



SCML1+1SL (/N1, /N2, /N3 & /N4)

USER MANUAL
VOLUME 1



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Date	Version	Reason	Editor
17/02/2017	2.0	Major upgrades and reorganization of chapters	J. H. Berti
10/02/2023	2.1	Menu and interior upgrades	J. H. Berti

SCML1+1SL (/V1, /V2 , /V3 & /V4) - User Manuals
Version 2.1

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Notification of intended purpose and limitations of product use

This product is a FM transmitter intended for FM audio broadcasting. It utilizes operating frequencies not harmonised in the intended countries of use. The user must obtain a license before using the product in intended country of use. Ensure respective country licensing requirements are complied with. Limitations of use can apply in respect of operating frequency, transmitter power and/or channel spacing.

Declaration of Conformity

Hereby, R.V.R. Elettronica, declares that this FM transmitter is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.



Technical Description

		SCML1+1SL		
Parameters		U.M.	Value	Notes
GENERALS				
Working temperature		°C	-10 to +50	
Working Humidity		%	95 (Without condensing)	
POWER REQUIREMENTS				
AC Power Input	AC Supply Voltage	VAC	110 + 230 ±15%	
	AC Apparent Power Consumption	VA		
	Active Power Consumption	W		
	Power Factor			
	Overall Efficiency	%		
DC Power Input	Connector		VDE IEC Standard	
	DC Supply Voltage	VDC	24	
	DC Current	ADC	< 2	
MECHANICAL DIMENSIONS				
Physical Dimensions	Front panel width	mm	483 (19")	19" EIA rack
	Front panel height	mm	44 (1.7,32") 4HE	convertire in pollici
	Overall depth	mm	390	
	Chassis depth	mm		escluso il pannello, esclusi i connettori, convertire in pollici
Weight		kg	about 6,5	
VARIOUS				
Cooling			//	
Acoustic Noise		dBA	0	
INPUTS				
EXC1	Connector		DB15 M	
EXC2	Connector		DB15 M	
PA1 HC	Connector		DB25 M	
PA2	Connector		DB25 M	
ANALOG IN or FOLDBACK	Connector		BNC	
	Impedance	Ohm	50	
ANALOG IN	Connector		BNC	
	Impedance	Ohm	50	
OUTPUTS				
EXT SCM AUD	Connector		DB 9 F	
INTERLOCK 1	Connector		BNC	
	Impedance	Ohm	50	
INTERLOCK 2	Connector		BNC	
	Impedance	Ohm	50	
INPUTS/OUTPUTS				
IN/OUT 1	Connector		BNC	
	Impedance	Ohm	50	
IN/OUT 2	Connector		BNC	
	Impedance	Ohm	50	
COMMON	Connector		BNC	
	Impedance	Ohm	50	
FUSES				
On Mains			1 External fuse F 3,15 T - 5x20 mm	
HUMAN INTERFACES				
User			Graphical LCD – 16 characters x 2 lines with Encoder	
Signalling LEDs / Synoptical			Yes	
SERVICE			DB 9 F	On Front Panel
I2C			DB 9 F	
TC/TS			DB 25 F	

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IMPORTANT



The symbol of lightning inside a triangle placed on the product, evidences the operations for which is necessary gave it full attention to avoid risk of electric shocks.



The symbol of exclamation mark inside a triangle placed on the product, informs the user about the presence of instructions inside the manual that accompanies the equipment, important for the efficacy and the maintenance (repairs).


1. Preliminary Instructions

• General foreword

The equipment in object is to considering for uses, installation and maintenance from "trained" or "qualified" staff, they conscious of the risks connected to operate on electronic and electrical circuits electrical.


The "trained" definition means staff with technical knowledge about the use of the equipment and with responsibility regarding the own safety and the other not qualified staff safety place under his directed surveillance in case of works on the equipment.

The "qualified" definition means staff with instruction and experience about the use of the equipment and with responsibility regarding the own safety and the other not qualified staff safety place under his directed surveillance in case of works on the equipment.


 **WARNING:** The machine can be equipped with an ON/OFF switch which could not remove completely voltages inside the machine. It is necessary to have disconnected the feeding cord, or to have switched off the control panel, before to execute technical operations, making sure himself that the safety connection to ground is connected.

The technical interventions that expect the equipment inspection with circuits under voltage must be carry out from trained and qualified staff in presence of a second trained person that it is ready to intervene removing voltage in case of need.


R.V.R. Elettronica SpA doesn't assume responsibility for injury or damage resulting from improper procedures or practices by untrained/unqualified personnel in the handling of this unit.


 **WARNING:** The equipment is not water resistant and an infiltration could seriously compromise its correct operation. In order to prevent fires or electric shocks, do not expose the equipment to rain, infiltrations or humidity.

Please observe all local codes and fire protection standards during installation and use of this unit.

 **WARNING:** The equipment has to its inside exposed parts to risk of electric shock, always disconnect power before opening covers or removing any part of this unit.

Fissures and holes are supplied for the ventilation in order to assure a reliable efficacy of the product that for protect itself from excessive heating, these fissures do not have to be obstructed or to be covered. The fissures doesn't be obstructed in no case. The product must not be incorporated in a rack, unless it is supplied with a suitable ventilation or that the manufacturer's instructions are been followed.

 **WIRING:** This equipment can irradiate radio frequency energy and if it's not installed following the instructions contained in the manual and local regulations it could generate interferences in radio communications.

 **WIRING:** This device has a connection to ground on the power cord and on the chassis. Check that they are correctly connected.

Operate with this device in a residential ambient can cause radio disturbs; in this case, it can be demanded to the user to take adequate measures.

Specifications and informations contained in this manual are furnished for information only, and are subject to change at any time without notice, and should not be construed as a commitment by R.V.R. Elettronica SpA.

The R.V.R. Elettronica SpA assumes no responsibility or liability for any errors or inaccuracies that may appear in this manual, including the products and software described in it; and it reserves the right to modify the design and/or the technical specifications of the product and this manual without notice.

• **Warning regarding the use designated and the use limitations of the product.**

This product is an transmitter radio indicated for the audio broadcasting service in frequency modulation. It uses working frequencies that are not harmonized in the states of designated user.

The user of this product must obtain from the Authority for spectrum management in the state of designated user the appropriate authorization to use the radio spectrum, before putting in exercise this equipment.

The working frequency, the transmitter power, let alone other specifications of the transmission system are subject to limitation and defined in the authorization obtained.

2. Warranty

R.V.R. Electronics S.P.A. guarantees absence of manufacturing defect and the good operation for the products, within the provided terms and conditions.

Please read the terms carefully, because the purchase of the product or acceptance of order confirmation, constitutes acceptance of the terms and conditions.

For the last legal terms and conditions, please visit our web site (WWW.RVR.IT) wich may also be changed, removed or updated for any reason without prior notice.

Warranty will be void in cases of opened products, physical damage, misuse, modification, repair by unauthorised persons, carelessness and using the product for other purpose than its intended use.

In case of defect, proceed like described in the following:

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

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.

- 2 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;

- 3 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



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

- 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

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 (**Figure 1**).

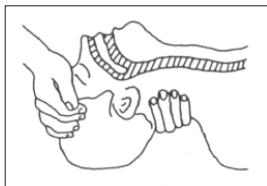


Figure 1

- clear out mouth if necessary and observe for breathing
- if not breathing, begin artificial breathing (**Figure 2**): tilt head, pinch nostrils, make airtight seal, four quick full breaths. Remember mouth to mouth resuscitation must be commenced as soon as possible.



Figure 2

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

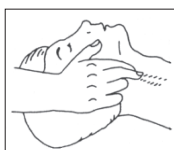


Figure 3



Figure 4

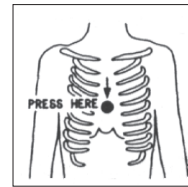


Figure 5

- In case of only one rescuer, 15 compressions alternated to two breaths.
- If there are two rescuers, the rhythm shall be of one breath each 5 compressions.
- Do not interrupt the rhythm of compressions when the second person is giving breath.
- 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 new **SCML1+1SL** changeover family can be connected to all RVR standard equipment, as well with all kind of transmitting systems, and are characterized by:

- **SCML1+1SL/V1**: version with external Spinner relay mod. BN754067 and BN754098, for transmitters with output power range of 150W to 1000W:



- **SCML1+1SL/V2**: version with internal relay, for transmitters with output power lower than 150W:



- **SCML1+1SL/V3**: version with external Spinner relay mod. BN512690, BN640075 and BN941912, for transmitters with output power higher than 1000W:



- **SCML1+1SL/V4**: version with interface for customized external relay:



A clear and immediate representation of the working conditions through synoptic indication on the position of changeover.

Connection for the management of the main signals: Telecontrol (TC) and Telesignal (TS) are available on I/O interface.

4.1 Unpacking

The package contains:

- 1 **SCML1+1SL**
- 1 User Manual
- 1 Cavo di Alimentazione da Rete

The following accessories are also available from Your R.V.R. Dealer:

- **Accessories, spare parts and cables**

4.2 Frontal Panel Description

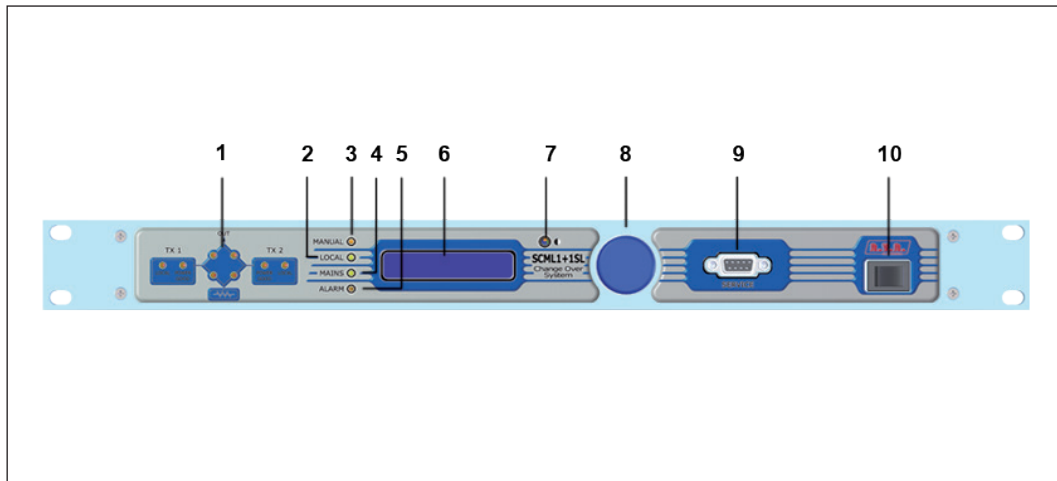


Figure 4.1

[1] SYNOPTIC	Series of LED for the instantaneous vision of the exchange condition. Shows the position of coaxial relay, the state of dummy load and of transmitter connects to it.
[2] MANUAL	Yellow LED, lit when the change-over is set up in order to allow the control exclusively from the customer, inhibiting the automatic management of the equipment functionalities.
[3] LOCAL	Yellow LED, lit when the change-over is set up in order to receive controls exclusively from the encoder, inhibiting any source of telecontrol.
[4] MAINS	Yellow LED, lit when the change-over is supplied at 24V.
[5] ALARM	Red LED, lit when the change-over has had problems during the phase of exchange between the two transmitters.
[6] DISPLAY	Liquid crystals display (2 rows, 16 characters).
[7] CONTRAST	Display contrast adjusting trimmer.
[8] ENCODER	Knob and button in order to software control.
[9] SERVICE	DB9 connector for factory parameters programming.
[10] POWER	Mains switch.

4.3 Rear Panel Description of SCML1+1SL/V1

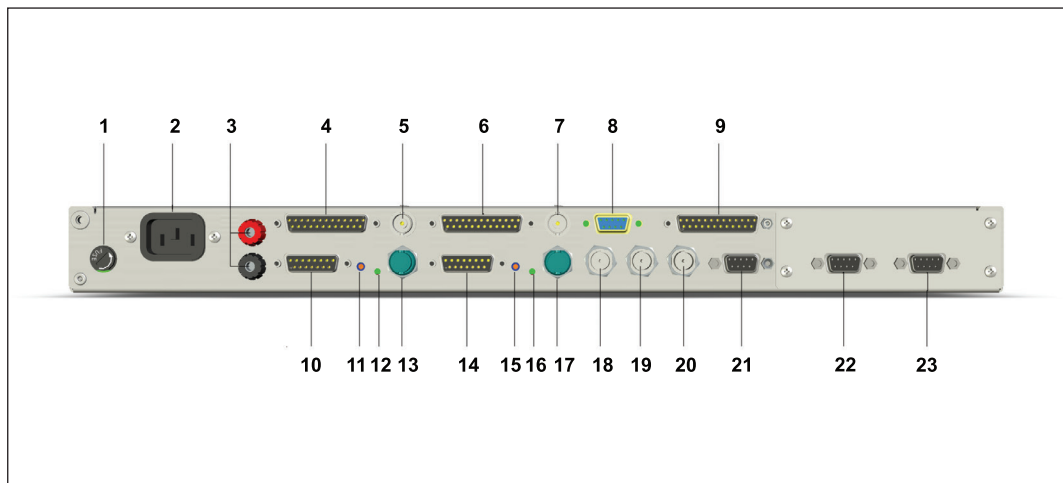


Figure 4.2

- | | |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------|
| [1] MAIN FUSE T1.6 | Fuse carrier for the fuse (1.6AT 5x20) for mains supply. |
| [2] MAINS VOLTAGE | Standard IEC connector for mains supply 110 ÷ 230 V, +10/-15%. |
| [3] 24VDC | Socket for 24Vdc external power supply. |
| [4] PA1 /HC | DB25 connector, for input of TELEMETRY connector coming from an (i.e.: PJ2000M-C) or an hybrid coupler (i.e.:HC2/2) del TX1. |
| [5] ANALOG IN or FOLDBACK | BNC connector, for the acquisition of an RF signal < 10dBm coming from an RF TEST or for the foldback signal of TX1. |
| [6] PA2 | DB25 connector, for input of TELEMETRY connector coming from an (i.e.: PJ2000M-C) of TX2. |
| [7] ANALOG IN | BNC connector, for the acquisition of an RF signal < 10dBm coming from an RF TEST of TX1. |
| [8] I ² C | DB9 connector for I ² C bus network. |
| [9] TC / TS | DB25 connector, for the management of main signals of telecontrol and telesignalling. |
| [10] EXC1 | DB15 connector, for input of REMOTE connector coming from an exciter (i.e.: BLUES30NV) of TX1. |
| [11] ADJ | Trimmer for intervention level adjustment on ANALOG IN signal [5]. |
| [12] PWR GOOD | Green Led, lit when the Power Good threshold is passed. |
| [13] INTERLOCK | BNC connector, for the interlock signal coming from transmitter system TX1. |
| [14] EXC2 | DB15 connector, for input of REMOTE connector coming from an exciter (i.e.: BLUES30NV) of TX2. |
| [15] ADJ | Trimmer for intervention level adjustment on ANALOG IN signal [7]. |
| [16] PWR GOOD | Green Led, lit when the Power Good threshold is passed. |
| [17] INTERLOCK | BNC connector, for the interlock signal coming from transmitter system TX2. |
| [18] IN/OUT1 | BNC connector, for audio input or output of TX1. |
| [19] COMMON | BNC connector, for audio output or input of common channel. |
| [20] IN/OUT2 | BNC connector, for audio input or output of TX2. |
| [21] EXT SCM AUD | DB9 connector, interface for external audio changeover. |
| [22] COAX RELAY | DB9 connector, for inteconnection with Spinner coaxial relay models BN754067 and BN754098. |
| [23] DUMMY LOAD | DB9 connector, for interconnection with dummy load. |

4.4 Rear Panel Description of SCML1+1SL/V2

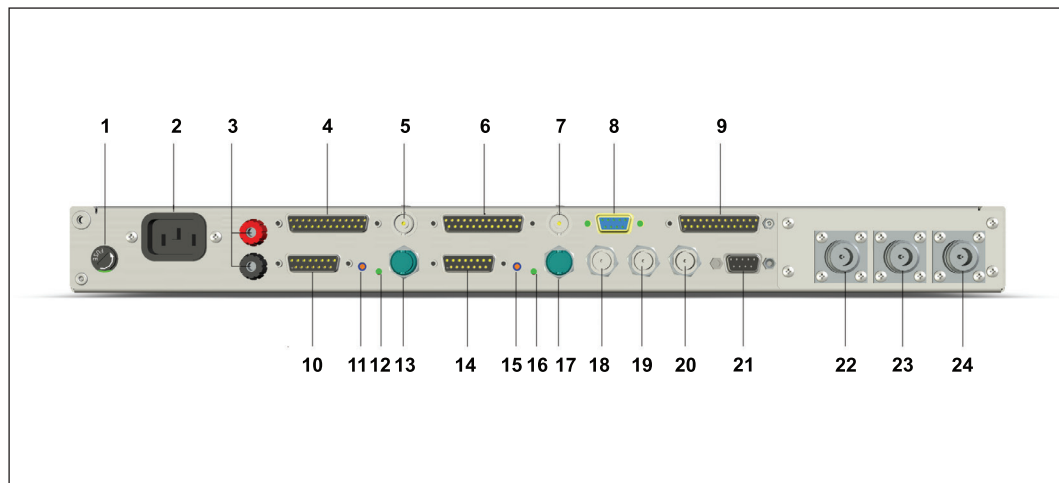


Figure 4.3

- | | |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------|
| [1] MAIN FUSE T1.6 | Fuse carrier for the fuse (1.6AT 5x20) for mains supply. |
| [2] MAINS VOLTAGE | Standard IEC connector for mains supply 110 ÷ 230 V, +10/-15%. |
| [3] 24VDC | Socket for 24Vdc external power supply. |
| [4] PA1 /HC | DB25 connector, for input of TELEMETRY connector coming from an (i.e.: PJ2000M-C) or an hybrid coupler (i.e.:HC2/2) del TX1. |
| [5] ANALOG IN or FOLDBACK | BNC connector, for the acquisition of an RF signal < 10dBm coming from an RF TEST or for the foldback signal of TX1. |
| [6] PA2 | DB25 connector, for input of TELEMETRY connector coming from an (i.e.: PJ2000M-C) of TX2. |
| [7] ANALOG IN | BNC connector, for the acquisition of an RF signal < 10dBm coming from an RF TEST of TX1. |
| [8] I ² C | DB9 connector for I ² C bus network. |
| [9] TC / TS | DB25 connector, for the management of main signals of telecontrol and telelabelling. |
| [10] EXC1 | DB15 connector, for input of REMOTE connector coming from an exciter (i.e.: BLUES30NV) of TX1. |
| [11] ADJ | Trimmer for intervention level adjustment on ANALOG IN signal [5]. |
| [12] PWR GOOD | Green Led, lit when the Power Good threshold is passed. |
| [13] INTERLOCK | BNC connector, for the interlock signal coming from transmitter system TX1. |
| [14] EXC2 | DB15 connector, for input of REMOTE connector coming from an exciter (i.e.: BLUES30NV) of TX2. |
| [15] ADJ | Trimmer for intervention level adjustment on ANALOG IN signal [7]. |
| [16] PWR GOOD | Green Led, lit when the Power Good threshold is passed. |
| [17] INTERLOCK | BNC connector, for the interlock signal coming from transmitter system TX2. |
| [18] IN/OUT1 | BNC connector, for audio input or output of TX1. |
| [19] COMMON | BNC connector, for audio output or input of common channel. |
| [20] IN/OUT2 | BNC connector, for audio input or output of TX2. |
| [21] EXT SCM AUD | DB9 connector, interface for external audio changeover. |
| [22] ANT | N-type connector, for RF output toward antenna. |
| [23] TX1 | N-type connector, for RF input coming from TX1. |
| [24] TX2 | N-type connector, for RF input coming from TX2. |

4.5 Rear Panel Description of SCML1+1SL/V3

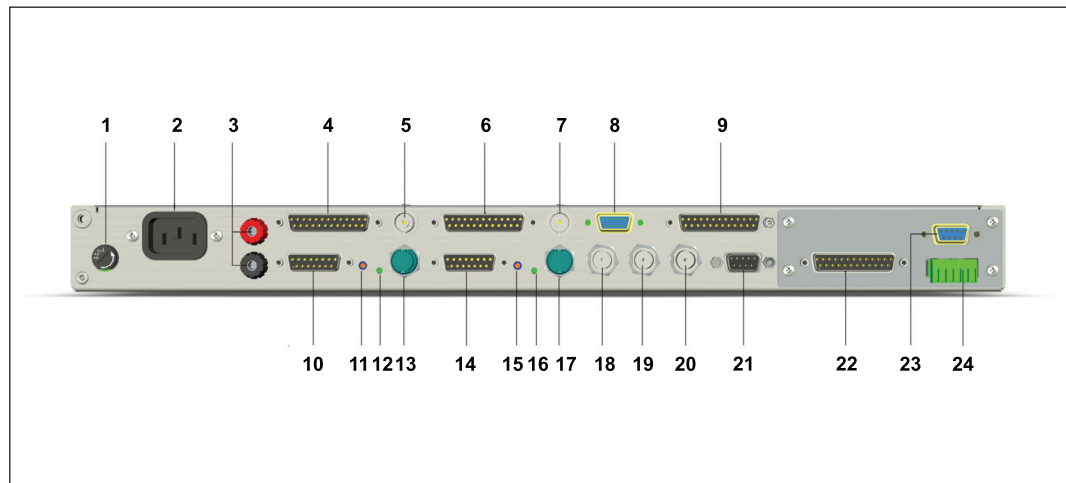


Figure 4.4

- [1] MAIN FUSE T1.6
Fuse carrier for the fuse (1.6AT 5x20) for mains supply.
- [2] MAINS VOLTAGE
Standard IEC connector for mains supply 110 ÷ 230 V, +10/-15%.
- [3] 24VDC
Socket for 24Vdc external power supply.
- [4] PA1 /HC
DB25 connector, for input of TELEMETRY connector coming from an (i.e.: PJ2000M-C) or an hybrid coupler (i.e.:HC2/2) del TX1.
- [5] ANALOG IN or FOLDBACK
BNC connector, for the acquisition of an RF signal < 10dBm coming from an RF TEST or for the foldback signal of TX1.
- [6] PA2
DB25 connector, for input of TELEMETRY connector coming from an (i.e.: PJ2000M-C) of TX2.
- [7] ANALOG IN
BNC connector, for the acquisition of an RF signal < 10dBm coming from an RF TEST of TX1.
- [8] I²C
DB9 connector for I²C bus network.
- [9] TC / TS
DB25 connector, for the management of main signals of telecontrol and telesignalling.
- [10] EXC1
DB15 connector, for input of REMOTE connector coming from an exciter (i.e.: BLUES30NV) of TX1.
- [11] ADJ
Trimmer for intervention level adjustment on ANALOG IN signal [5].
- [12] PWR GOOD
Green Led, lit when the Power Good threshold is passed.
- [13] INTERLOCK
BNC connector, for the interlock signal coming from transmitter system TX1.
- [14] EXC2
DB15 connector, for input of REMOTE connector coming from an exciter (i.e.: BLUES30NV) of TX2.
- [15] ADJ
Trimmer for intervention level adjustment on ANALOG IN signal [7].
- [16] PWR GOOD
Green Led, lit when the Power Good threshold is passed.
- [17] INTERLOCK
BNC connector, for the interlock signal coming from transmitter system TX2.
- [18] IN/OUT1
BNC connector, for audio input or output of TX1.
- [19] COMMON
BNC connector, for audio output or input of common channel.
- [20] IN/OUT2
BNC connector, for audio input or output of TX2.
- [21] EXT SCM AUD
DB9 connector, interface for external audio changeover.
- [22] COAX RELAY
DB9 connector, for interconnection with Spinner coaxial relay models BN512690, BN640075 and BN941912.
- [23] DUMMY LOAD
DB9 connector, for interconnection with dummy load.
- [24] COAX OFF POSITION
Phoenix connector, with out position contacts.

4.6 Rear Panel Description of SCML1+1SL/V4

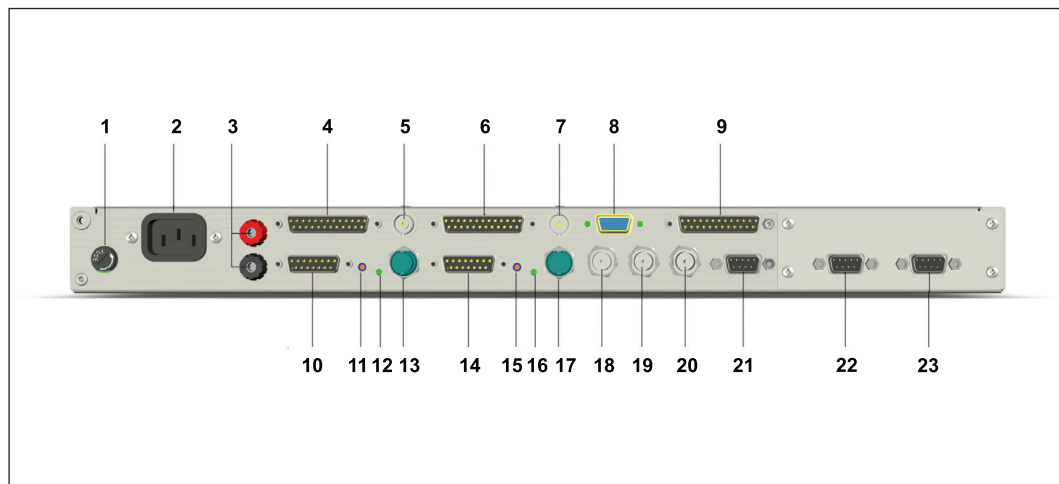


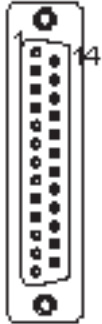
Figure 4.5

- | | |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------|
| [1] MAIN FUSE T1.6 | Fuse carrier for the fuse (1.6AT 5x20) for mains supply. |
| [2] MAINS VOLTAGE | Standard IEC connector for mains supply 110 ÷ 230 V, +10/-15%. |
| [3] 24VDC | Socket for 24Vdc external power supply. |
| [4] PA1 /HC | DB25 connector, for input of TELEMETRY connector coming from an (i.e.: PJ2000M-C) or an hybrid coupler (i.e.:HC2/2) del TX1. |
| [5] ANALOG IN or FOLDBACK | BNC connector, for the acquisition of an RF signal < 10dBm coming from an RF TEST or for the foldback signal of TX1. |
| [6] PA2 | DB25 connector, for input of TELEMETRY connector coming from an (i.e.: PJ2000M-C) of TX2. |
| [7] ANALOG IN | BNC connector, for the acquisition of an RF signal < 10dBm coming from an RF TEST of TX1. |
| [8] I2C | DB9 connector for I2C bus network. |
| [9] TC / TS | DB25 connector, for the management of main signals of telecontrol and telelabelling. |
| [10] EXC1 | DB15 connector, for input of REMOTE connector coming from an exciter (i.e.: BLUES30NV) of TX1. |
| [11] ADJ | Trimmer for intervention level adjustment on ANALOG IN signal [5]. |
| [12] PWR GOOD | Green Led, lit when the Power Good threshold is passed. |
| [13] INTERLOCK | BNC connector, for the interlock signal coming from transmitter system TX1. |
| [14] EXC2 | DB15 connector, for input of REMOTE connector coming from an exciter (i.e.: BLUES30NV) of TX2. |
| [15] ADJ | Trimmer for intervention level adjustment on ANALOG IN signal [7]. |
| [16] PWR GOOD | Green Led, lit when the Power Good threshold is passed. |
| [17] INTERLOCK | BNC connector, for the interlock signal coming from transmitter system TX2. |
| [18] IN/OUT1 | BNC connector, for audio input or output of TX1. |
| [19] COMMON | BNC connector, for audio output or input of common channel. |
| [20] IN/OUT2 | BNC connector, for audio input or output of TX2. |
| [21] EXT SCM AUD | DB9 connector, interface for external audio changeover. |
| [22] COAX RELAY | DB9 connector, for link with external Interconnection Box Esterna. |
| [23] DUMMY LOAD | DB9 connector, for interconnection with dummy load. |

4.7 Connectors Description

4.7.1 Remote

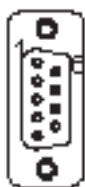
Type: Female DB25



Pin	Name
1	+15V
2	+15V
3	TX1 Antenna (TC)
4	TX2 Antenna (TC)
5	TX1 ON (TC)
6	TX1 OFF (TC)
7	TX2 ON (TC)
8	TX2 OFF (TC)
9	AUTO (TC)
10	MANUAL (TC)
11	RESET (TC)
12	COMMON (TC)
13	GND
14	COMMON (TS)
15	TX1 Antenna (TS)
16	TX2 Antenna (TS)
17	TX1 OFF (TS)
18	TX1 ON (TS)
19	TX2 OFF (TS)
20	TX2 ON (TS)
21	MANUAL (TS)
22	AUTO (TS)
23	LOCAL (TS)
24	REMOTE (TS)
25	COMMON (TS)

4.7.2 I²C Bus

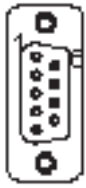
Type: Female DB9



1	NC
2	SDA
3	SCL
4	NC
5	GND
6	Reserved
7	Reserved
8	NC
9	NC

4.7.3 Service (only for factory setting purposes)

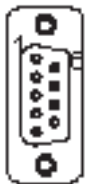
Type: Female DB9



- 1 NC
- 2 TX_D
- 3 RX_D
- 4 Internally connected with 6
- 5 GND
- 6 Internally connected with 4
- 7 Internally connected with 8
- 8 Internally connected with 7
- 9 NC

4.7.4 Coax Relay (only for SCML1+1SL/V4)

Type: Female DB9



- 1 Control voltage (+)
- 2 Control voltage (-)
- 3 Relay in position 1 (OFF)
- 4 Relay in position 2 (ON)
- 5 GND
- 6 Switching to position 2 / NO
- 7 Switching to position 1 / NC
- 8 Common (when selected)
- 9 Relay Switching

Pins 1 and 2 are outputs on which the relay control voltage is made available (12V or 24V DC).

Connected to pins 3 and 4 are the relay limit switches, two contacts which alternately close towards the ground when the relay is in the normal position (TX1 connected to antenna, pin 3 closed to ground) or switched (TX2 connected to antenna, pin 4 closed to ground).

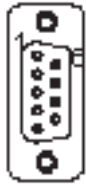
Pins 6 and 7 are the commands which cause the coaxial relay to switch from the normal position (Off) to the switched position (On) and vice versa; the type of command depends on the coaxial relay used, as well as the connecting cable between the SCM and the coaxial relay.

One of the possible positions of the control mode selection jumper makes available on pin 8 the common contact of a switch, of which pin 6 is the normally open (NO) contact and pin 7 is the normally closed (NC) contact.

Pin 9 is an open contact until switching begins, and is closed to ground when the relay has reached the new position.

4.7.5 Dummy Load

Type: Female DB9



- 1 Relay (24V / 0,5A) for the fan control of the dummy load / NO
- 2 Relay (24V / 0,5A) for the fan control of the dummy load / C
- 3 Relay (24V / 0,5A) for the fan control of the dummy load / NC
- 4 +15V
- 5 GND
- 6 Input⁽¹⁾ for the Fault control of the dummy load (temperature) +/-
- 7 Input⁽¹⁾ for the Fault control of the dummy load (temperature) +/-
- 8 Not Connected
- 9 Not connected

⁽¹⁾: An optoinsulator can be present between pin 6 and 7 as alternative.

5. Quick guide for installation and use

This section provides a step-by-step description of equipment installation and configuration procedure. Follow these procedures closely upon first power-on and each time any change is made to general configuration, such as when a new transmission station is added or the equipment is replaced.

Once the desired configuration has been set up, no more settings are required for normal operation; at each power-up (even after an accidental shutdown), the equipment defaults to the parameters set during the initial configuration procedure.

The topics covered in this section are discussed at greater length in the next sections, with detailed descriptions of all hardware and firmware features and capabilities. Please see the relevant sections for additional details.



IMPORTANT: *When configuring and testing the transmitter in which the equipment is integrated, be sure to have the Final Test Table supplied with the equipment ready at hand throughout the whole procedure; the Final Test Table lists all operating parameters as set and tested at the factory.*

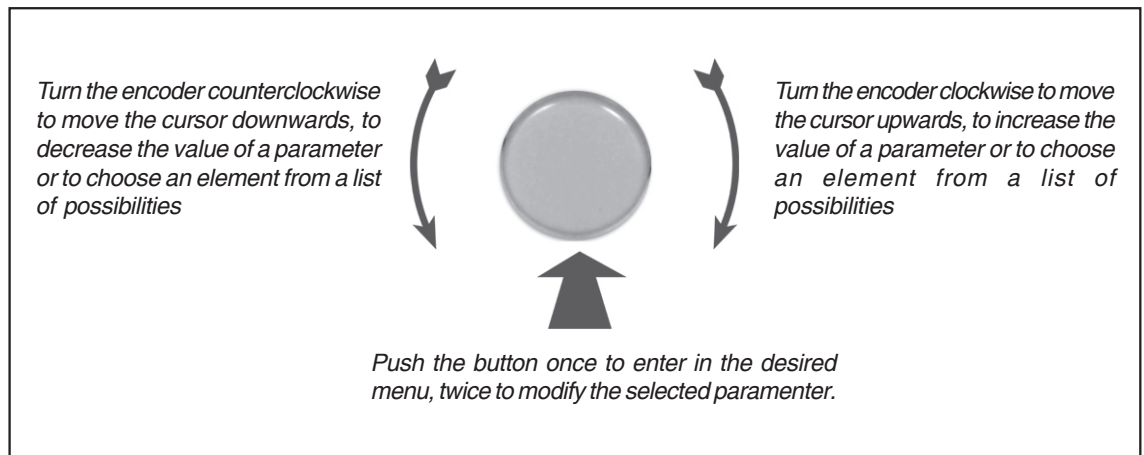
5.1 User Interface

The machine features an LCD with two lines by 16 characters that displays a set of menus.

The status of the machine is indicated by four LEDs located on the front panel: MANUAL, LOCAL, MAINS, ALARM and seven LED for synoptical signalling.

The interaction between the user and the exciter control software is performed using the encoder.

The operations that you can perform on the encoder are:



- **Rotation:** moves the cursor shows on the display; if you turn the encoder to the left (counter clockwise), the cursor moves downwards, if you turn it right the cursor moves upwards; it also permits to increase or diminish the parameters (turning the encoder left diminishes the parameter).
- **Pushing:** push the button once when the cursor is on the name of a menu to enter in that menu, push it when the corsor is on the name of a parameter to enter in modification mode (the corsor starts blinking); after the modification of a parameter, push the button to save the new value.

After having modified the value of a parameter, the cursor goes on blinking for approximately 15 seconds, waiting for confirmation from the user. If the user doesn't confirm the new value (i.e., the button is not pressed), the parameter has not saved and remains on the selected parameter.

The first pressure of the ENCODER when the display is light out, or its rotation, serves in order to activate the retroillumination if disabled.

5.2 Management Firmware

The following is a representation of the main screen, available once you switch on the equipment or when after 180s the encoder is not used, and gives to the user information about the status of the system.

```
TX1:ON   TX2:Off  
5H⏸ Retry 05/10
```

The main screen shows information regards the status of TX and the number of automatic retry, moreover is present an hourglass that indicates:

1. Start time presence, if is the only ⏸ icon present;
2. Exchange time presence, if the ⏸ icon is combined with H icon.

The 5 icon identifies a temporary suspension of the exchange automatism and appears when:

1. The SCM is in ALARM status.
2. One TX is in LOCAL condition.
3. The total number of Retry is 0.
4. The number of makes Retry is the same to the number of total Retry.
5. In Gold configuration the PA connected gives the interlock.

By pressing the encoder you see all the menu available, turning through the “▶” symbol you can chooses it and by pressing you can access to its inside. After ~20s you return to the main screen in case the encoder is not used.

```
▶General Setting  
TX1      Setting  
TX2      Setting  
Change   Setting  
Function Status  
About    Version  
Exit
```


5.2.1 General Setting

```

TX1      : ON
TX2      : OFF
Change  : Normal
Func.   : AUTO
Mode    : REMOTE
Reset   : OK
IIC     : 10
Exit

```

- TX1 Enables (ON) or disables (OFF) the first transmitter.
- TX2 Enables (ON) or disables (OFF) the second transmitter.
- Change Forces the transmitter changeover
- Func. Selects the automatic or manual changeover.
- Mode Enables (REMOTE) or disables (LOCAL) the management from external commands
- Reset Sets at zero the retry counter retraining the changeover
- IIC Specifies the slave address of the equipment on IIC

5.2.2 TX1 Setting and TX2 Setting

```

PgMode: Analog
PowerG: Present
Power : Off
Status: Local
Exit

```

- PgMode Identifies the modality of the power good state that can be selected from the voices: "Analog", "Digital", "Ana+Aud", "Dig+Aud".
- PowerG Identifies the power good state related to the transmitter filtered from firmware.
- Power Command to power on or to power off the equipment.
- Status Shows the status (LOCAL or REMOTE) of the equipment.

5.2.3 Change Setting

```
Retry : 10
Start : 05m00s
Before : 02m00s
TxOff : 02m00s
Coax : 02m00s
After : 05m00s
Exit
```

Retry indicates the total number of retry before passing in MANUAL from 0 to 50.

Start modifies the waiting time to the start from 5 to 60 min.

Before modifies the waiting time before beginning the exchange from 1 sec to 30 min.

TXOff modifies the waiting time before beginning the switch off of TX from 1 sec to 30 min.

Coax modifies the waiting time before beginning the commutation of the coaxial relay from 5 sec to 30 min.

After modifies the waiting time before beginning the switch on of TX in antenna from 5 sec to 30 min.

5.2.4 Function Status

```
Load : Fault
L-Fan : On
InhPa : Disable
IntAud: Normal
ExtAud: Disable
Exit
```

Load shows the dummy load status (if enabled).

L-Fan shows the status of the fan on the dummy load (if enabled).

InhPa shows the status of the inhibit signal supplied from the PA in the Gold configuration (if enabled)

IntAud shows the status of the internal audio exchange.

ExtAud shows the status of the external audio exchange (if enabled).

5.2.5 Software Version

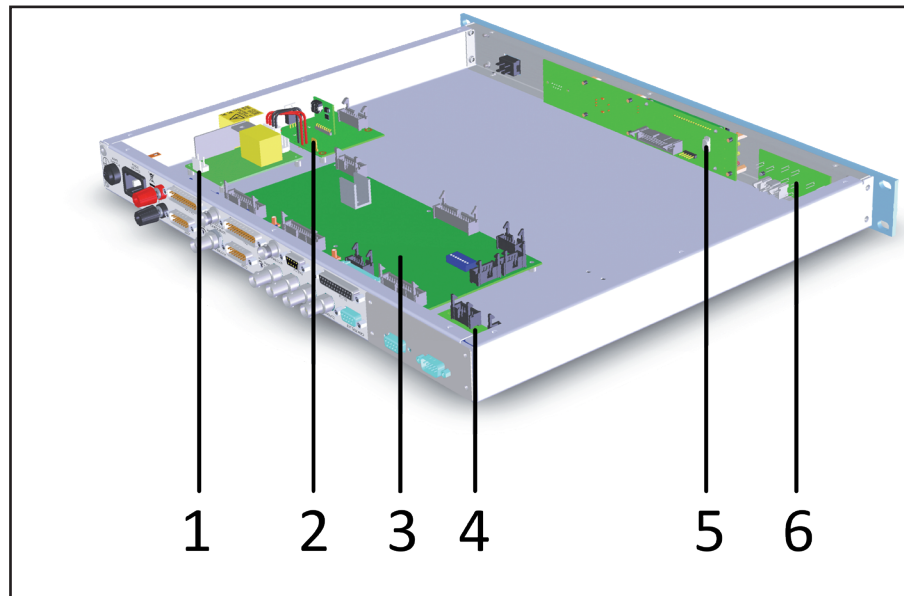
```
Rel:01010000  
Dat:gg/mm/aaaa  
Tab:SL1-Test-01  
Exit
```

Rel shows the firmware release information.
Dat shows the release date.
Tab shows the table code programmed as default.

6. Identification and Access to the Modules

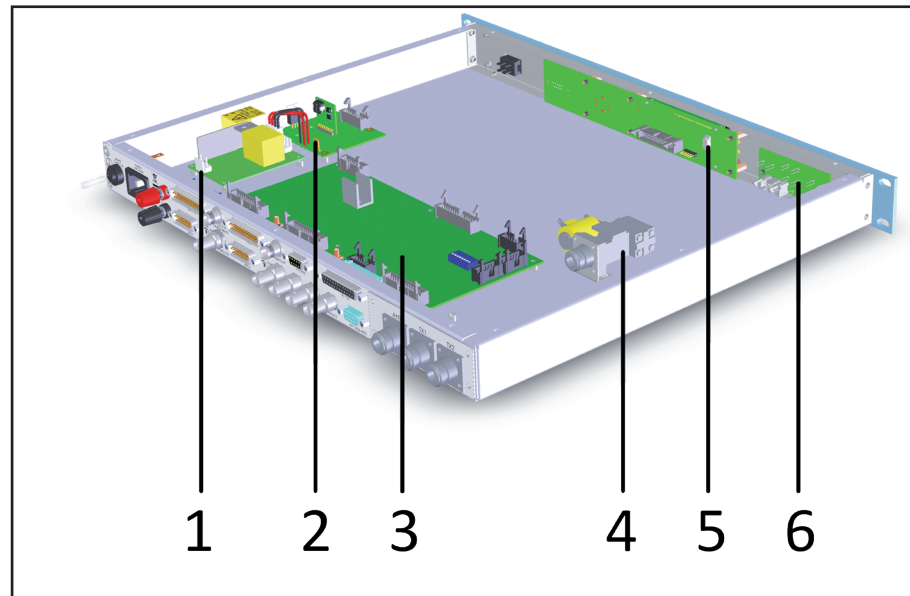
In the following there is a brief description of different boards included in each changeover version.

6.1 SCML1+1SL/V1



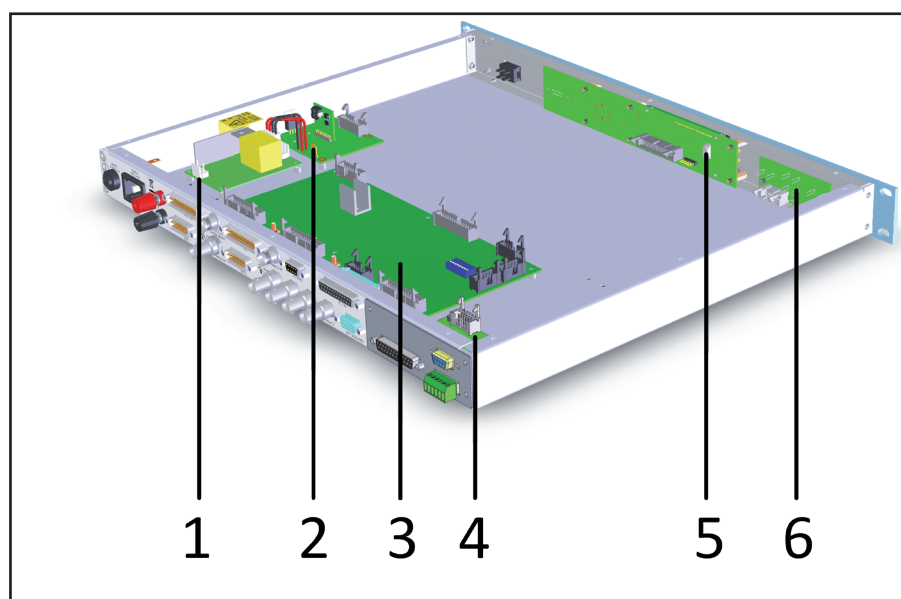
- [1] Power Supply
- [2] Power Supply 24V + Switching Power Supply 15V
- [3] Main Board
- [4] Panel Board
- [5] DB9 External Relay Interface
- [6] Synoptic Panel Board

6.2 SCML1+1SL/V2



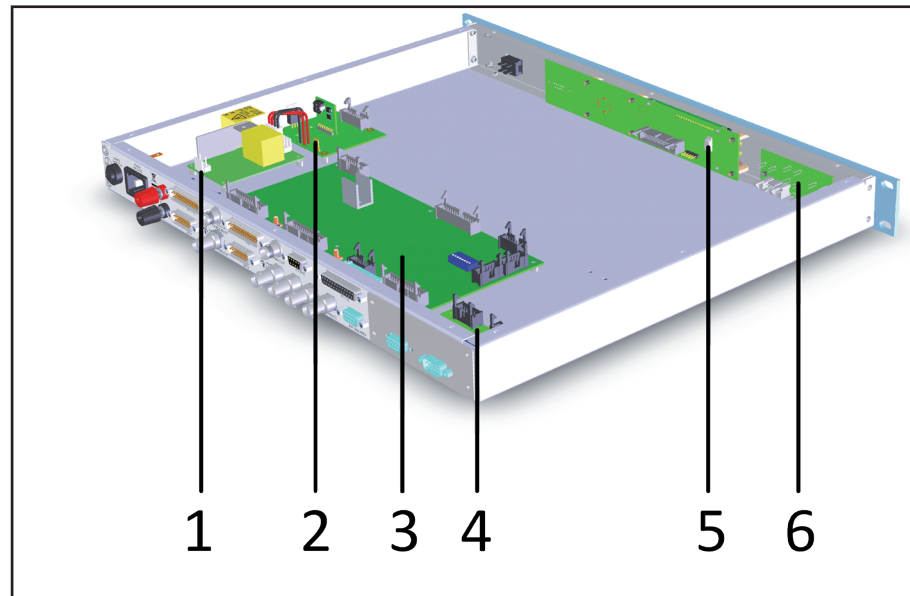
- [1] Power Supply
- [2] Power Supply 24V + Switching Power Supply 15V
- [3] Main Board
- [4] Panel Board
- [5] Internal Coaxial Relay
- [6] Synoptic Panel Board

6.3 SCML1+1SL/V3



- [1] Power Supply
- [2] Power Supply 24V + Switching Power Supply 15V
- [3] Main Board
- [4] Panel Board
- [5] DB25 External Relay Interface
- [6] Synoptic Panel Board

6.4 SCML1+1SL/V4



- [1] Power Supply
- [2] Power Supply 24V + Switching Power Supply 15V
- [3] Main Board
- [4] Panel Board
- [5] DB9 External Relay Interface
- [6] Synoptic Panel Board

7. Configurations

This section provides a description about the typical configurations and about the firmware of the equipment.

In the following figure is represented the dip-switches necessary to configure the SCML1+1SL in case of change in the system configuration.

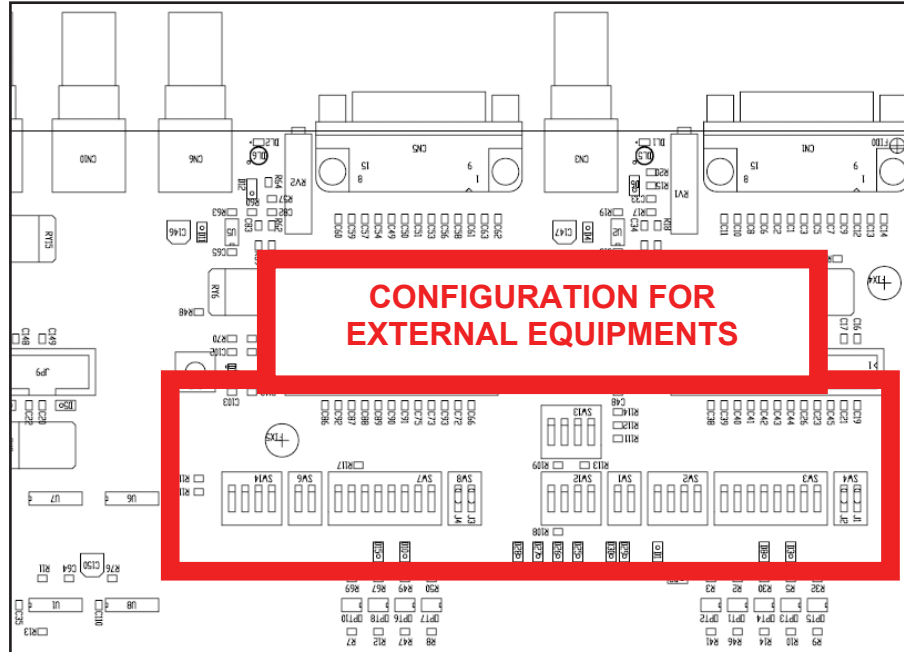


Figure 7.1: Dip-switch for external equipment configurations

7.1 Typical Configuration with Exciters of Tex and Blues family

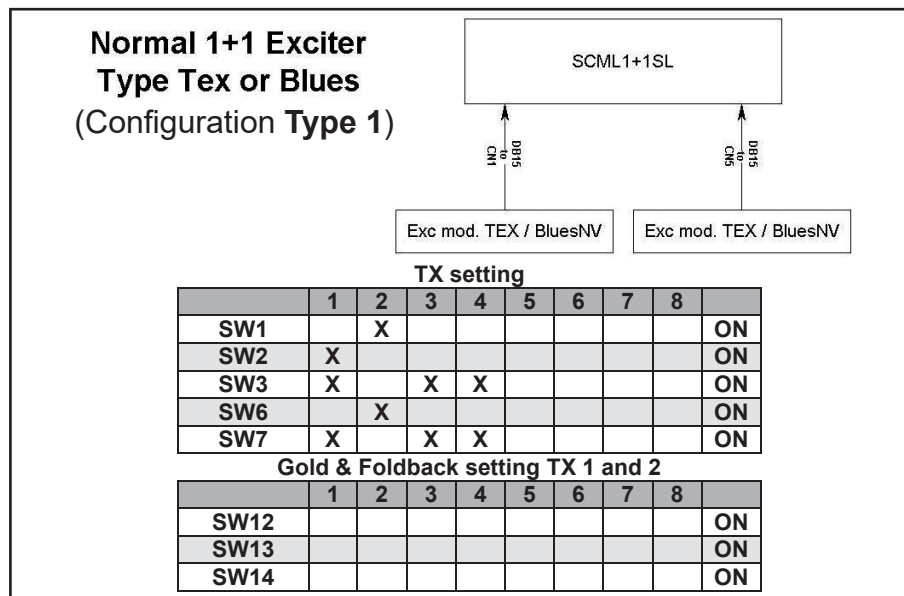


Figure 7.2: 1+1 system typical configuration for TEX or Blues Family

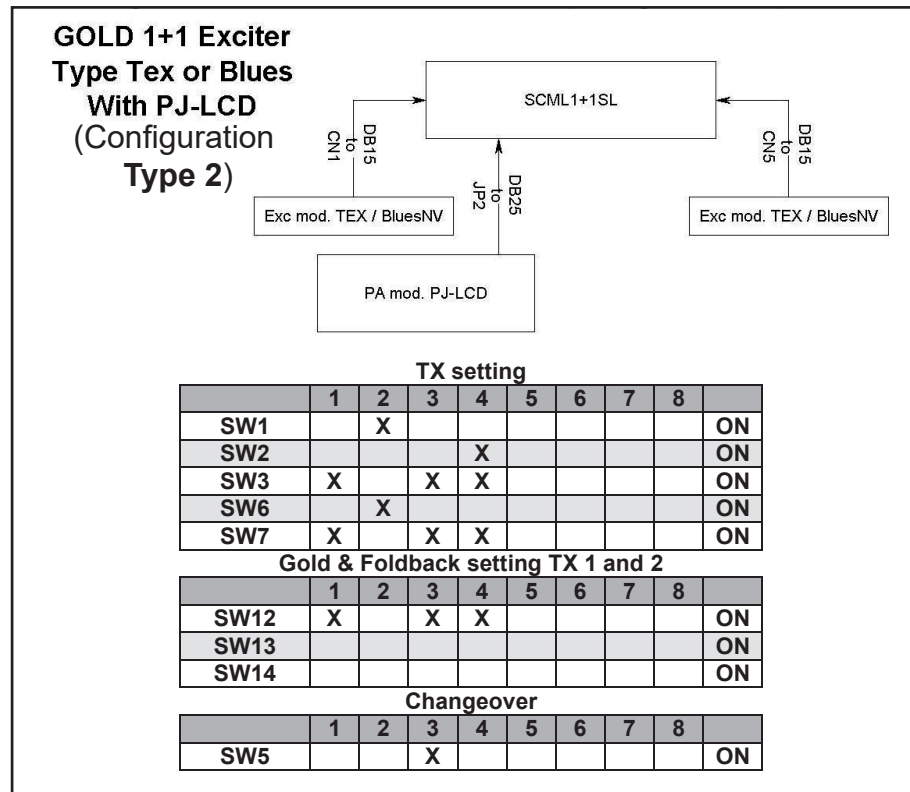


Figure 7.3: 1+1 GOLD system typical configuration for TEX or Blues and PJ-LCD

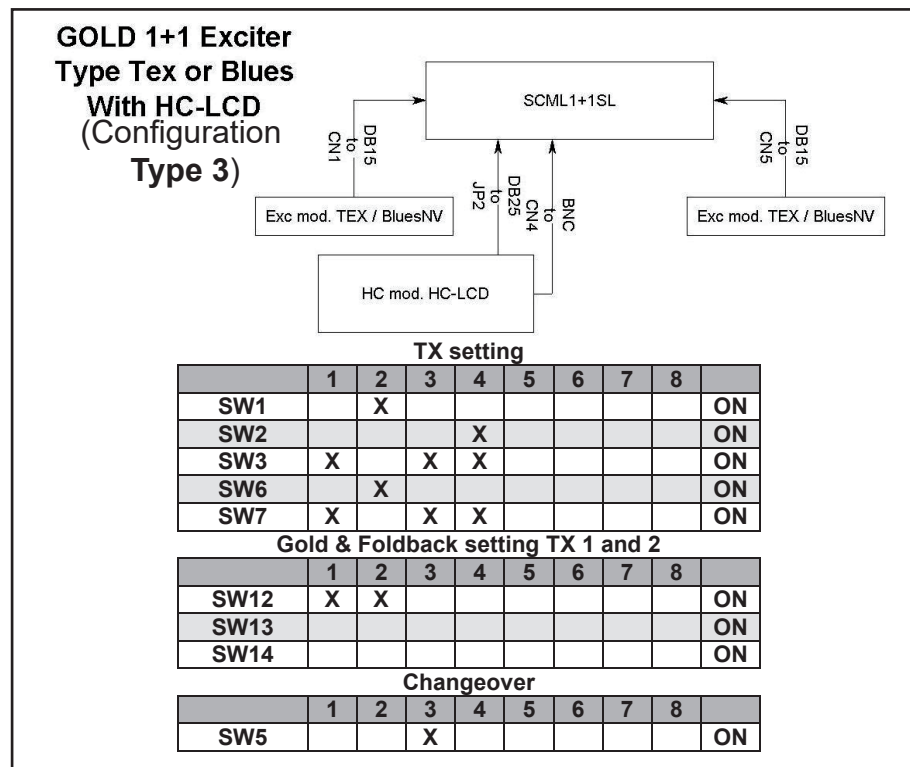


Figure 7.4: 1+1 GOLD system typical configuration for TEX or Blues and HC-LCD

7.2 Typical Configuration with Exciters of PTX family

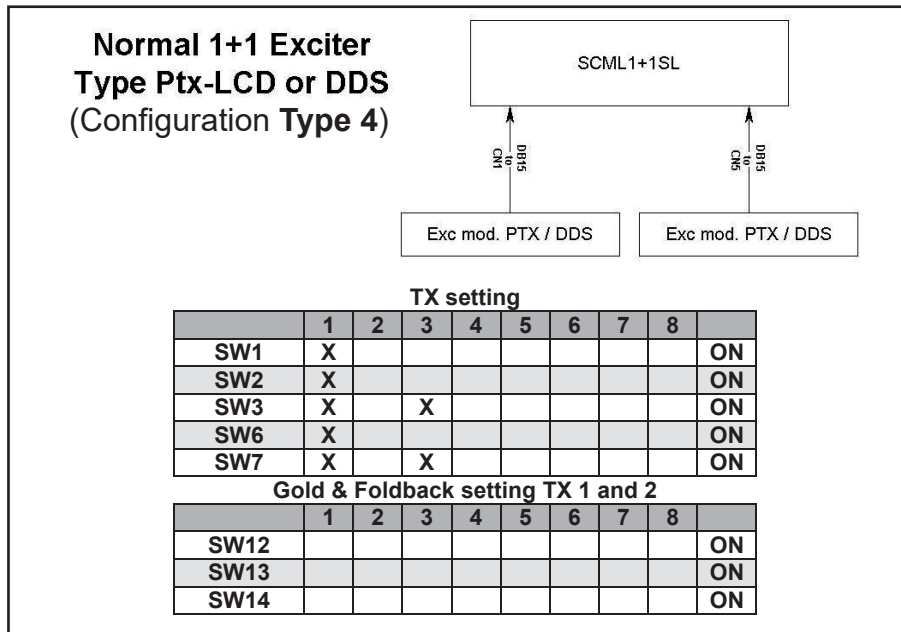


Figure 7.5: 1+1 system typical configuration for PTX LCD or DDS Family

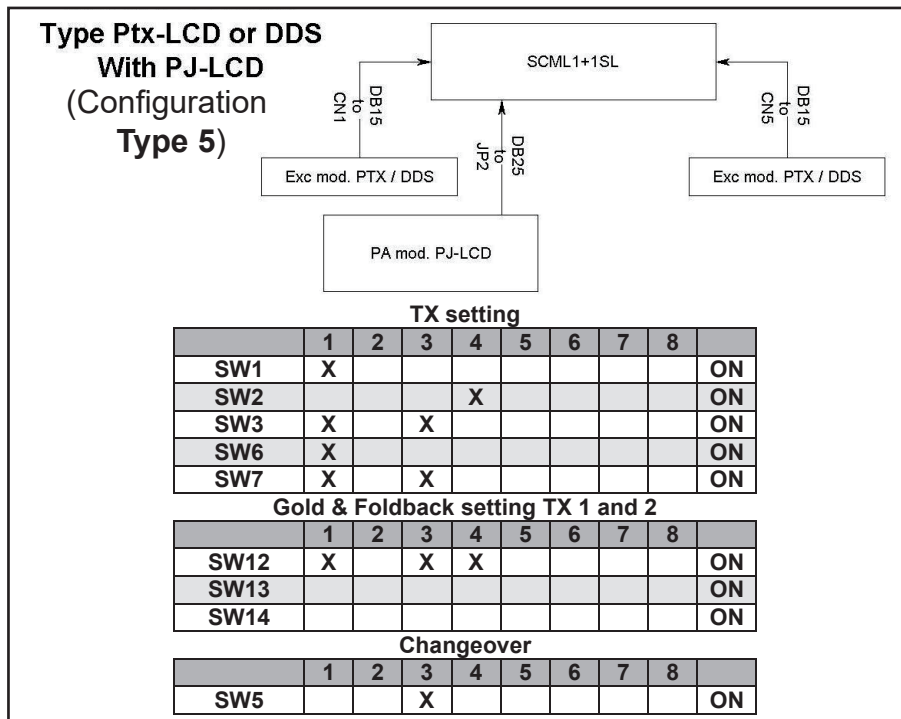


Figure 7.6: 1+1 GOLD system typical configuration for PTX LCD or DDS and PJ-LCD

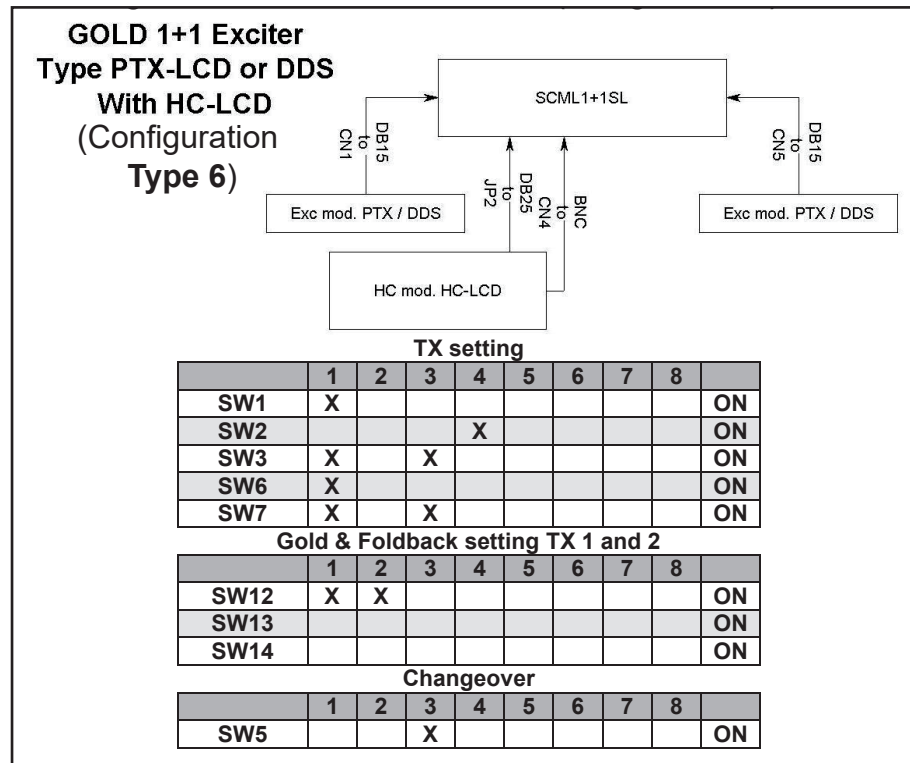


Figure 7.7: 1+1 GOLD system typical configuration for PTX LCD or DDS and HC-LCD

7.3 Typical Configuration with Mixed Exciters

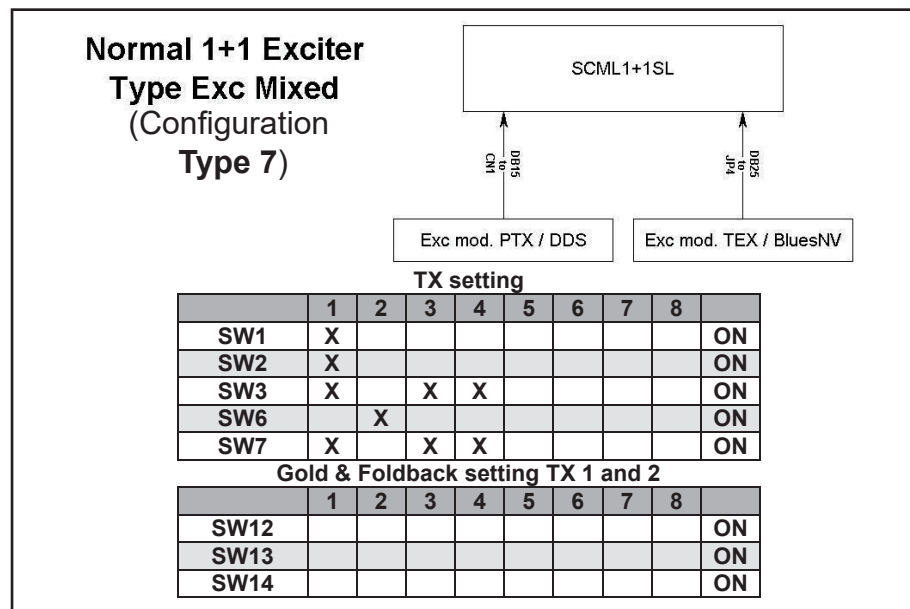


Figure 7.8: 1+1 system typical configuration for PTX LCD or DDS and TEX or Blues

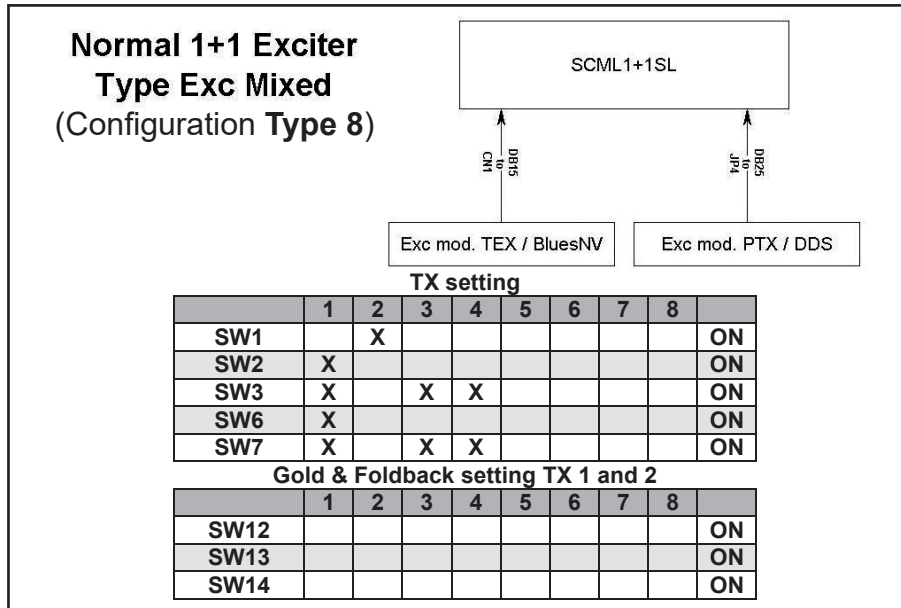


Figure 7.9: 1+1 system typical configuration for TEX or Blues and PTX LCD or DDS

7.4 Typical Configuration with Transmitting systems

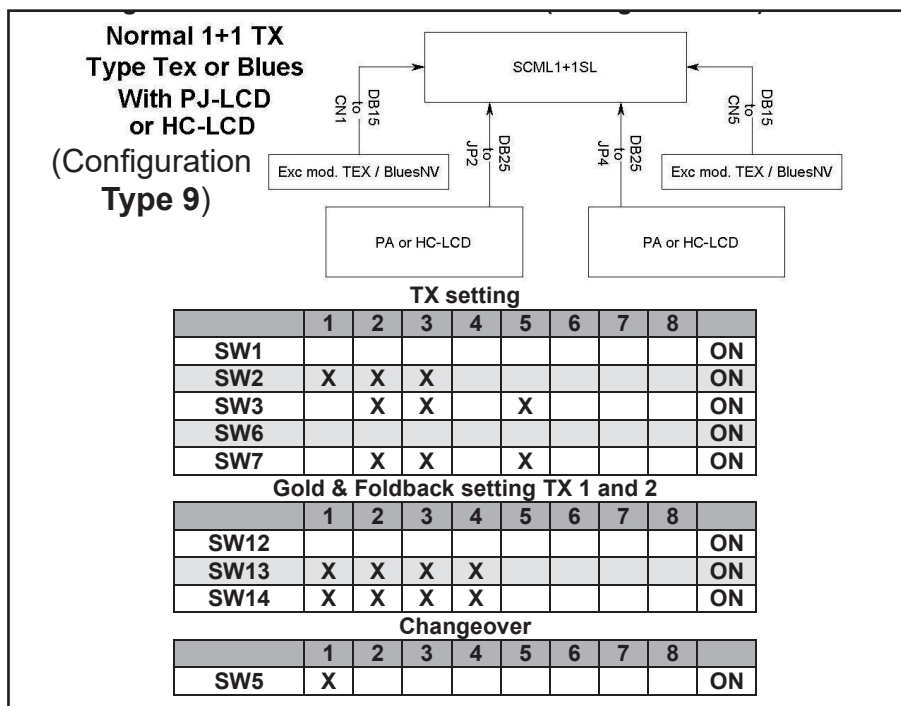


Figure 7.10: 1+1 TX system typical configuration for TEX or Blues and PJ-LCD or HC-LCD

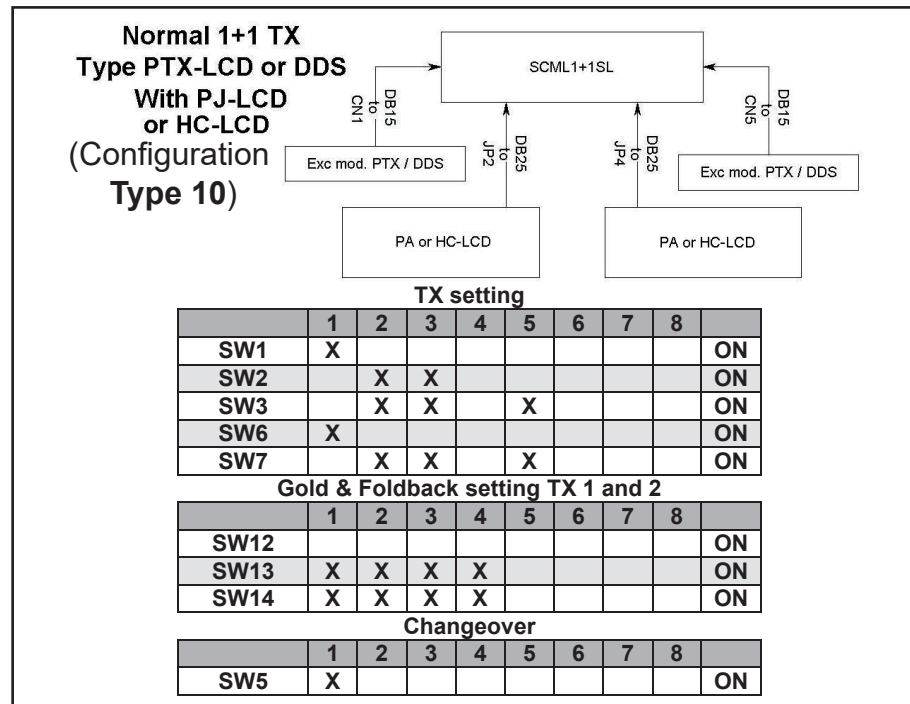


Figure 7.11: 1+1 TX system typical configuration for PTX LCD or DDS and PJ-LCD or HC-LCD

7.5 Configurations of dip-switch for /V1 and /V4 versions

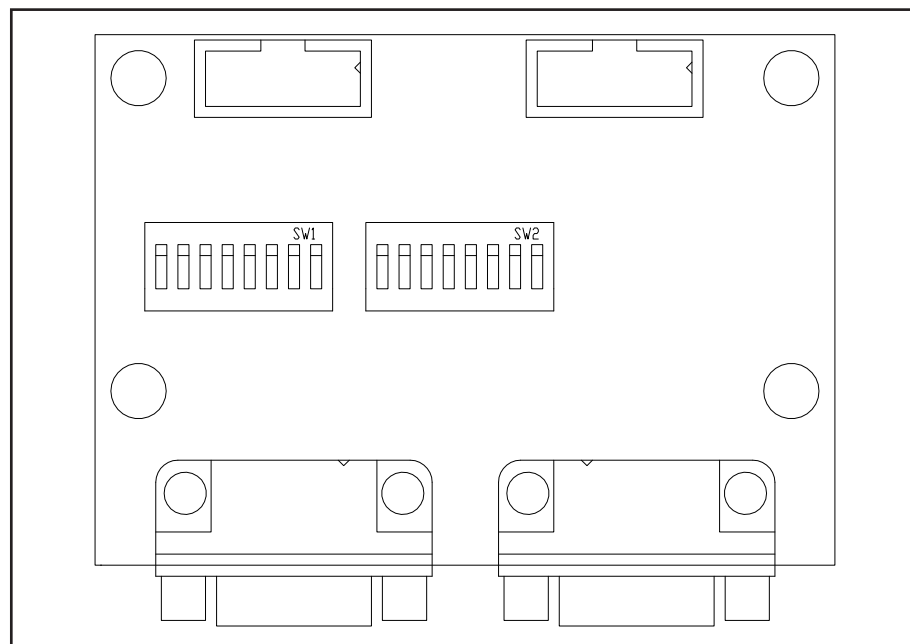


Figure 7.12: configurations of dip switch SW1 and SW2 for /V1 and /V4 versions

/V1 Version SPINNER	/V4 Version RVR
SW1 2 - 4 - 6	SW1 1 - 3 - 5 - 7 - 8
SW2 2 - 4 - 6 - 7	SW2 1 - 3 - 5

7.6 Configurations of jumpers for /V3 versions

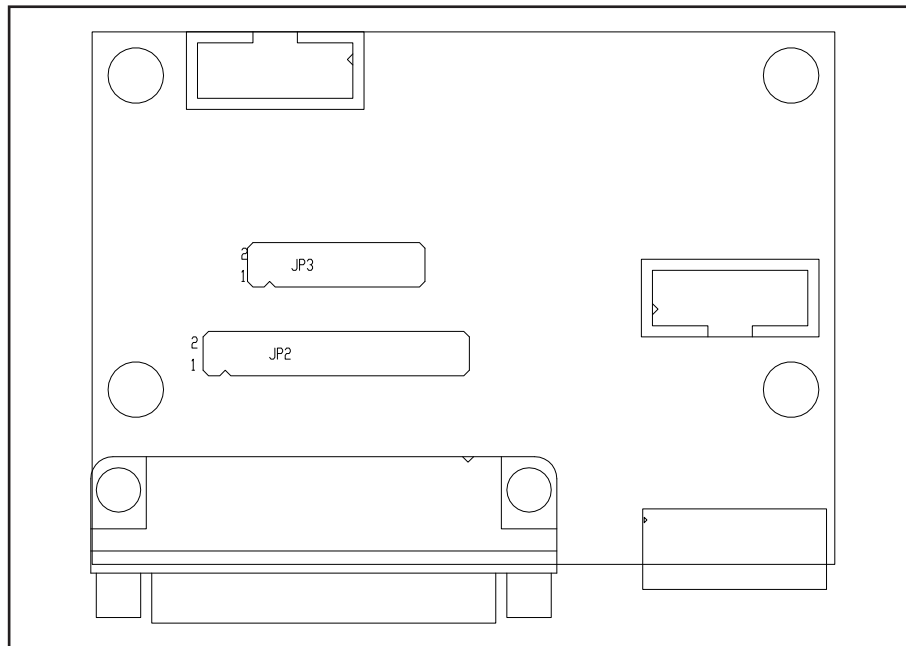


Figure 7.13: configurations of jumper JP2 and JP3 for /V3 version

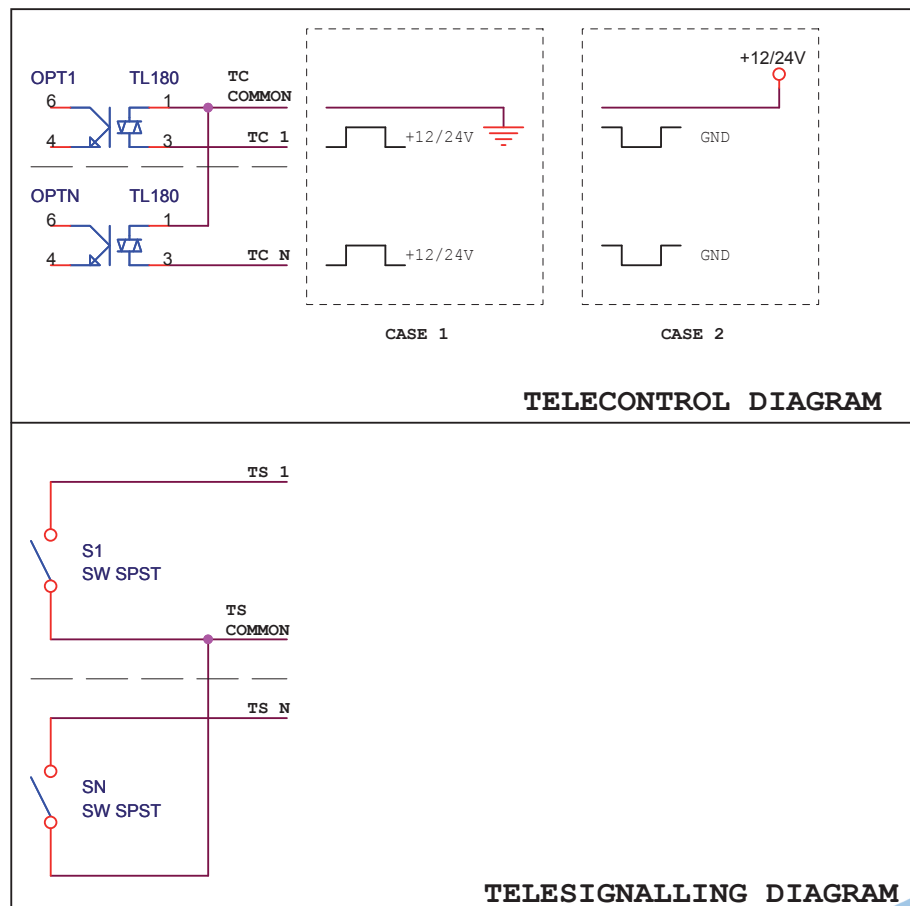
BN512690	BN640075 BN941912
JP2 1-2 / 5-6 / 9-10 / 13-14 / 17-18 / 21-22	JP2 3-4 / 7-8 / 11-12 / 15-16 / 19-20 / 23-24
JP3 1-2 / 5-6 / 9-10 / 13-14	JP3 3-4 / 7-8 / 11-12 / 15-16

8. TC/TS Electromechanical Interface

In the following, there is a brief and schematic description in case you want to connect the I/O connector to external devices to use telecontrol (TC) and telesignalling (TS) functionality.

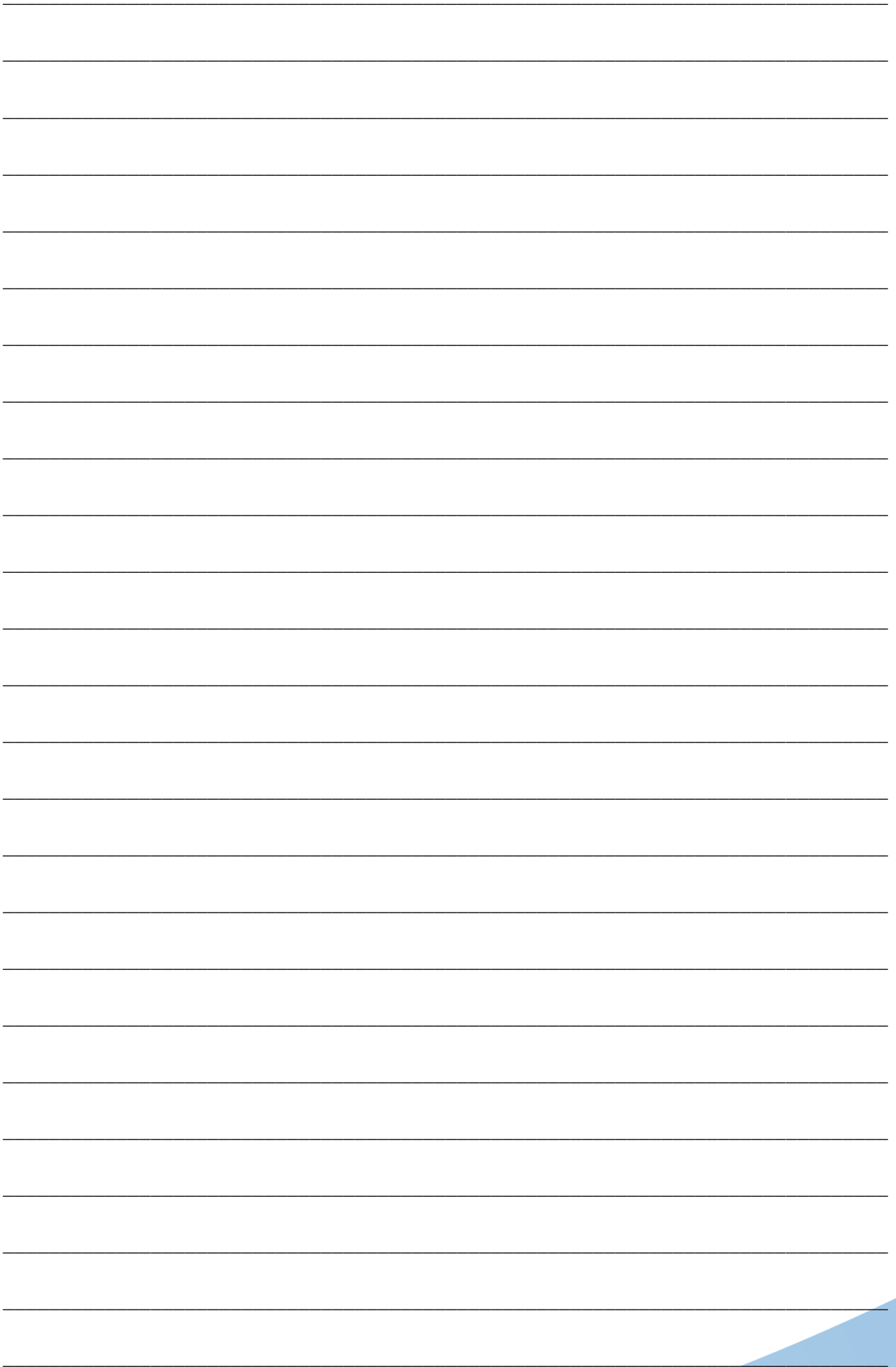
DB25	TYPE	DESCRIPTION	PIN
	POWER SUPPLY	+15 V	1 & 2
		GND	13
	INPUT (TC)	TX1 ON	5
		TX1 OFF	6
		TX2 ON	7
		TX2 OFF	8
		TX1 ANTENNA	3
		TX2 ANTENNA	4
		AUTO	9
		MANUAL	10
		RESET	11
		COMMON	12
	OUTPUT (TS)	TX1 ON	18
		TX1 OFF	17
		TX2 ON	20
		TX2 OFF	19
		TX1 ANTENNA	15
		TX2 ANTENNA	16
		AUTO	22
		MANUAL	21
		LOCAL	22
		REMOTE	24
		COMMON	14 & 25

Table of inputs and outputs of TC/TS electromechanical interface



Schematic representation of TC/TS electromechanical interface operation

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