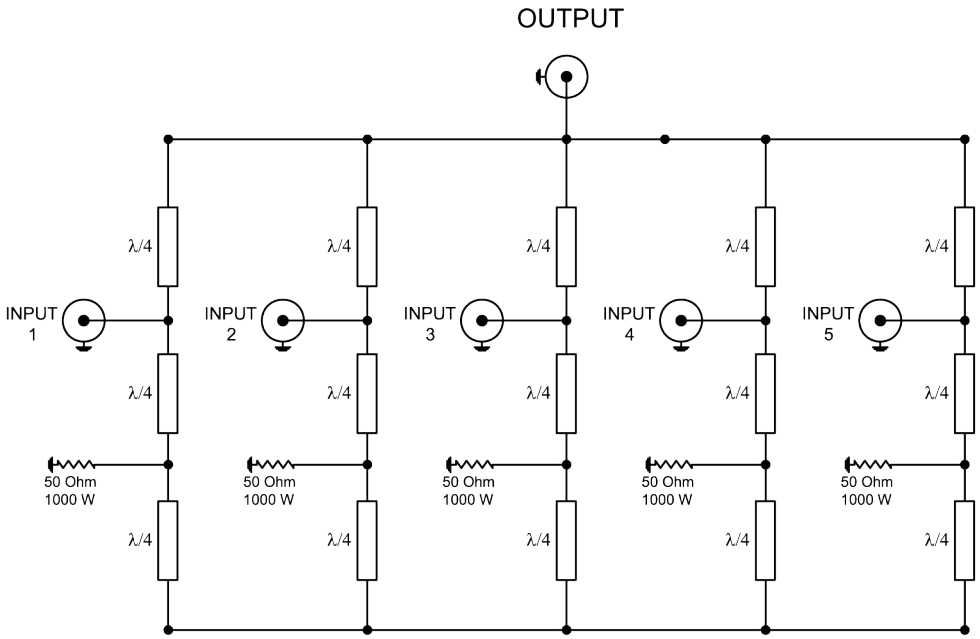
NOME PROGETTO: POWER METER			NOME PARTE: POWER METER PJ10KPS-CA		
AUTORE: M. UCELLI	DATA:05/05/2005	REVISIONE:0.1	SCALA: 4: 1	SIZE:A4	PAGINA: 1 DI 1
ARCHIVIAZIONE ELETTRONICA:	CODICE PROGETTO:042	CODICE DISEGNO:SL042MT1001			
MATERIALE:	TRATTAMENTO:	PROFILO:	STATO:PROGETTUALE		


CS1
CSMT0037R1
FIX4
FIX3
FIX2
FID3
FID2
FID1
PAD1
PAD2
PAD3
FIX1
C7
1n
R3
333R
J3
C5
47uF_16V
J2
C6
100n
C4
1n
R1
NC
R2
NC
RV2
50k
CW
C3
1n
D1
BAS83
C1
33p
J1
C2
15p
W1
Link
RV1
200R
CW
Nome Progetto: Generic RF PWR Measurement
Pagina: 1 di 1
Size: A4
Autore: Mauro Ucelli
Data: 05/05/05
Codice Progetto: 042
Nome PC in Rete: \\UTSRV\Progetti
Revisione: 0.1
Nome Parte: RF Power measure board
File/Cartella: \
Autorizzazione:
Codice: SL042MT1001

RF Power measure board PJ10KPS-CA
SL042MT1001
Revision: 0.1
Generic RF PWR Measurement
042
Mauro Ucelli
05/05/2005

Item	Quantity	Reference	Part	Description	Code1
1	1	CS1	CSMT0037R1	Circuito stampato	CSMT0037R1
2	1	C1	33p	Cond. SMD 0805 COG	CCC085330JCC
3	1	C2	15p	Cond. SMD 0805 COG	CCC085150JCC
4	3	C3,C4,C7	1n	Cond. SMD 0805	CCC085102JNC
5	1	C5	47uF_16V	Cond. Elett. SMD d. 6.3mm	CES476C160
6	1	C6	100n	Cond. SMD 0805	CCC085104KXC
7	1	D1	BAS83	MINIMELF SMD Diode	DHCBAS83
8	3	FID1,FID2,FID3	FID		
9	4	FIX1,FIX2,FIX3,FIX4	FIX35	Foro fissaggio 3.5mm	
10	3	J1,J2,J3	JSMD	Pad SMD a saldare	
11	3	PAD1,PAD2,PAD3	PAD		
12	1	RV1	200R	Trimmer SMD	RVT4X4H0200V
13	1	RV2	50k	Trimmer SMD	RVT4X4K0050V
14	2	R1,R2	NC	Res. SMD 0805	
15	1	W1	Link	Filo a saldare	
16	1	R3	333R	Res. SMD 0805	

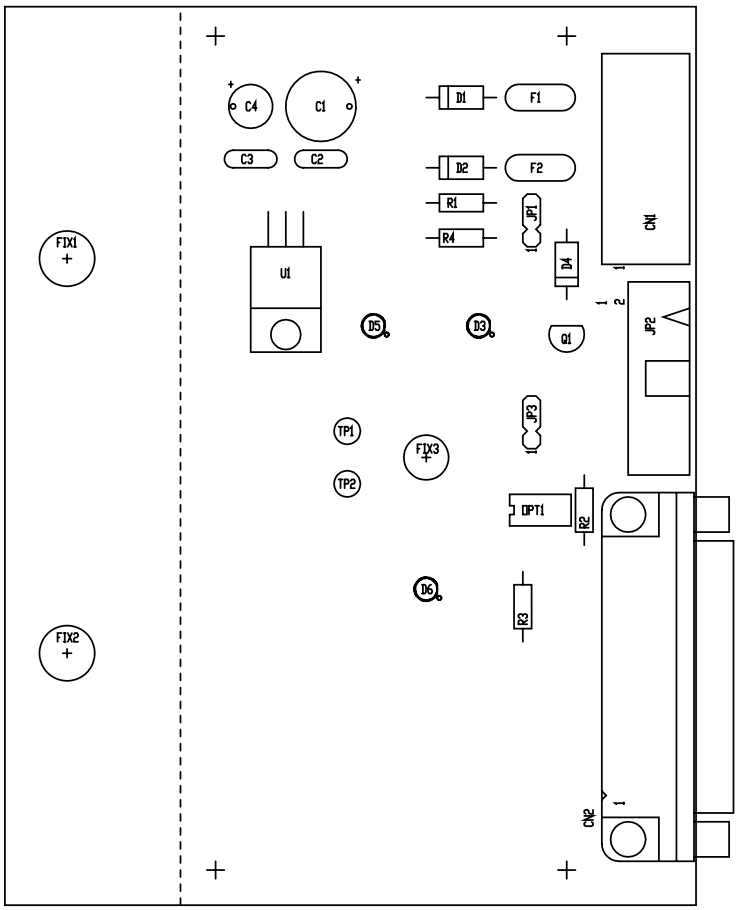
6.6.4 Combiner (PF1HC510KWPJ-158)



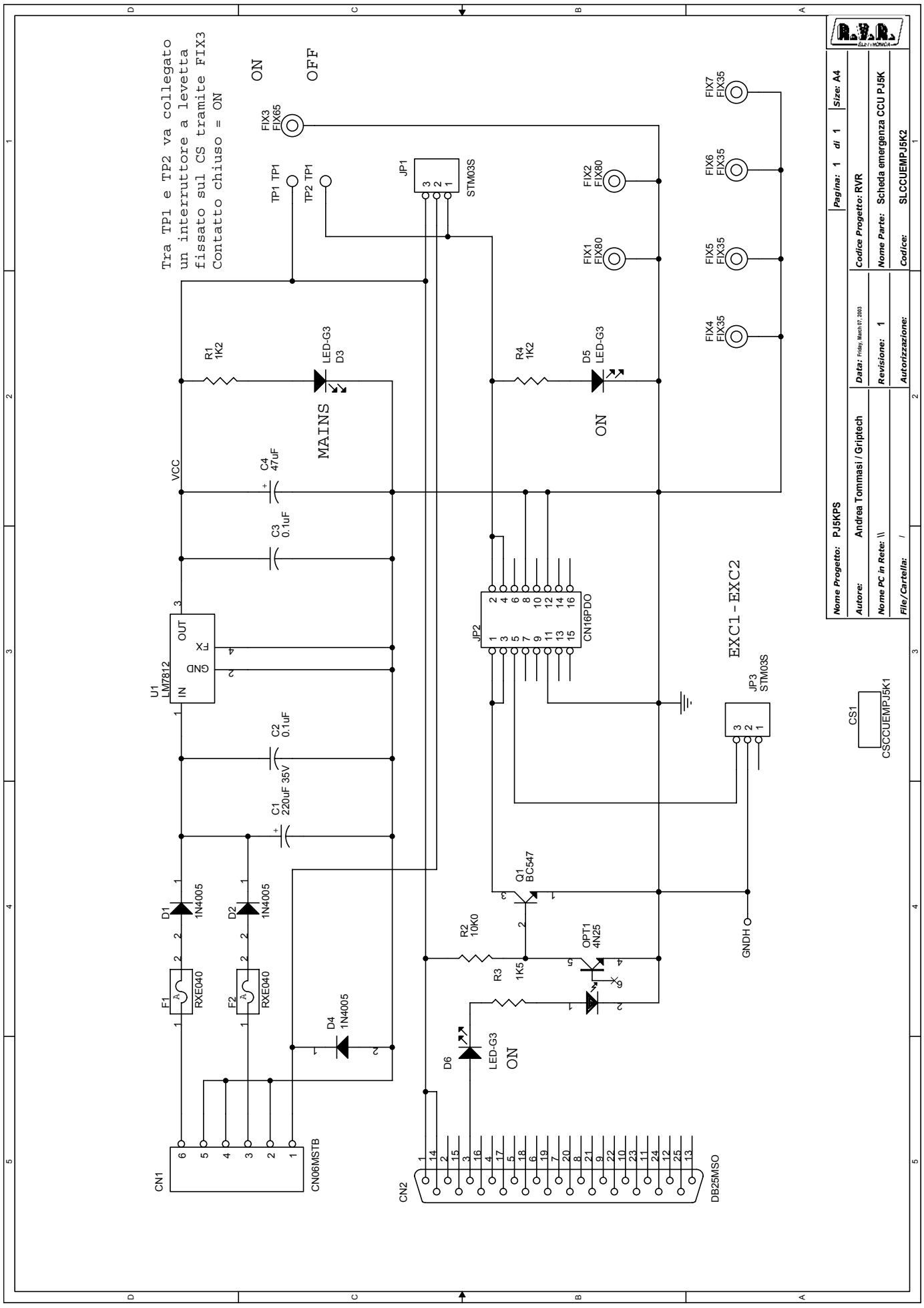
MODEL OF THE ELECTRIC SHEMATIC OF 5-WAY COMBINER

Nome Progetto: 5-way combiner			Pagina: 1 di 1	Size: A4
Autore:		Data:	Codice Progetto:	
Nome PC in Rete:		Revisione:	Nome Parte:	
File/Cartella:		Autorizzazione:	Codice:	
Scala:	Materiale:	Trattamento:	Profilo:	

6.7 Emergency CCU Board (SLCCUEMPJ5K1)



R.V.R. ELETTRONICA	NOME PROGETTO: PJ5KPS		NOME PARTE: SCHEDA EMERGENZA CCU PJ5K				
	AUTORE: Poluzzi S.		DATA: 07/03/2003	REVISIONE: 2.0	SCALA: 1:1	SIZE: A4	PAGINA: 1 DI 1
ARCHIVIAZIONE ELETTRONICA: "CARTELLA PROGETTI" SU "UT_SRV"		CODICE PROGETTO: /		CODICE DISEGNO: CSCCUEMPJ5K2			
MATERIALE: FR4-74 1.6mm Cu 35um		TRATTAMENTO: STANDARD COSTRUTTORE		PROFILO: /		STATO: /	


Tra TP1 e TP2 va collegato
un interruttore a levetta
fissato sul CS tramite FIX3
Contatto chiuso = ON
ON
OFF
FIX3 FIX65
TP1 TP1
TP2 TP1
JP1 STM03S
FIX2 FIX80
FIX1 FIX80
FIX7 FIX35
FIX6 FIX35
FIX5 FIX35
FIX4 FIX35
R1 1K2
LED-G3 D3
MAINS
R4 1K2
D5 LED-G3
ON
VCC
C4 47uF
C3 0.1uF
U1 LM7812 IN GND OUT FX
C2 0.1uF
C1 220uF 35V
JP2 CN16PDO
EXC1-EXC2
JP3 STM03S
CS1 CSCCUEMPJ5K1
D1 1N4005
D2 1N4005
F1 RXE040
F2 RXE040
D4 1N4005
Q1 BC547
R2 10K0
R3 1K5
OPT1 4N25
GNDH
D6 LED-G3
ON
CN1 CN06MSTB
CN2 DB25MSO
Nome Progetto: PJ5KPS
Autore: Andrea Tommasi / Griptech
Nome PC in Rete: \\
File/Cartella: /
Pagina: 1 di 1
Size: A4
Data: Friday, March 07, 2003
Revisione: 1
Autorizzazione:
Codice Progetto: RVR
Nome Parte: Scheda emergenza CCU PJ5K
Codice: SLCCUEMPJ5K2

SLCCUEMPJ5K1 Revision: 1
Andrea Tommasi / Griptech

Item	Quantity	Reference	Part	Description	
1	1	CN1	CN06MSTB	Conn. Phoenix MSTB a 6 poli	
2	1	CN2	DB25MSO	Connettore DB25 mas. cs 90°	
3	1	CS1	CSCCUEMPJ5K1	Circuito stampato	
4	1	C1	220uF 35V	Cond. Elettr. Dia 10 P5.08	
5	2	C2,C3	0.1uF	Cond. ceramico p 5mm	
6	1	C4	47uF	Cond. Elettr. Dia 6.5 P2.54	
7	3	D1,D2,D4	1N4005	Diodo plastico DO41	
8	3	D3,D5,D6	LED-G3	LED verde dia. 3mm	Nota 1
9	2	FIX1,FIX2	FIX80	Foro fissaggio 8mm	
10	1	FIX3	FIX65	Foro fissaggio 6.5mm	
11	4	FIX4,FIX5,FIX6,FIX7	FIX35	Foro fissaggio 3.5mm	
12	2	F1,F2	RXE040	Fusibile autorip. 7mm	
13	2	JP1,JP3	STM03S	Strip maschio 3 pin	
14	1	JP2	CN16PDO	Connettore 16 poli Flat cs a 90°	
15	1	OPT1	4N25	Optoisolatore DIP6	
16	1	Q1	BC547	Trans. NPN TO92	
17	2	R4,R1	1K2	Res. 1/4W	
18	1	R2	10K0	Res. 1/4W	
19	1	R3	1K5	Res. 1/4W	
20	2	TP1,TP2	NC	Test point	
21	1	U1	LM7812	Stabilizzatore TO220	
22	1	SW1	SW1V2P	Deviatore fissato nel foro e collegato tra TP1 e TP2 chiuso in pos. ON Con blocco della levetta E la levetta lato saldature	

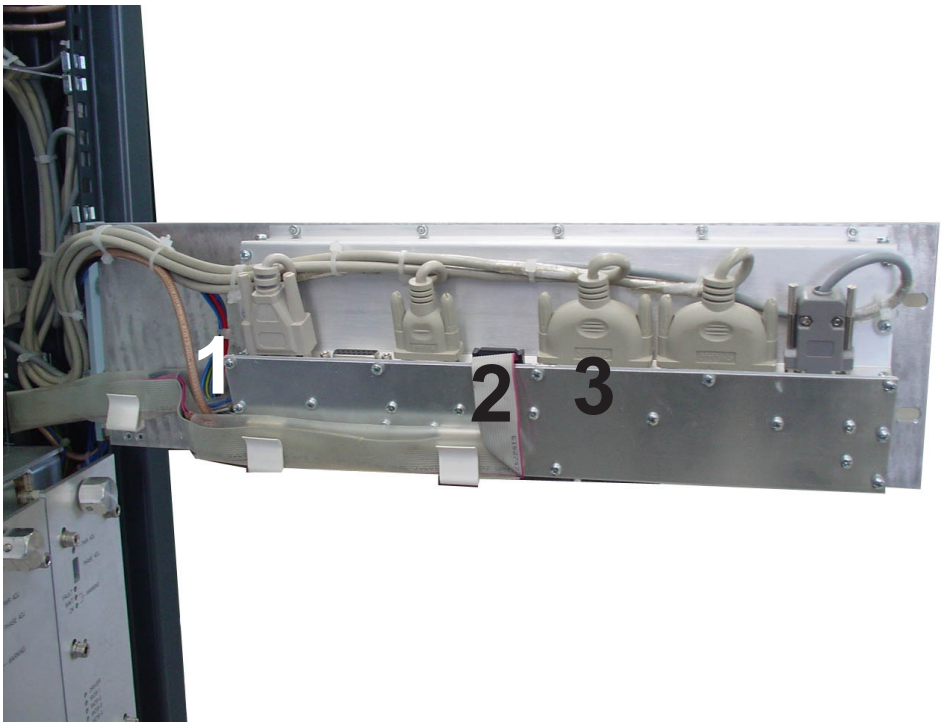
Nota 1 I led vanno montati lato saldature a livello del CS

6.7.1 Installation emergency CCU Board

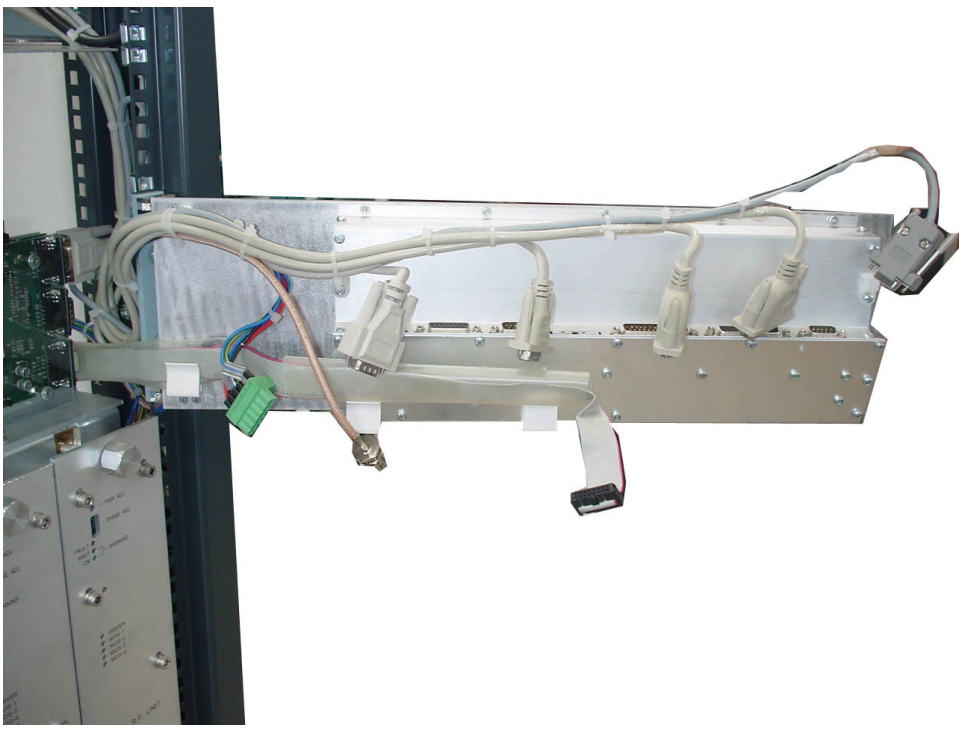
In the case the control unit presents a damage, it is possible assure the correct operation replacing, temporarily, the control panel with the card furnished together with the PJ10KPS-CA.

To effect the substitution, execute the following instructions:

1) Switch-OFF the amplifier. Remove the screw on the left side of the LCD panel, open the panel and individualize the necessary connectors to the operation of the emergency card.

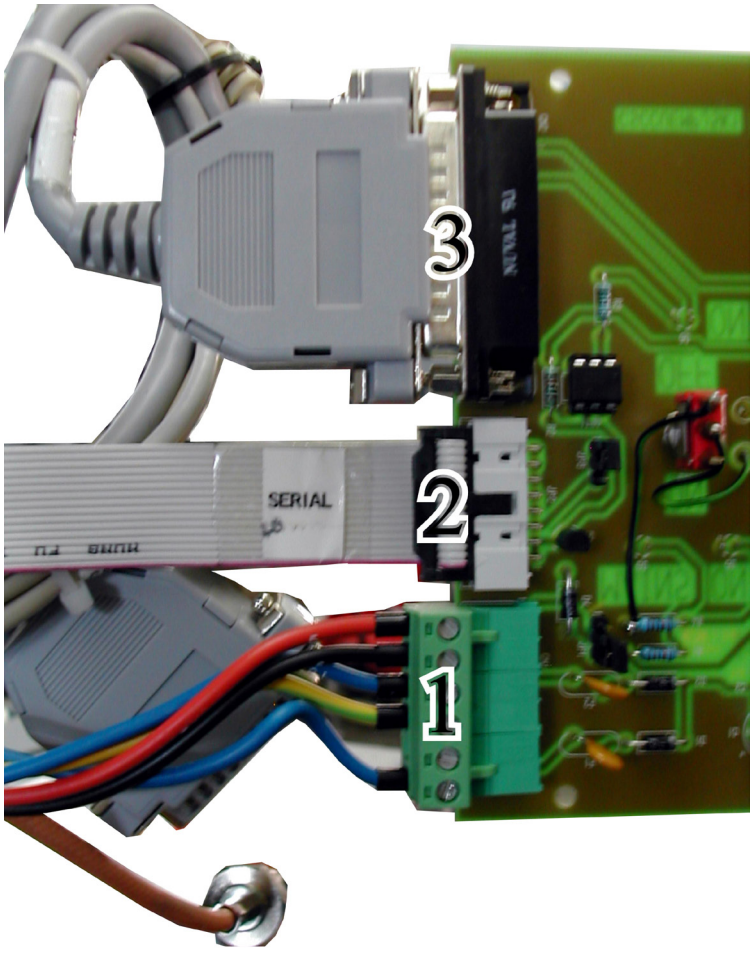


2) Disconnect all the cables connected to the unit control.

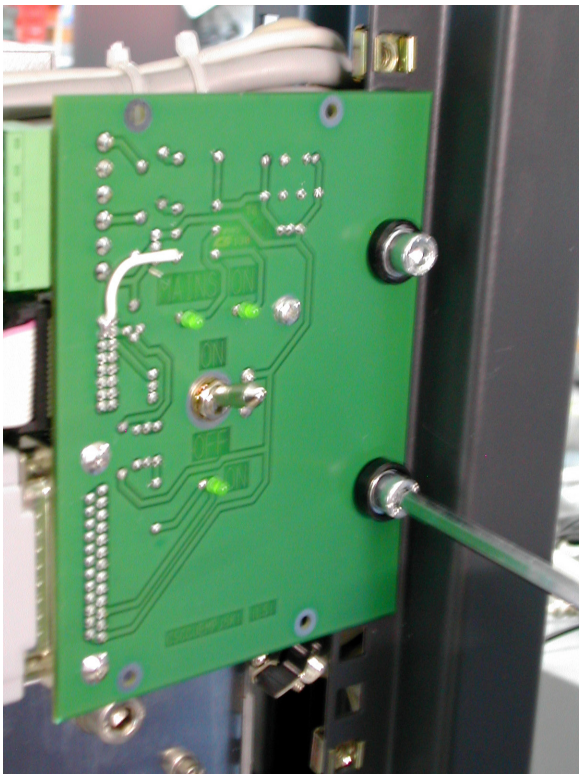


3) Unscrew the crews that fix the board to the rack and remove the panel from his place.

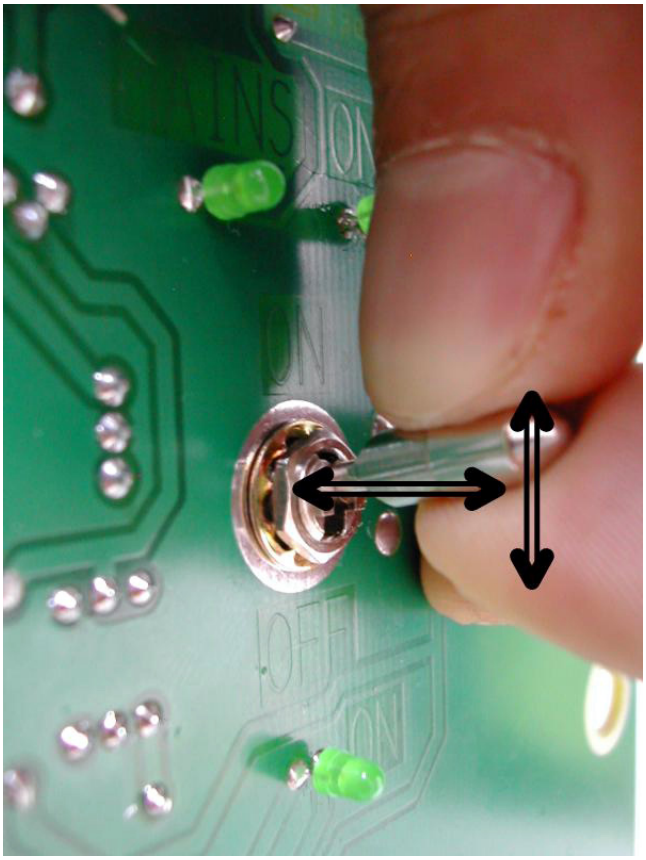
4) Connect the three connectors precedentely identified to the entries of the board, like represented in the photo.



5) Fix the board to the rack, in the same position in which previously had fixed the central panel of control. Do attention to fix the side of the card from which the interrupter sticks out toward the outside of the amplier.

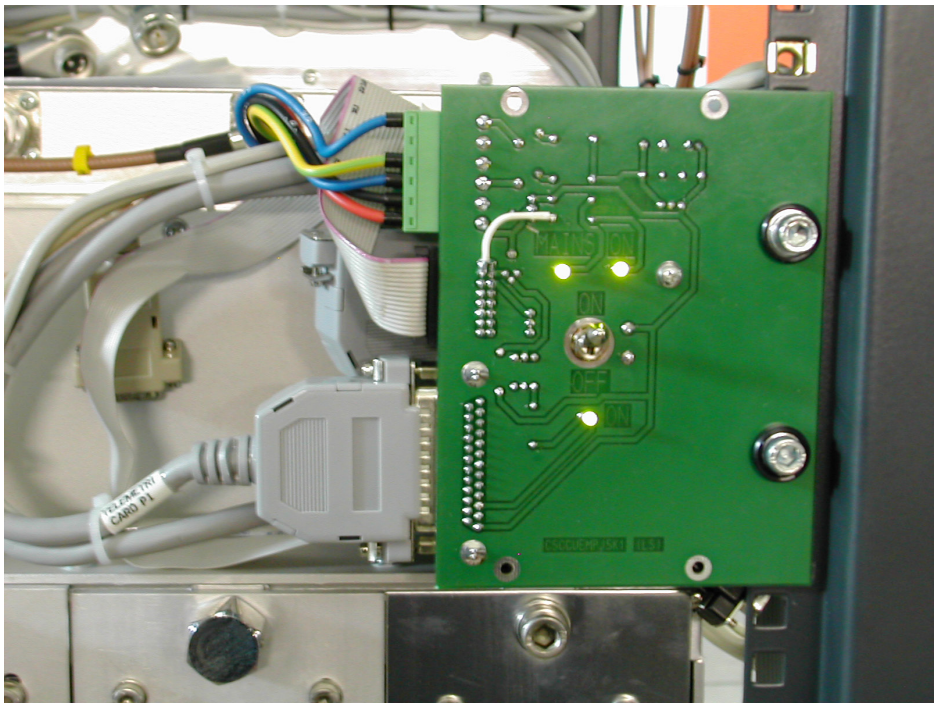


6) Switch-ON the apparatus with general switch and activate the operation of the board putting the interrupter on the ON position. The switch has built in way to avoid the accidental operating; throw the interrupter toward the outside, go on the desired position and release the interrupter.



Now the emergency board is operative.

When be used the emergency board, the amplifier acts with the parameters previously adjusted (for example: the level of power). To modify the parameters is necessary use the unit control.



6.8 Services supply

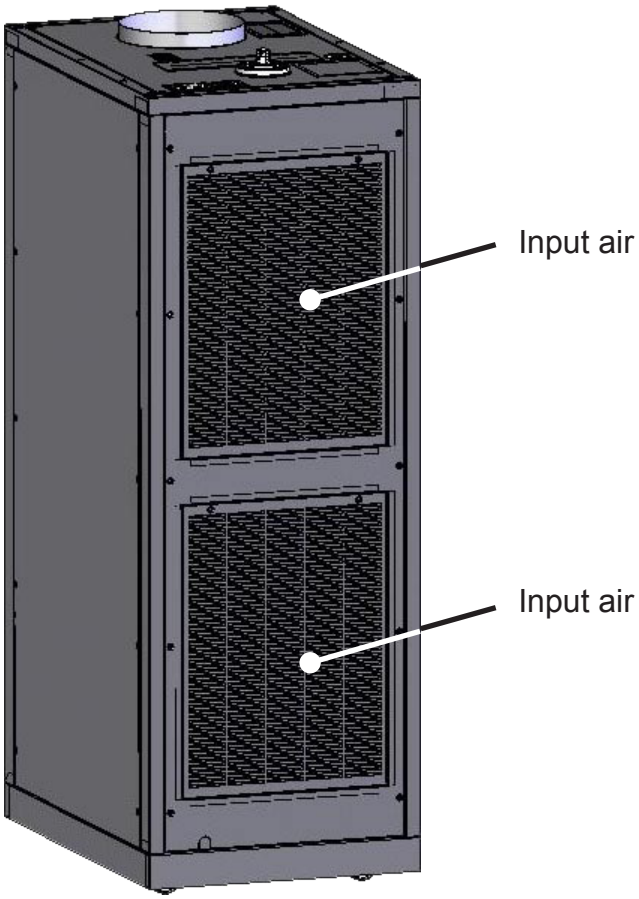
The services of PJ10KPS-CA are supplied at 220V through a dedicated transformer.

Between the services, are included the microcontroller cards of RF modules, those of the combiner and power supply and the control unit.

Supplying the services of the PJ10KPS-CA with an UPS (Uninterruptable Power Supply), the machine also in case of absence of mains power can be managed, naturally limitedly to the functions available (for example configuration or interrogation of the alarms registry). The normal configuration of the machine previews that the services are directly supply through the connection to the electrical mains of the machine, in order to insert an UPS is sufficient put it between the VDE on the roof, after have removed the bridge that comes supplied of series.

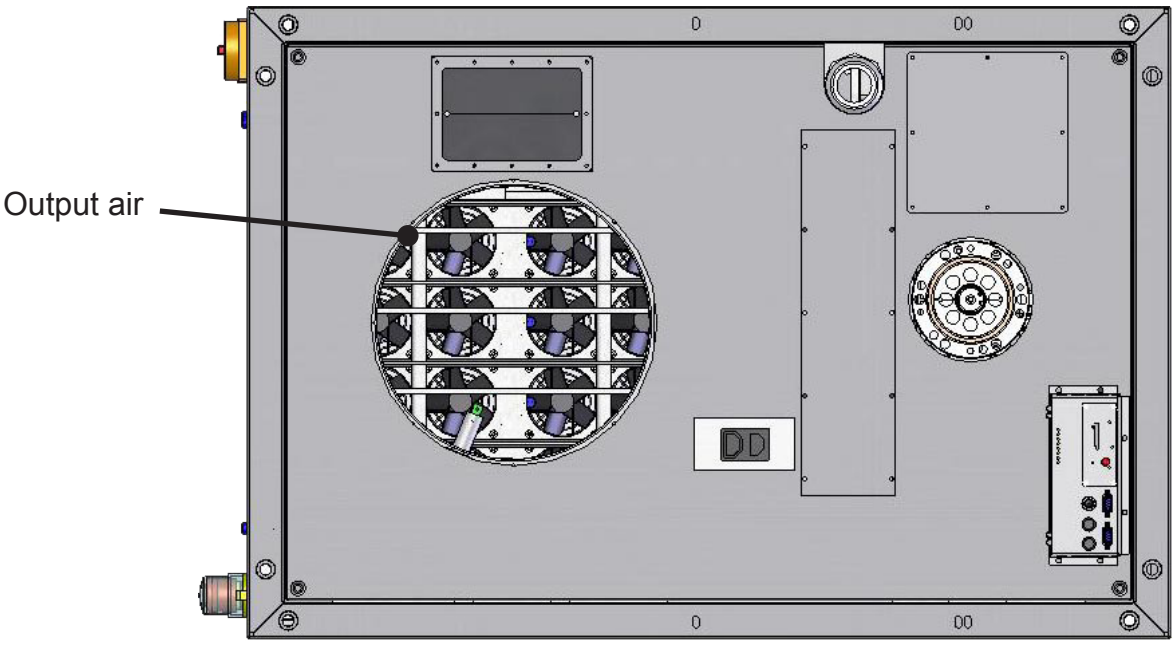
6.9 PJ10KPS-CA Ventilation

The input hole of the air is situated on the back cover of the rack.

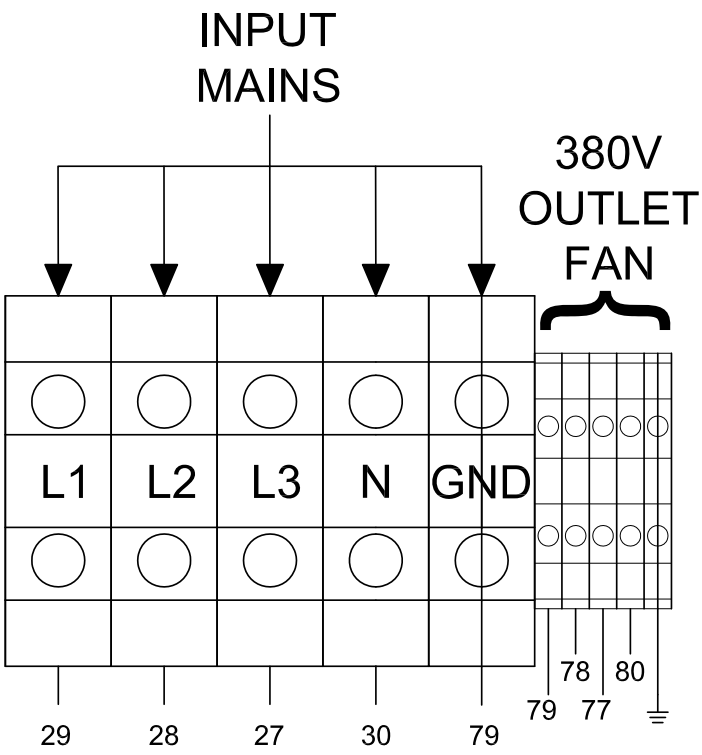


The output hole of the air is situated on the top cover of the rack.

The current of output air is equal to 800 m3/ h. The diameter of the output is 300mm.

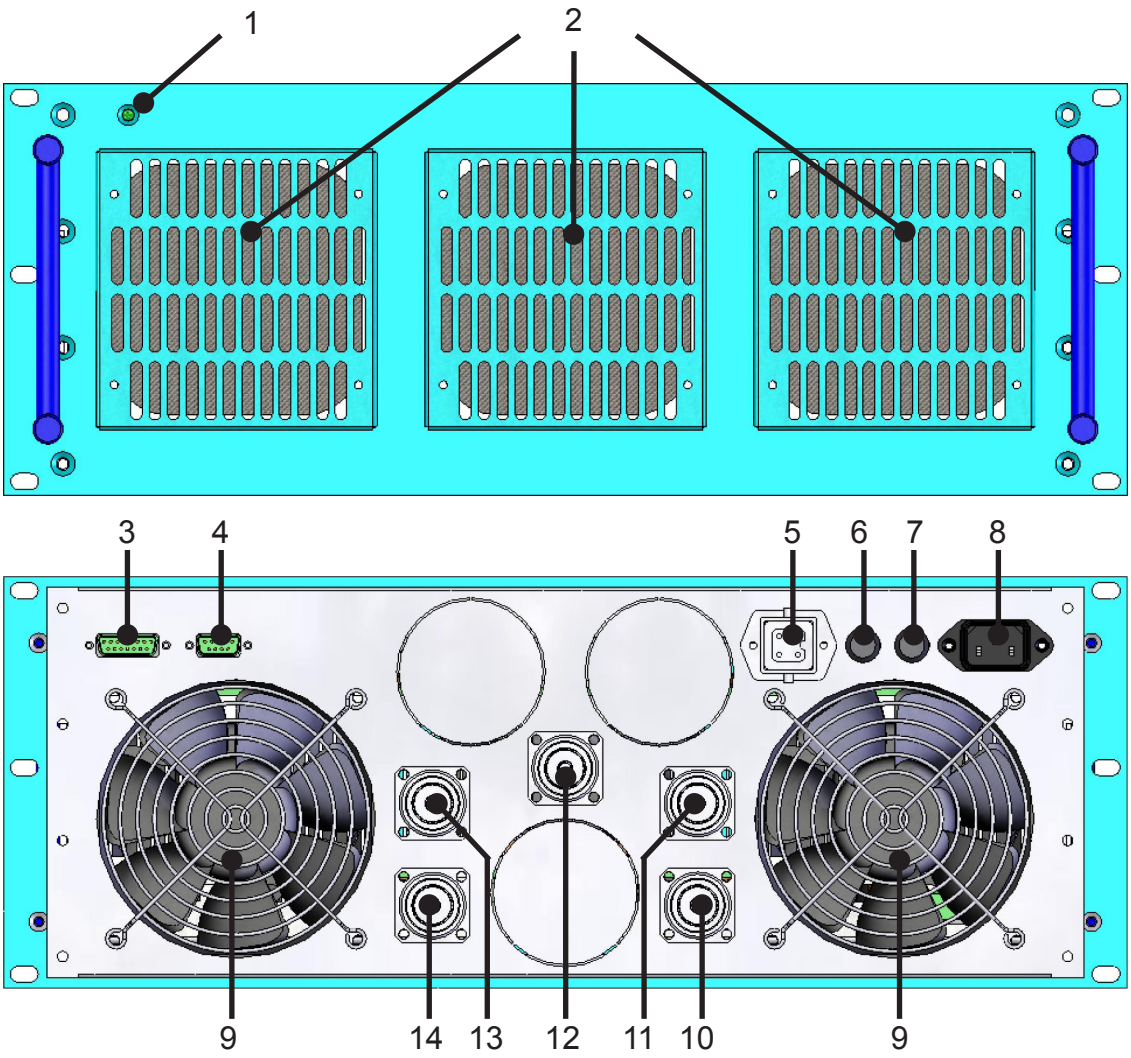


6.10 Input socket



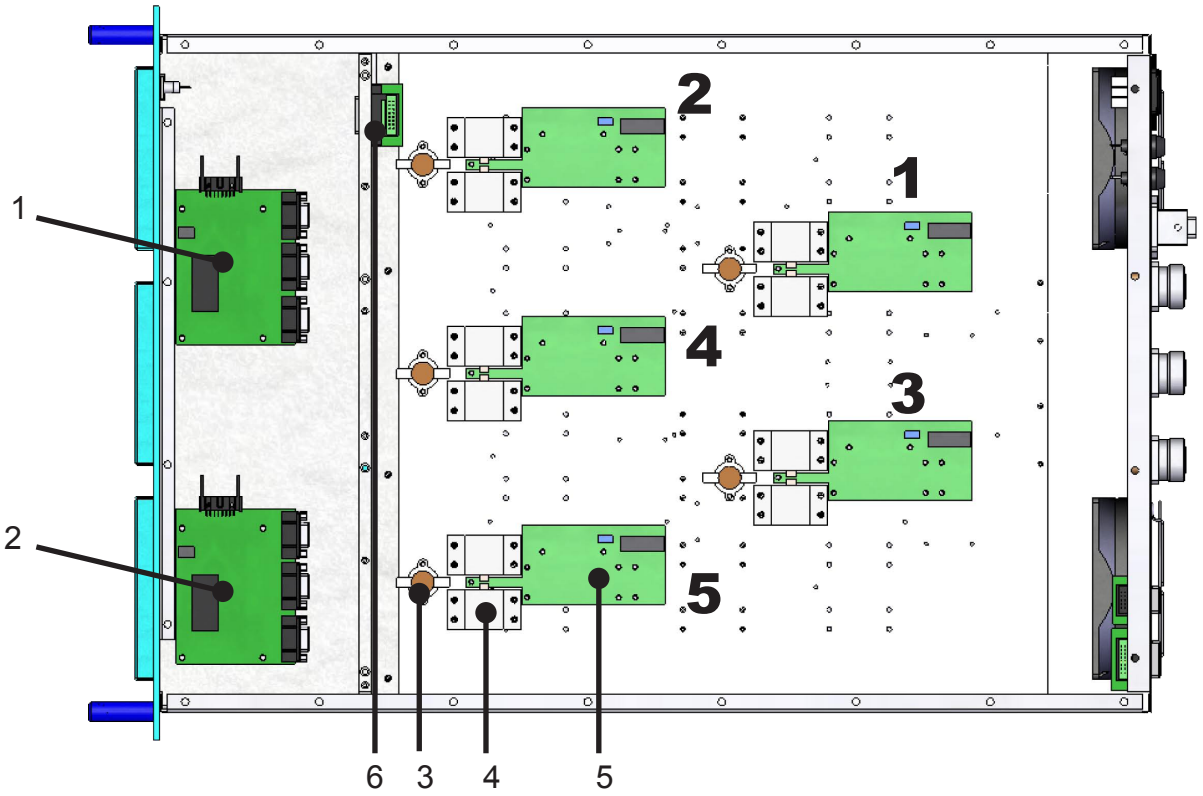
	DENOMINAZIONE: Morsettiera di alimentazione		
	N° PROGRAMMA: --		MACCHINA: --
SEMILAVORATO: --		AUTORE: Nicolini Daniele	CODICE DISEGNO:
MATERIALE: --	PESO [KG]: 0.65	SCALA:	REVISIONE: 0
TRATTAMENTO: --	DATA: 13/06/2013		CODICE AS400: --
TOLLERANZA GENERALE SECONDO UNI ISO 2768-f		FORMATO: A4	( )

6.11 Dummy load

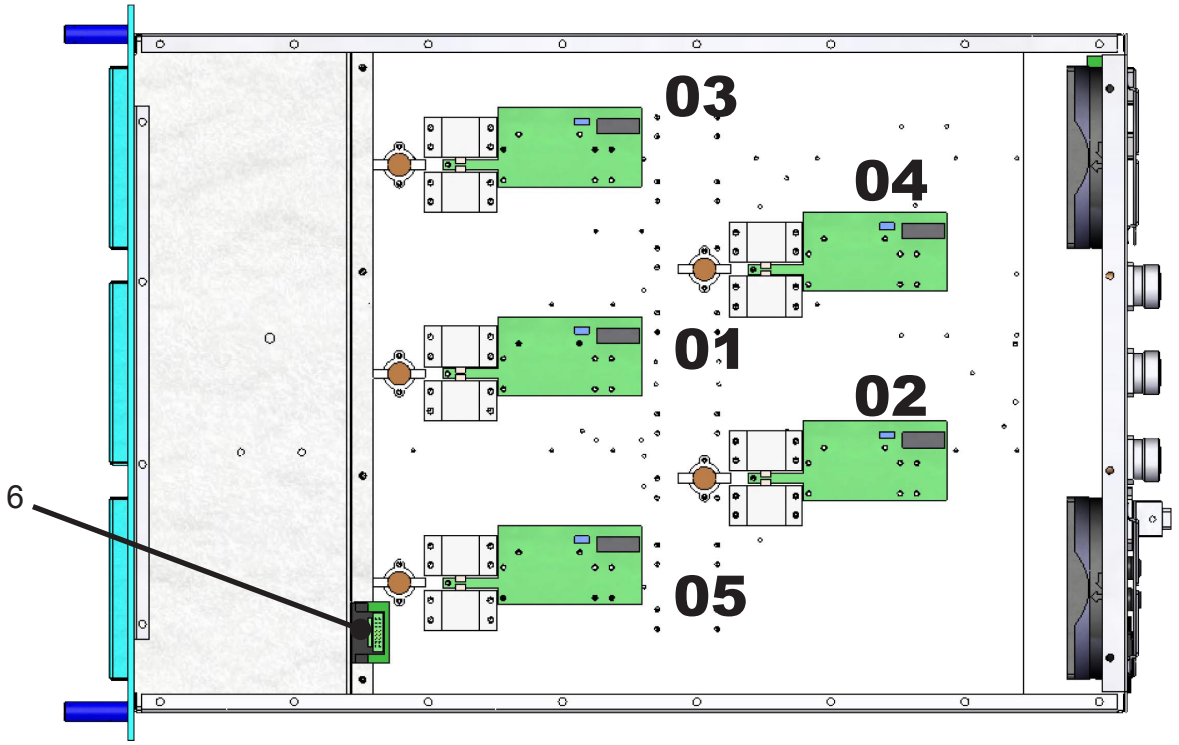


N°	Description	Code
1	Supply voltage presence indicator.	/
2	Fan air inlet	VTL4114NH3
3	Not presnt	/
4	DB-9 unbal power measure	/
5	Blower dummy load enable	/
6	Fuse out	10 A
7	Fuse in (mains)	4 A
8	VDE mains	/
9	Fan air outlet	VTL4114NH3
10	Input 1 RF (7/16”) to KDI 1	/
11	Input 2 RF (7/16”) to KDI 2	/
12	Input 3 RF (7/16”) to KDI 3	/
13	Input 4 RF (7/16”) to KDI 4	/
14	Input 5 RF (7/16”) to KDI 5	/

TOP VIEW (KDI MASTER)

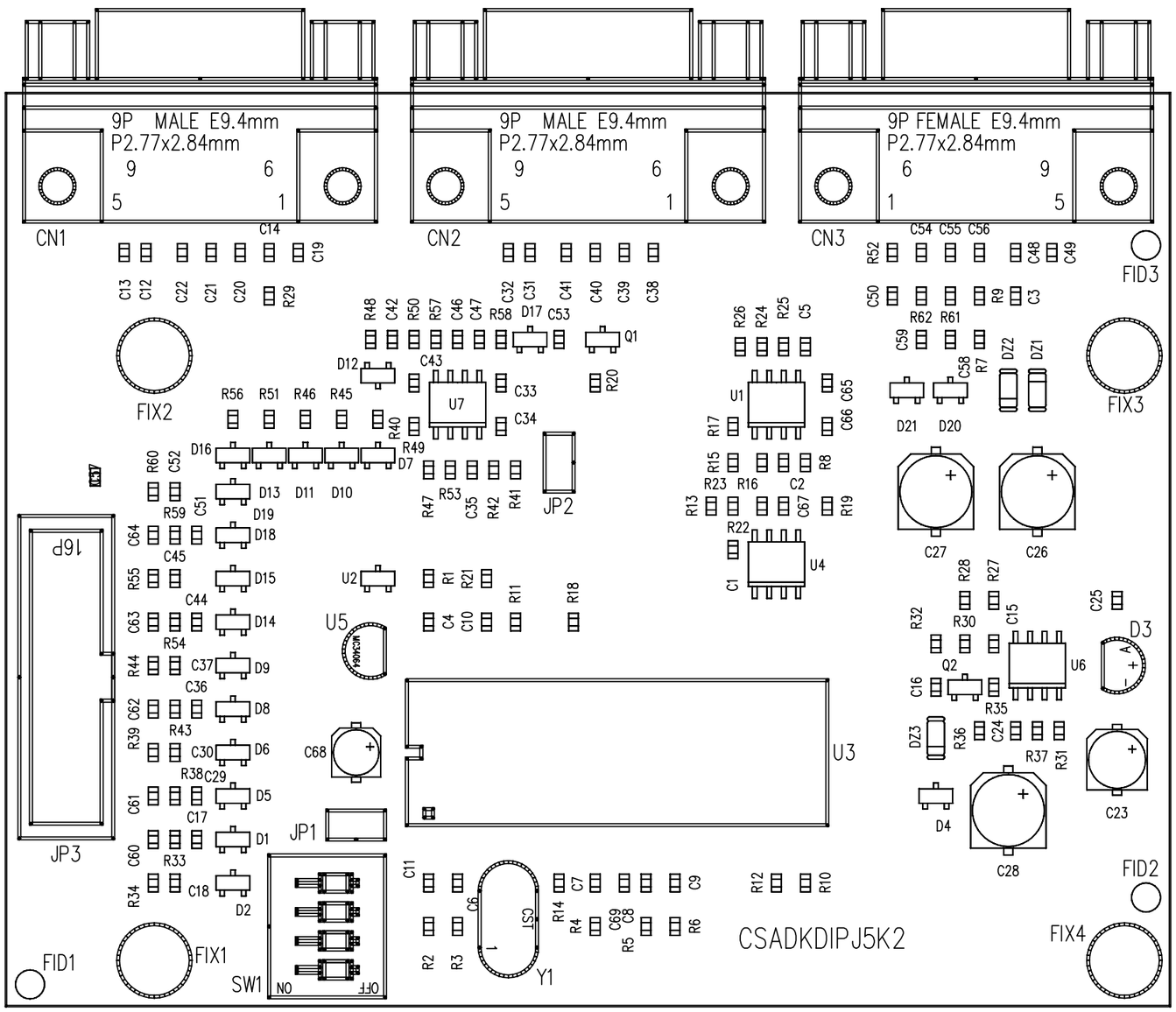


BOTTOM VIEW (KDI SLAVE)

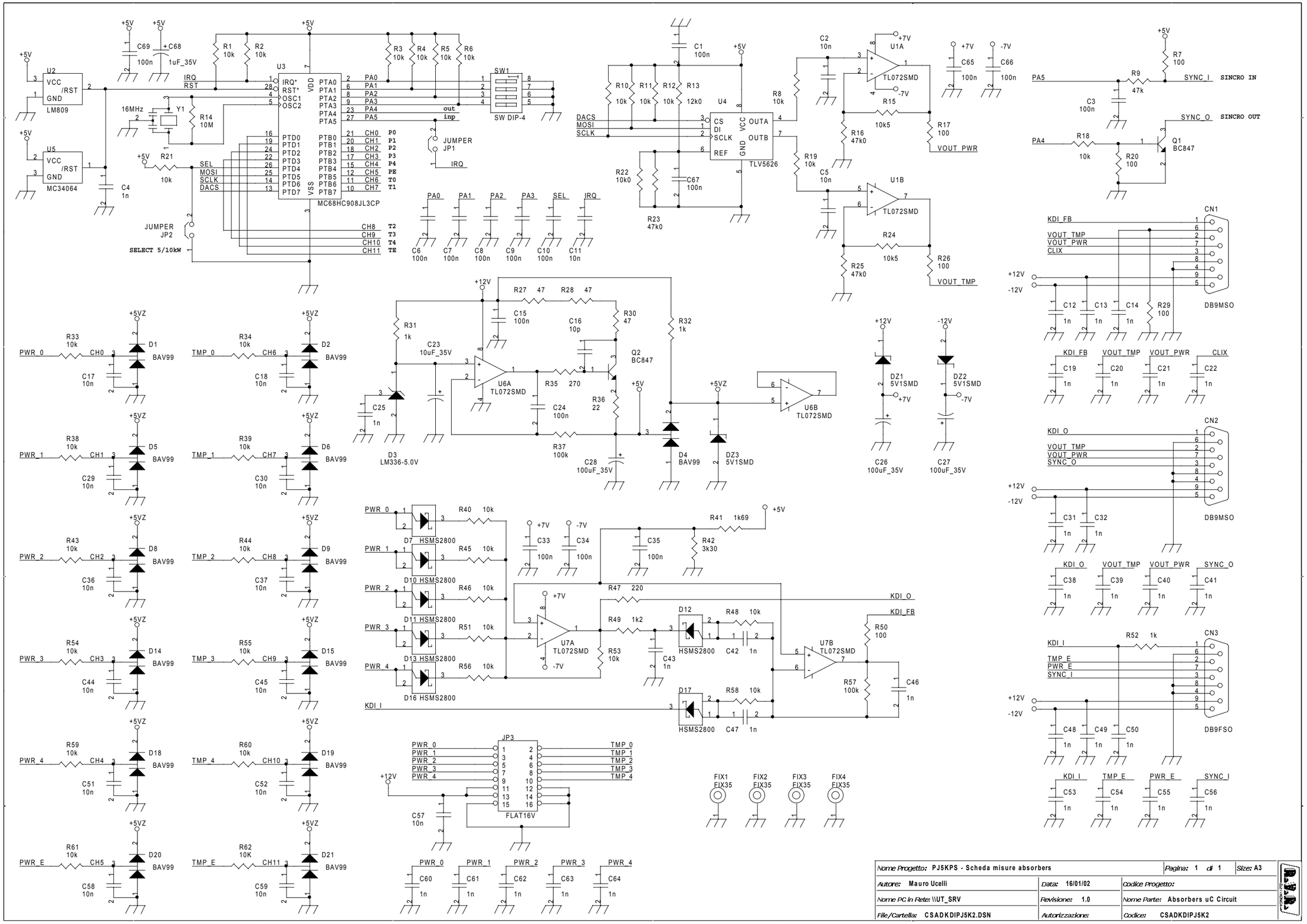


N°	Description	Code
1	Absorber misure board (master)	SLADKDIPK5K2
2	Absorber misure board (slave)	SLADKDIPK5K2
3	Clickson 50° NA	SETBMET50NA
4	KDI resistor 100 Ω 800 W (termination)	RDT800J0100
5	Absorber measure	SLPWRSEBHC52
6	DB-15 board	SLDB15FFILF1

6.11.1 Absorber misure board (SLADKDIPK5K2)



Nome Progetto:	PJ5KPS - Scheda misure absorbers			Pagina: 1 di 1	Size: A3
Autore:	Ucelli - Rev.: Canazza	Data:	09/10/2002	Codice Progetto:	<>
Nome PC in Rete:	\\UT_SRV	Revisione:	1.0 (DC)	Nome Parte:	Scheda misure absorbers
File/Cartella:	ADKDIP_LY.DWG	Autorizzazione:		Codice:	SLADKDIPK5K2
Scala: <>	Materiale: <>	Trattamento:	<>	Profilo:	<>



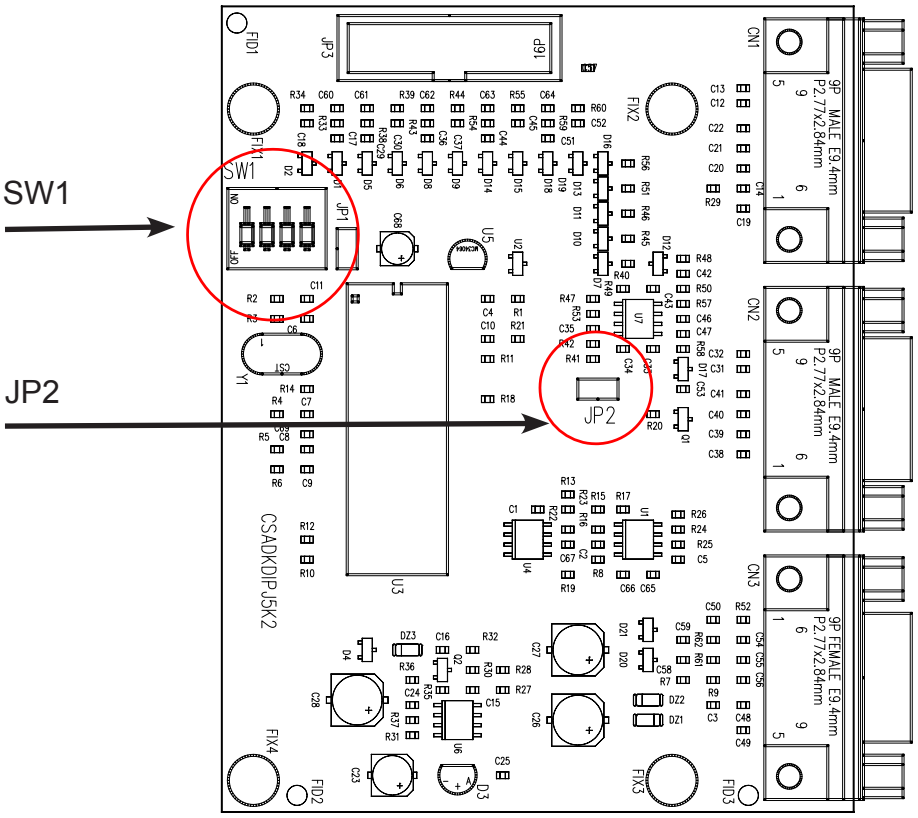
Nome Progetto: PJ5KPS - Scheda misure absorbers			Pagina: 1 di 1 Size: A3
Autore: Mauro Ucelli	Data: 16/01/02	Codice Progetto:	
Nome PC in Rete: \\UT_SRV	Revisione: 1.0	Nome Parte: Absorbers uC Circuit	
File/Cartella: CSADKDIPJ5K2.DSN	Autorizzazione:	Codice: CSADKDIPJ5K2	

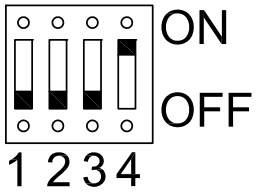
CSADKDIPJ5K2 Bill Of Materials Page1

Item	Q.ty	Reference	Part
1	2	CN1,CN2	DB9MSO
2	1	CN3	DB9FSO
3	16	C1,C3,C6,C7,C8,C9,C10, C15,C24,C33,C34,C35,C65, C66,C67,C69	100n
4	16	C2,C5,C11,C17,C18,C29, C30,C36,C37,C44,C45,C51, C52,C57,C58,C59	10n
5	31	C4,C12,C13,C14,C19,C20, C21,C22,C25,C31,C32,C38, C39,C40,C41,C42,C43,C46, C47,C48,C49,C50,C53,C54, C55,C56,C60,C61,C62,C63, C64	1n
6	1	C16	10p
7	1	C23	10uF_35V
8	3	C26,C27,C28	100uF_35V
9	1	C68	1uF_35V
10	3	DZ1,DZ2,DZ3	5V1SMD
11	13	D1,D2,D4,D5,D6,D8,D9,D14, D15,D18,D19,D20,D21	BAV99
12	1	D3	LM336-5.0V
13	7	D7,D10,D11,D12,D13,D16, D17	HSMS2800
14	4	FIX1,FIX2,FIX3,FIX4	FIX35
15	2	JP2,JP1	JUMPER
16	1	JP3	FLAT16V
17	2	Q2,Q1	BC847
18	33	R1,R2,R3,R4,R5,R6,R8,R10, R11,R12,R18,R19,R21,R33, R34,R38,R39,R40,R43,R44, R45,R46,R48,R51,R53,R54, R55,R56,R58,R59,R60,R61, R62	10k
19	6	R7,R17,R20,R26,R29,R50	100
20	1	R9	47k
21	1	R13	12k0
22	1	R14	10M
23	2	R15,R24	10k5
24	3	R16,R23,R25	47k0
25	1	R22	10k0
26	3	R27,R28,R30	47
27	3	R31,R32,R52	1k
28	1	R35	270
29	1	R36	22
30	2	R57,R37	100k
31	1	R41	1k69
32	1	R42	3k30
33	1	R47	220
34	1	R49	1k2
35	1	SW1	SW DIP-4
36	3	U1,U6,U7	TL072SMD
37	1	U2	LM809
38	1	U3	MC68HC908JL3CP
39	1	U4	TLV5626
40	1	U5	MC34064
41	1	Y1	16MHz

6.11.1.1 Settings

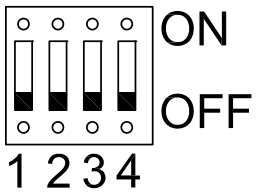
In the dummy load, there are two tabs, one master and one slave.
To make sure they are configured correctly you have to set them through the switch SW1 and jumper JP2.





NO JUMP ON JP2

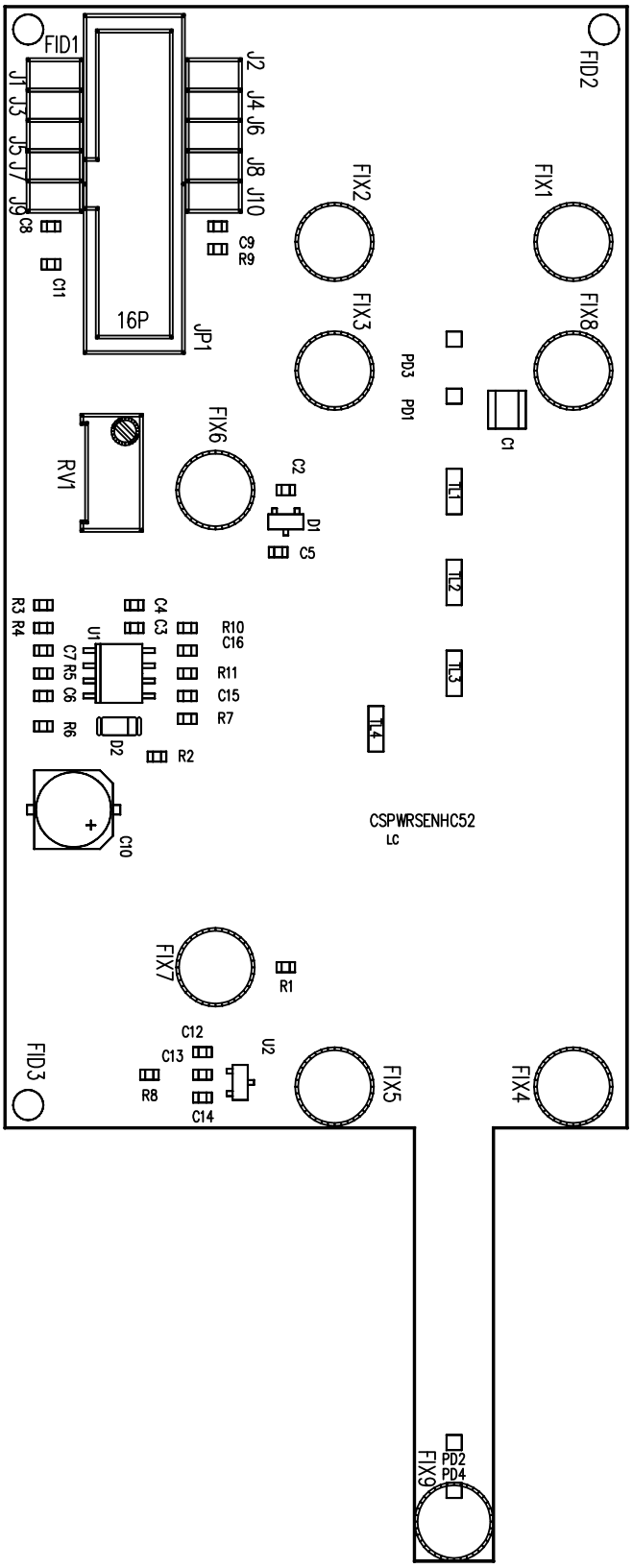
MASTER



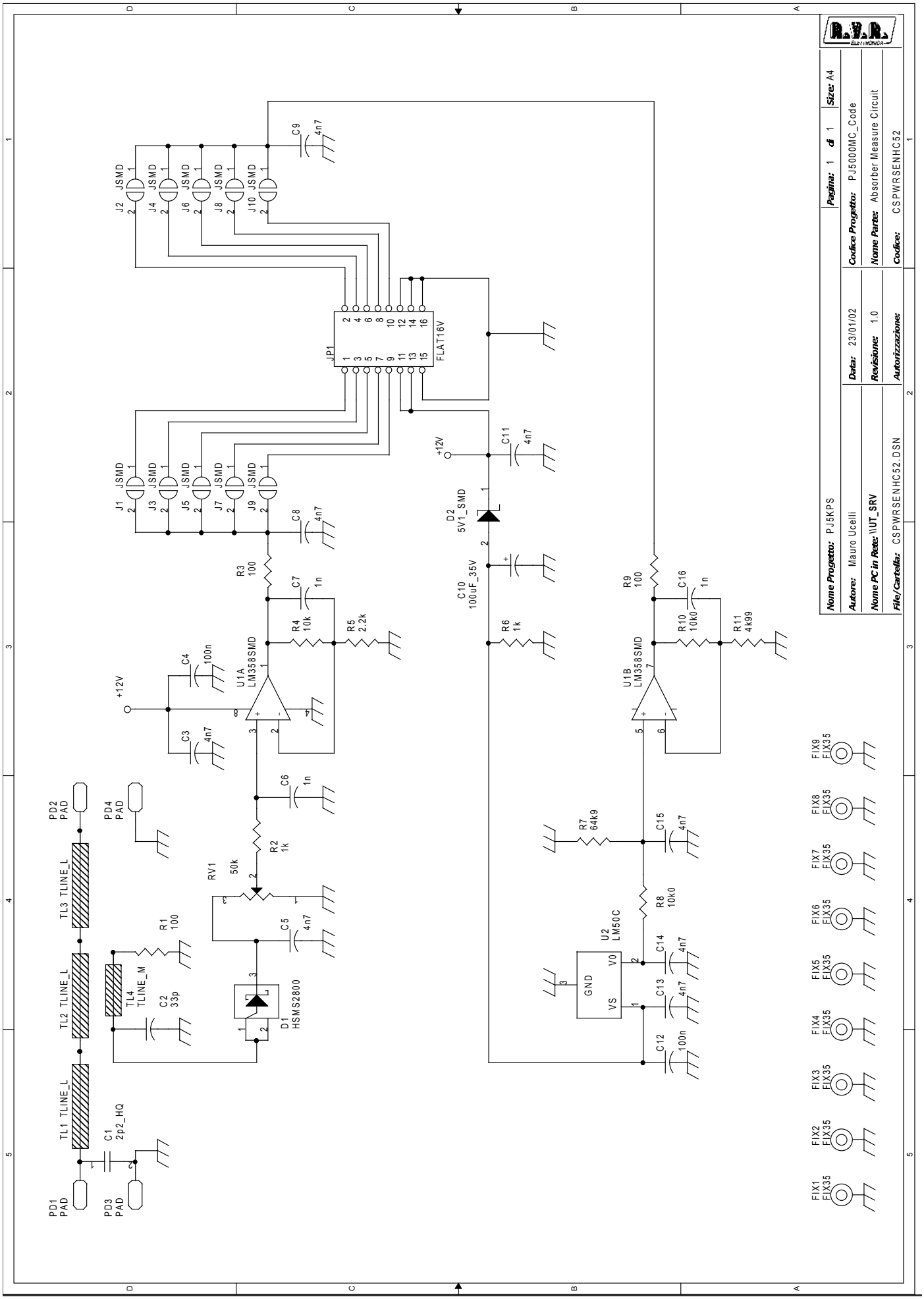
+ JUMP ON JP2

SLAVE

6.11.2 Absorber measure (SLPWRSEBHC52)



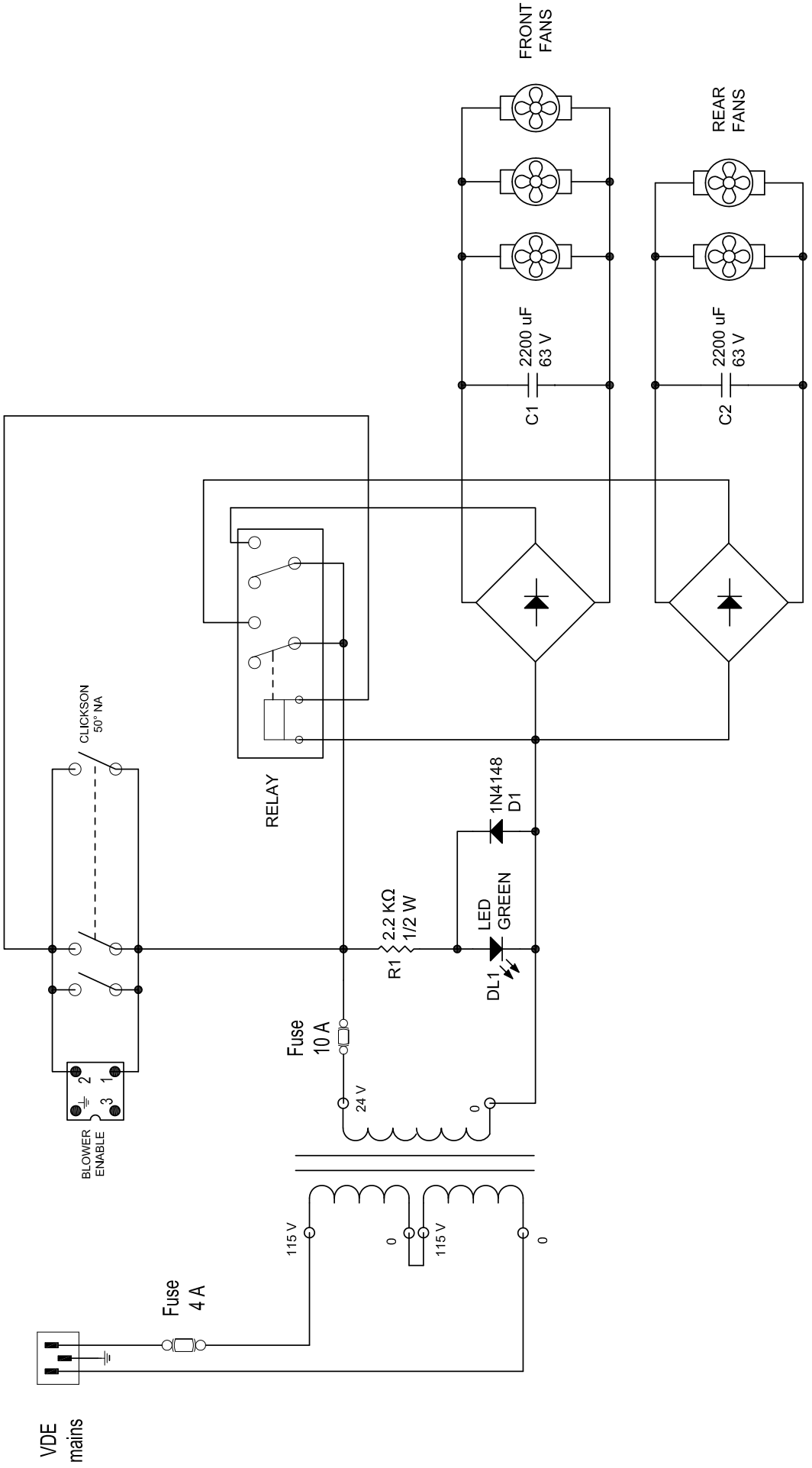
Nome Progetto:	PJ5KPS - Combinatore RF			Pagina: 1 di 1	Size: A4
Autore:	Ucelli - Rev.: Canazza	Data:	09/10/2002	Codice Progetto:	
Nome PC in Rete:	\\UT_SRV	Revisione:	1.0 (DC)	Nome Parte:	Misura absorbers
File/Cartella:	SENHC52_LY.DWG	Autorizzazione:		Codice:	SLPWRSEBHC52
Scala: <>	Materiale: <>	Trattamento:	<>	Profilo:	<>

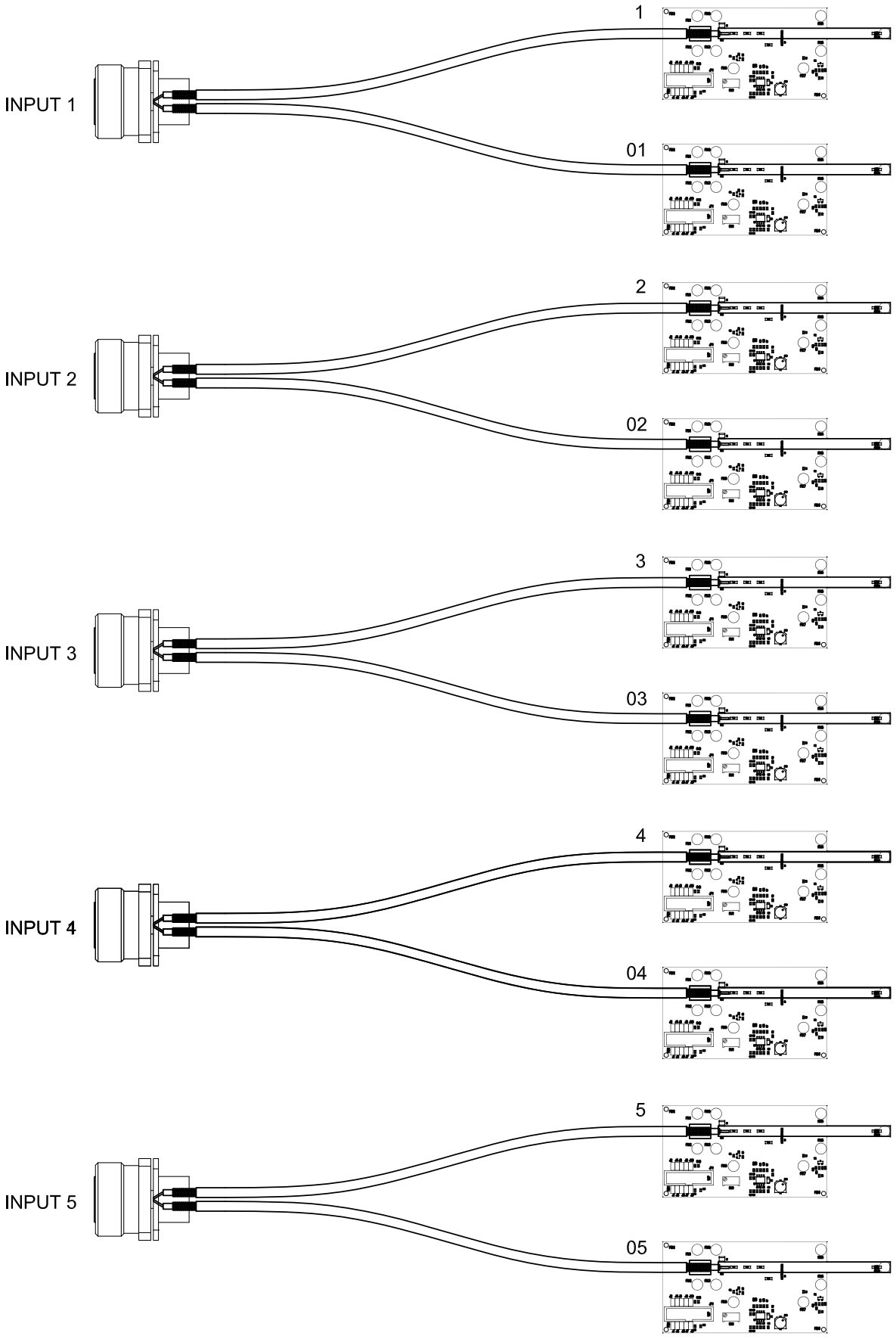

Nome Progetto: PJ5KPS
Autore: Mauro Ucelli
Nome PC in Rete: \\UT_SRV
File/Cartella: CSPWRSENHC52.DSN
Pagina: 1 di 1
Size: A4
Data: 23/01/02
Revisione: 1.0
Autorizzazione:
Codice Progetto: PJ5000MC_Code
Nome Parte: Absorber Measure Circuit
Codice: CSPWRSENHC52
+12V
U1A LM358SMD
U1B LM358SMD
U2 LM50C
JP1 FLAT16V
D1 HSMS2800
D2 5V1_SMD
RV1 50k
C10 100uF_35V
TL1 TLINE_L
TL2 TLINE_L
TL3 TLINE_L
TL4 TLINE_M
PD1 PAD
PD2 PAD
PD3 PAD
PD4 PAD

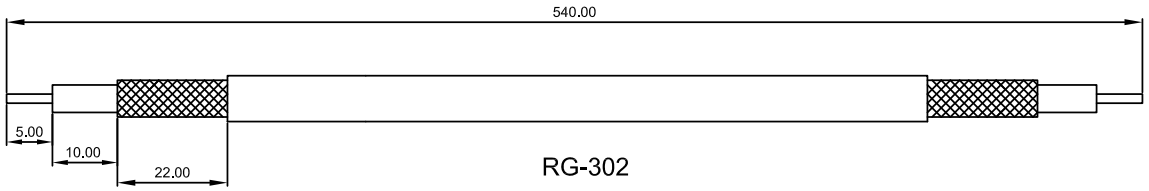
CSPWRSENHC52 Bill Of Materials Page1

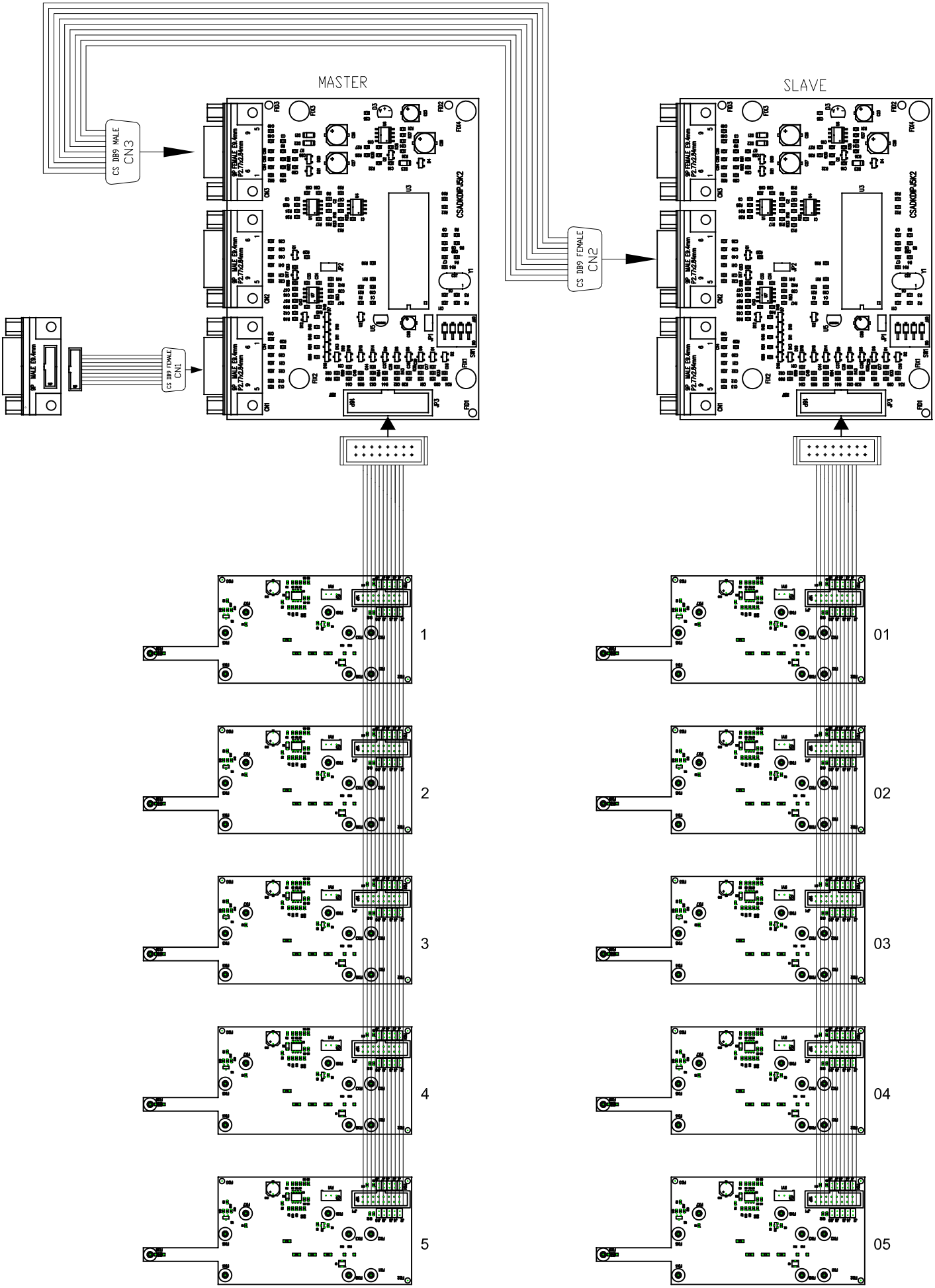
Item	Q.ty	Reference	Part
1	1	C1	2p2_HQ
2	1	C2	33p
3	8	C3,C5,C8,C9,C11,C13,C14, C15	4n7
4	2	C12,C4	100n
5	3	C6,C7,C16	1n
6	1	C10	100uF_35V
7	1	D1	HSMS2800
8	1	D2	5V1_SMD
9	9	FIX1,FIX2,FIX3,FIX4,FIX5, FIX6,FIX7,FIX8,FIX9	FIX35
10	1	JP1	FLAT16V
11	10	J1,J2,J3,J4,J5,J6,J7,J8, J9,J10	JSMD
12	4	PD1,PD2,PD3,PD4	PAD
13	1	RV1	50k
14	3	R1,R3,R9	100
15	2	R6,R2	1k
16	1	R4	10k
17	1	R5	2.2k
18	1	R7	64k9
19	2	R8,R10	10k0
20	1	R11	4k99
21	3	TL1,TL2,TL3	TLINE_L
22	1	TL4	TLINE_M
23	1	U1	LM358SMD
24	1	U2	LM50C

6.11.3 Wiring diagram



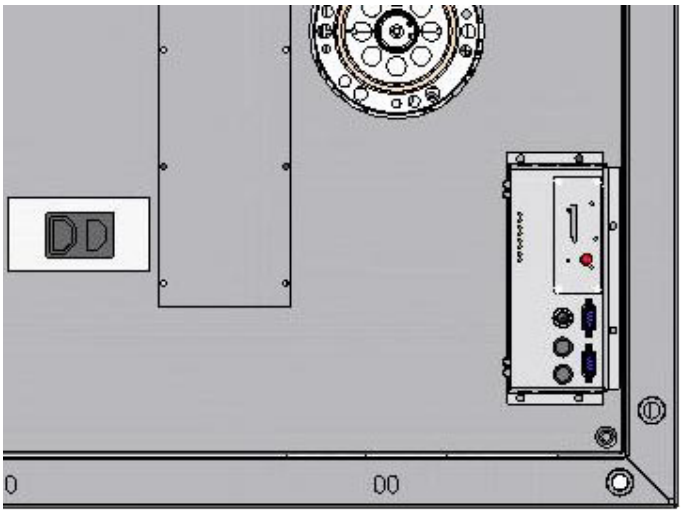

INPUT 1
1
01
INPUT 2
2
02
INPUT 3
3
03
INPUT 4
4
04
INPUT 5
5
05


540.00
5.00
10.00
22.00
RG-302

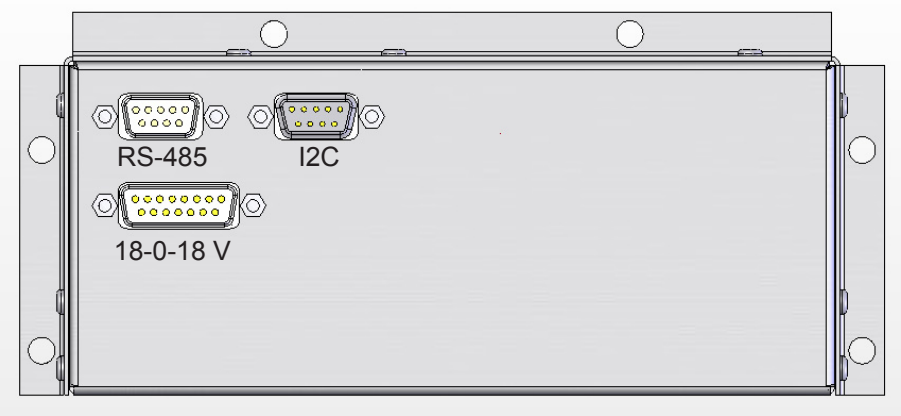

MASTER
SLAVE
CS DB9 MALE
CN3
CS DB9 FEMALE
CN2
CS DB9 FEMALE
CN1
1
2
3
4
5
01
02
03
04
05

7 GSM Telemetry

R.V.R. Elettronica's plug-in series transmitters, may be optionally fitted with the telemetry device that enables the user to remotely check all the machine's working parameters and control some of them, and provides the transmitter with the ability to trigger "alarms" when problems arise while the transmitter is on air, possibly sending GSM Short Messages (SMS) to the maintainer's cellular phone or to any other number stored in the machine's memory. Telemetry is installed on the top rack of the transmitter, at the rear.

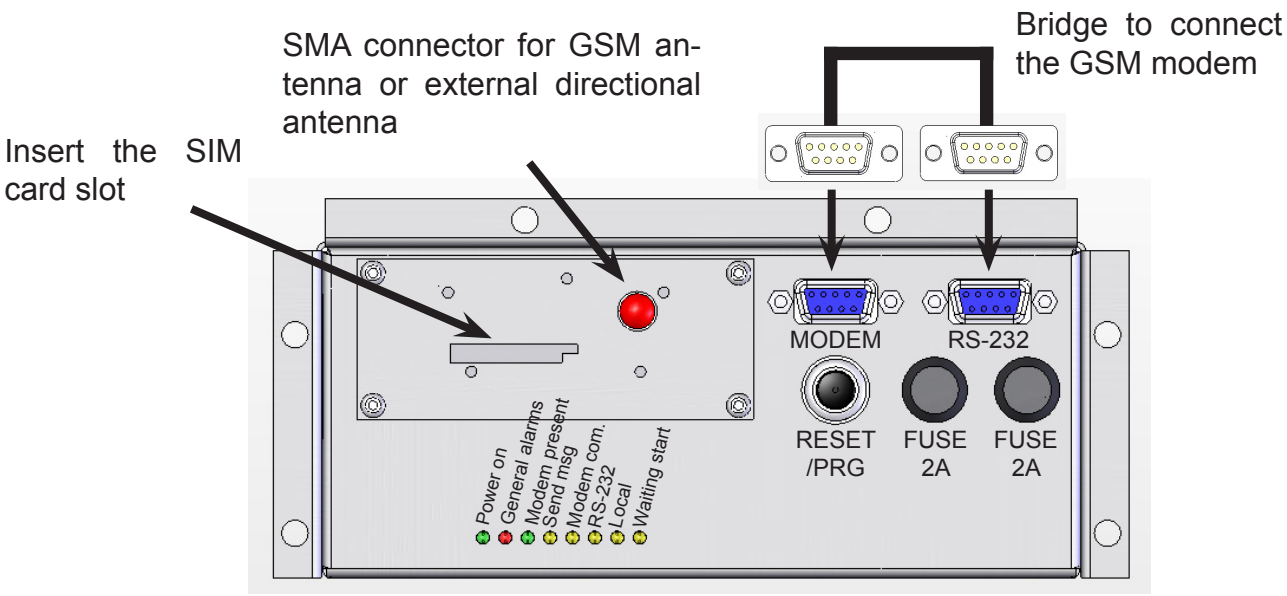


The bottom part of the telemetry contains the following connectors:



RS-485	DB9 male connector for connecting the RS-485 bus from the CU
I2C	DB9 male connector for connecting the I2C bus from the CU
18-0-18 V	DB15 male to connect power from the CU

The top of the telemetry contains the following connectors:

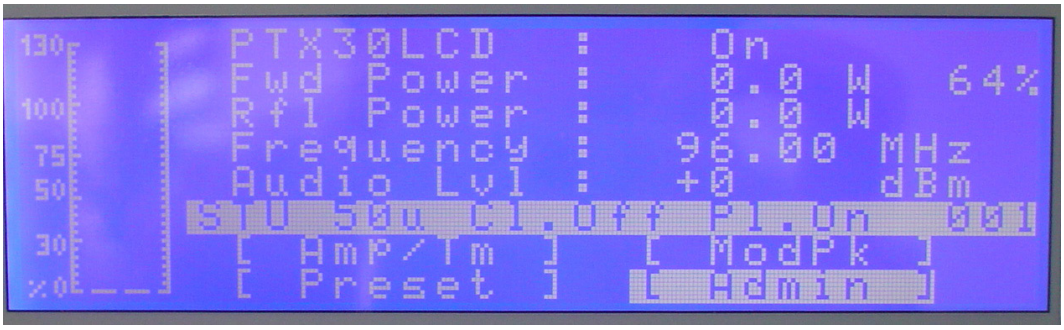


Modem	DB 9 female connector connected to the modem internal GSM
RS-232	DB 9 female connector to connect the GSM modem, with telemetry, or to connect with the PC via RS-232 to the transmitter
Reset/prg	Button to reset the telemetry or programming
Fuse 2A	Fuse protection
Fuse 2A	Fuse protection
Power on	The LED on indicates that the telemetry is powered
General alarms	The LED on indicates that the memory of the telemetry alarms are present
Modem present	The LED on indicates that the GSM modem is present and correctly detected by the telemetry
Send sms	The LED on indicates that the GSM modem is sending SMS messages
Modem com.	The LED on indicates that the modem is connected
RS-232	The LED blinks when you connect your PC to the RS-232 telemetry to communicate with the transmitter using the “Telecon 32bit”
Local	The LED on indicates that the transmitter is in LOCAL (via the selector switch on the CCU) and telemetry will not send alert messages or you can remotely connect to the transmitter
Waiting start	The LED blinks for about 45 on first boot. During this period, the telemetry, it analyzes the whole machine to check status and does not send alerts

Note: you need to enter the bridge supplied with the telemetry between the connector MODEM and RS-232 to connect the GSM modem, otherwise will not work

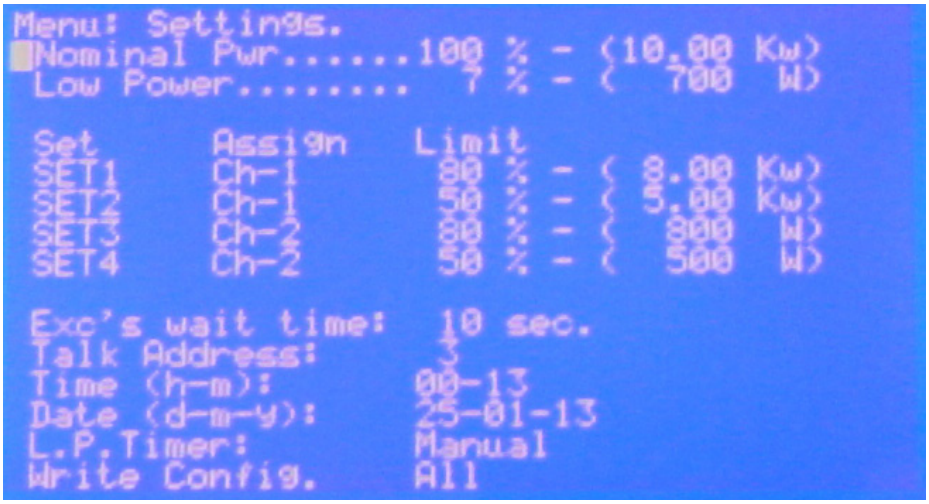
Nota: Please note that to fully deploy the features of this telemetry system, the you will need to sign a contract with a GSM service provider including DATA COMMUNICATIONS.

The use of the telemetry system requires the correct setting of the addresse in the connected pieces of equipment, since they communicate on a shared bus.
Set the Uart address of exciter 1 to “1”, exciter 2 to “2”.
To make this adjustment, from the main menu of the exciter place the cursor light on the “Admin” and click on it.



Scroll down the menu next to the item “GenSt”, click on it and select “Uart Adr.” and set it to 1 on the first exciter (the lower) and 2 on the second (if present).

We must now set the address on the CU, which must be absolutely 3 (this address is already set to factory).
From the main menu (the one that shows the direct and reflected power), press the ESC key and then OK and move the cursor bright, on the “Settings” menu and press OK. Select the line “Talk Address” and press OK, with the UP ‘and DOWN keys’ set the parameter 3.



7.1 Dial-up via mobile

The commands that can be sent to the transmitter using SMS messages are as follows:

Command	Reply	Description
INFO	Station: “station name”- ID: “ID number”- FWD: “value”- RFL: “value” UNBAL: “value” TX On (or TX Off or TX StdBy)- Low Power / *Nom Power* Audio Present / Audio Absent Alarm Present / Alarm Absent	Information about the transmitter’s status
TXON	Station: “station name”- ID: “ID number”- TX is On -	Switching on the transmitters
TXOFF	Station: “station name”- ID: “ID number”- TX is Off -	Switching off the transmitters
LOWPWR	Station: “station name”- ID: “ID number”- LowPwr OK-	Low power setting
NOMPWR	Station: “station name”- ID: “ID number”- NomPwr OK-	Nominal power setting
ALARM	Station: “station name”- ID: “ID number”- Alarm: “List of the alarms in memory”-	List of the alarms in memory
RESET	Station: “station name”- ID: “ID number”- ALARM RESET OK-	Resetting the alarms in memory

Every time you send a command must always return back a reply message, to confirm that the command was received and executed.
The reply message may arrive within a maximum time of 5 min. After this time the command is void.

WARNING: The transmitter must be in REMOTE otherwise not receive any command.

7.3 Alarms

These are the alarms that the transmitter can send:

1	Foward Power	The power has dropped below the value set in SET2 (menu settings of the CU)
2	Reflected Power	The power has risen above the value set in SET4 (menu settings of the CU)
3	Unbalanced Power	The power on the dummy load has excee-ded the 1000 W
4	No Audio PTX1	No audio input to PTX1
5	No Audio PTX2	No audio input to PTX2
6	Mains Fault (only if there is the UPS)	Is no longer the power supply, the transmit-ter is turned off, the UPS takes on the logic control, modulators and telemetry
7	Fault Mod 1	Module 1 has shut down
8	Fault Mod 2	Module 2 has shut down
9	Fault Mod 3	Module 3 has shut down
10	Fault Mod 4	Module 4 has shut down
11	Fault Mod 5	Module 5 has shut down
12	Mains OK	It is not an alarm, is sent the first time you turned on the telemetry or when the mains voltage returns

8 Installation and use

This chapter contains the basic instructions for installing and using the PJ10KPS-CA amplifier. If necessary, more in-depth information about the operating principles may be traced in the next chapters.

8.1 Assembly

For practical reasons and for transport safety, the machine is usually supplied disas-sembled to the customer. The assembly procedure is rather simple and can be car-ried out by any qualified technician.

Caution: In order to avoid the risk of damaging the machine and/or of injuring the operators, it is advisable to closely adhere to the instructions provided below. always respect all the safety regulations and standards in force.

Identify the machine components:

- The rack (various components are assembled, such as the coupler, the splitter, the control unit, the main blower) [Figure 5-1 a)]
- The 5 RF modules [Figure 5-1 b)]
- The exciters [Figure 5-1 d)]. (As a rule the amplifier is supplied as a complete transmitter. This example shows two PTXLCD exciters produced by R.V.R. Elettronica. Usually the exciters are pre-assembled inside the rack).

Check that all the components are in perfect working order. Should there be any kind of problem, for instance if there is any damage caused by the transport of the components, read the instructions associated with the Warranty at the beginning of this manual (chapter 2).

1. Install the rack in the location where the transmitter will work. The rack is mounted on wheels for simplifying its movement, therefore after having positioned it where expected, it is advisable to use the four screws at the bottom of the rack to steady it perpendicular to the ground.

   The transmitter is cooled by forced ventilation. The air outlet is on the machine's roof whereas in the standard configuration the air intake is envisaged at the back of the machine. If you opt for this solution, install the machine at least 50 cm. away from the back wall, so that air can flow under optimal conditions.

2. Remove the protection panels of the RF modules .

a)

b)

d)

Figure 5.1

3 **Insert the first amplifying module into the RF modules compartment** [Figure 5-2].

Figure 5.2

The modules have a groove at the top and one at the bottom: insert the modules so that the guides in the compartment fit into these grooves. Slide the module until the two fixing screws fit into their seats. Then tighten the fixing screws at the same time so that the module inserts into its compartment remaining parallel until it is perfectly in place.

4. Connect the machine's main power supply cable. Route the cable (5-pole type) through the raceway on the machine's roof [Figure 5-5 a)] and fix the conductors to the terminals of the top [Figure 5-5 b)].

Figure 5.5a

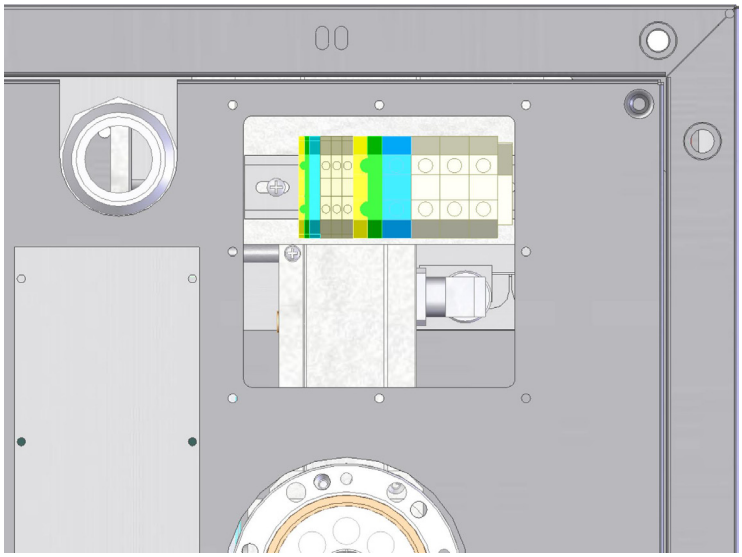
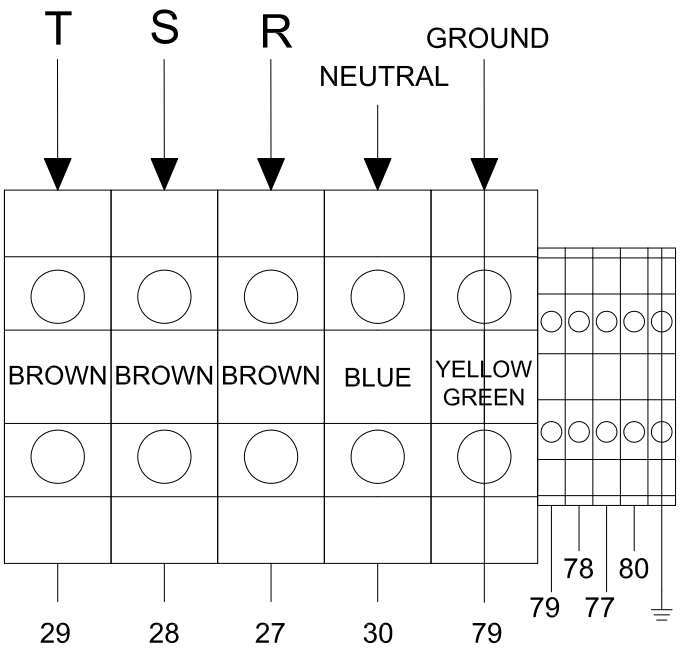


Figure 5.5b



Caution: The connection of the machine to the electric alimentation is performed fixing to a 5 poles cable with bare terminals to a terminal block. Making sure without any possibility of error that the cable is not under tension while working on it.
It is reccomended not to turn on the machine without first have connected the RF exit to the antenna or to the dummy load!
The PJ10KPS-CA requires a three power supply 3F (black, brown and grey) + N (blue) + GND (green yellow) able to give 50A for phase. Keep this requirement in mind in connecting to the personal distribution board.

5. Reposition the protection panels of the RF modules.

6. If the PJ10KPS-CA was not supplied complete with pre-assembled exciters, insert and connect the exciters into the appropriate housings.

8.2 First start

This section describes the procedure for powering-on the machine the first time. For simplicity's sake, the automatic control capacities of the exciters are temporarily disabled.

8.3 Preliminary operation

Before activating this piece of equipment, the necessary connections must be performed, and in particular:

- Power supply (MUST BE EQUAL TO WHICH HAS BEEN DESIGNED THE MACHINE, OTHERWISE YOU MIGHT PERMANENTLY DAMAGE, **R.V.R. ELETTRONICA S.p.A. DOESN'T ASSUME RESPONSIBILITY.)**
- Modulating signals
- RF load (antenna feeder or dummy load).

The machine's RF output is the "EIA 1 5/8" flanged type and is accessed on the roof of the PJ10KPS-CA. If a dummy load capable of dissipating the RF power generated by the transmitter is available, it is advisable to run the first tests by connecting to it rather than to the transmission antenna.

8.4 Power-on

When powering-on the transmitter the first time, perform the operations outlined in the table below.

The “Result” column indicates the immediate results of the operations performed plus a few indications that confirm that the machine is working efficiently.

Should any inconsistencies occur as compared to these indications, interrupt the procedure and identify the reason for the malfunction before resuming the procedure.

Operation	Result
Turn the “Mains” switch	The whole transmitter is powered. The machine is activated in the same status it was in when it was turned off the last time
Press the OFF key of the control unit	RF emission by the transmitter is inhibited; the exciters are off; the RF amplifier modules are off
Press the EXCITER CHANGEOVER key of the control unit	The automatic management for the exciters changeover is disabled. The MANUAL LED must be on (otherwise press the key again)
Press the STDBY key of the control unit	The exciters are turned on in interlock status. The RF amplifying modules stay disabled. Being in manual modality, the exciters could be unlocked to verify the operation (see 8.5).
Set the parameters of the control unit	This procedure is described in chapter 5 on in this manual. The control unit communicates the nominal power and reduced power values to the RF modules. It also handles the coaxial relays so that the on air exciter is the desired one and sets the exciter to ON mode
Set the exciters	Adhere to the instructions of the exciters used for setting the required work frequency on the exciters. Regulate the output power of the exciters to 20 W.
Press POWER LOWER and ON	The current exciter is activated (the interlock is released from the exciter) and its power emission is enabled. The power emitted by the PJ10KPS-CA amplifier increases gradually until it attains the level that had been set previously as “Reduced power”. Check the emitted power level by means of the analog instrument with the selector switched to FWD PWR position
Press NOMINAL POWER	Power supplied by PJ10KPS-CA increases and attains the set nominal value. Check it on the analog instrument.

When the transmitter is on and works at its nominal power, the whole series of “accessory” checks and settings deemed necessary may be carried out before starting up the apparatus.

8.5 Control unit settings

The settings of the control unit that are required for starting up the machine, mentioned in the powering-on procedure, are the following:

1. Setting of the power levels
2. Setting of the on air exciter

Before performing the first operation, click the ESC and OK button. The display shows the screenful for selecting the menus [Figure 5-7]. Click the arrow keys until the cursor highlights the line associated with the Setting menu. Click OK: the software will show the associated screenful on the display [Figure 5-8].

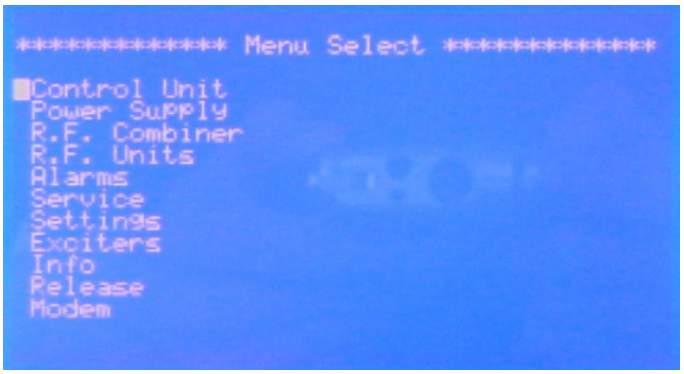


Figure 5-7

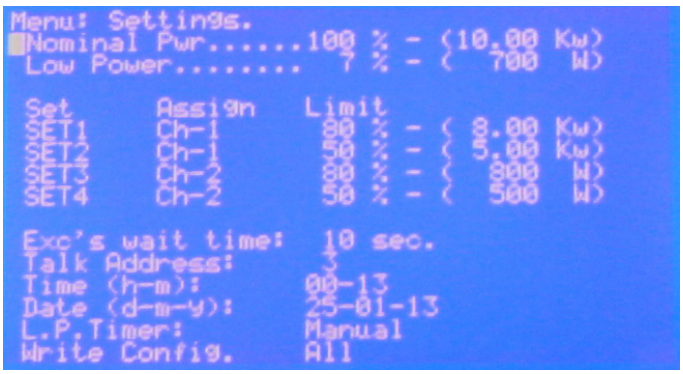


Figure 5-8

On having accessed the Settings menu, use the arrow keys to select the nominal power line (Pwr. Out) and click OK. Use the arrow keys to decrease or increase the indicated percentage value up to the required level. Click OK again to set this value. Repeat the operation for the line associated with the reduced power level (Pwr. Lower).

NB

The new power level is transmitted to the combiner module and then stored in EEPROM only when the ESC button is clicked.

When inside this menu, it is advisable to check the date and time lines and update them if necessary. Note: the date and time are used only for marking the events in the alarms register.

NB

The date and time do not need to be updated in the transmitter in order for it to work efficiently.

On having completed these settings, click ESC to return to the selection screenful.

In order to set the on air exciter, select the Exciters menu [Figure 5-9]. Take into consideration the On Air Exciter line: the number to the right indicates the exciter being used. To change it simply highlight the line and click OK.

To have the correct efficiency of the transmitter, the exciters should stay at 20/22 W, unless stated otherwise indicated on the modulator, depending on the version and frequency. The power of the transmitter should be adjusted from the menu “Settings”.

DO NOT RESPECT THIS COULD DAMAGE THE EQUIPMENT LDMOS, RVR ELETTRONICA S.P.A. DISCLAIMS THE WARRANTY.

The exchange of the exciters is assisted from the software, that is when the commutation is carried out , the interlock comes systematized in the correct way independently from like they were. The interlock could be modified also manually in case of necessity.

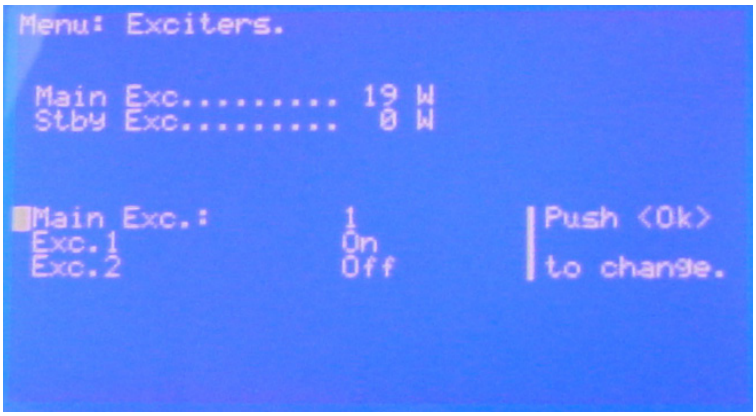


Figure 5-9

8.6 Management of the exciters

The control unit can perform the automatic changeover between exciters if one malfunctions. The Manual LED on the panel indicates, when it is lighted up, that the automatic changeover function is disabled. In order to enable it, click the EXCITER CHANGEOVER button and check that the LED turns off.

In function of the state of the PJ10KPS-CA automatism, the behavior of the machine will be various. In this chapter are described the different cases.

8.6.1 Start-up from power-on with exciters in manual mode

When powering on the machine with the exciters in manual mode, the apparatus does not perform any check, both mute RF signals are active and the changeover relay remains in standby status. Use the exciters menu to activate an exciter.

NB

This is why, if the transmitter is left in manual mode, any momentary power failure will cause the transmitter to be inactive when turned on again. Therefore it is advisable to leave the PJ10KPS-CA in automatic mode when you are not performing maintenance operations.

8.6.2 From OFF to ON with exciters in manual

When switching from OFF (or STDBY) to ON with the exciters in manual mode, the apparatus does not perform any check and the exciter that is currently set to on air is the one that is aired.

If the mains signal is not OK, the exciters turn off automatically.

If the maximum drive power is exceeded during operations, the PJ10KPS-CA is set to fault status and power supply is cut to the exciters. A message in the alarms menu signals this fault.

When the apparatus is set to STDBY, the mute RF signals of the exciters are not activated and may be modified by the operator.

When the apparatus is set to EXT INT or AUX INT, the mute RF signals of the exciters are not activated and may be modified by the operator.

8.6.3 Automatic changeover

When the PJ10KPS-CA is in the exciter automatic changeover mode, the power emitted by the on air exciter is checked constantly. If at any time the on air exciter is no longer good (i.e. power drops to below the preset level), the apparatus is kept operational whereas the exciter connected to the internal Dummy Load turns on. If the latter one is good (i.e. it is capable of supplying the required power), then the two exciters are changed over. Instead if the alternative exciter is not good, no changeover takes place, the control unit commands the mute RF of the exciter to Dummy Load, it waits 120 s. and repeats the attempt. This procedure is repeated indefinitely until one of the two exciters is considered to be good.

During the whole length of time during which there is no good exciter, the PJ10KPS-CA keeps the WAIT LED on for signaling this status.

Each exciter is fitted with its own mute RF. On being commanded, the piloting signal must return to zero within 3 seconds at the most. If this does not occur, the fault is recorded by an error message that is entered in the alarms menu.

If the mains signal is not OK, the exciters turn off automatically. If the piloting power exceeds the limit during operations, the PJ10KPS-CA is set to the FAULT status and the power supply of the exciters is turned off. A message in the alarms menu signals the fault. Keep in mind that the operator's intervention is required to exit from the FAULT status.

If the MAINS signal coming from the bus is not OK, the exciters are all turned off. As soon as the MAINS signal is regular again, the evaluation cycle of the exciters begins (see 8.6.4).

When the apparatus is set to STDBY, the mute RF signals of the exciters are activated and as such both exciters are inhibited. If the ON key is pressed, the system re-evaluates both exciters in the same manner as in the procedure from OFF to ON (see 8.6.4).

When the apparatus is set to EXT INT or AUX INT, the mute RF signals of the exciters are activated and therefore both exciters are inhibited. When the external interlocks are released, the system re-evaluates both exciters as during the phase from OFF to ON (see 8.6.4).

8.6.4 Phase from ON to OFF

When the apparatus is set to OFF status and you press the ON button, the power supply of the exciters is activated and the logic starts to evaluate the exciters. During the evaluation phase, the WAIT LED stays ON.

When the apparatus is turned OFF, it memorizes the exciter on air. Consequently when the machine restarts it can attempt to restore the previous conditions. On the machine restarting, if the exciter that is to be aired does not attain the preset power level whereas the spare one is operational, the apparatus performs the changeover when the evaluation time (120 s.) expires.

On the machine restarting, if both exciters do not attain the preset power level, the apparatus airs the one that had been present when the machine was turned off, after the evaluation time has expired.

8.6.5 Start-up with exciters in automatic mode

The sequence run by the PJ10KPS-CA, when the power supply is activated while it is already in ON status and the exciters are in automatic mode, is identical to the one run for switching from OFF to ON. The only difference is that a screenful displays the countdown for determining the fault of the exciters. During this phase the manual/automatic button is inhibited and in order to set the exciters to manual mode you must press the OFF button of the apparatus.

8.6.6 Audio alarm

The control unit of the PJ10KPSCA can manage a fault signal, for each exciter, which normally has an “Audio Alarm” meaning. The control software of the PJ10KPS-CA does not intervene in triggering these signals since they must be checked by the exciters (or by any other connected devices).

The Audio Alarm signals are made up of two inputs for the logical signals on the parallel interface and on the “mute RF” command connector of the exciters.

The control unit manages these signals just like it manages the power good signals:

- Each “Audio alarm” signal is associated with its own exciter
- If the audio signal, associated with the exciter that is currently on air, enters an alarm status, the PJ10KPS-CA waits for the time configured in the exciter menu before it attempts the restoring operation
- If the audio of the aired exciter is still in alarm status on the elapsing of the aforesaid time interval, the control unit checks if the audio of the exciter on the dummy load is regular. In this case the changeover between the exciters is performed.

Observe the following differences as compared to the case in which power is missing:

- The management of the “Audio alarm” signals is not active during the start-up phase and during the switching phase from OFF to ON, but only when the exciters are working in automatic.
- In the standard configuration, the aforesaid sequence continues until the audio signal associated with one of the exciters becomes regular again. In the “N+1” configuration, the switching attempt is performed only twice, after which the PJ10KPS-CA enters the fault status.
- An Audio Alarm output is provided on the parallel interface: this signal is activated (with no delays) when the audio of the exciter that is currently on air is in alarm status.

8.6.7 Protection and alarms

The PJ10KPS-CA contains a complete protection and alarms system, both at the individ-ual modules level and at the control unit level.

The modules are fitted with a micro-processor-based system that manages any malfunctions locally. The associated information is communicated to the control unit for displaying and storing the events and for the centralized management of the events that require it.

Certain LEDs of the PJ10KPS-CA panel are dedicated to the management of the alarms:

LED	Description
WARNING	This LED indicates a warning (something is not correctly working, but the amplifier is still working)
FAULT	This LED indicates a fault (the amplifier is shut off, the operator's intervention is required)
WAIT	This LED indicates the wait status (the amplifier is temporarily off, it will be restarted as soon as the reason that keeps it from working will be removed, or after a fixed amount of time depending on the reason of the intervention of the protection system)

The ALARM RESET button is used for resetting the alarms and restarting the machine.

A complete description of the alarms and protection system is given in chapter 5.3.

Revision History

Date	Version	Reason	Editor
30/05/2013	2.0	New version	Nicolini D.
18/07/2013	2.1	Updating	Nicolini D.

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