DSP25 V2
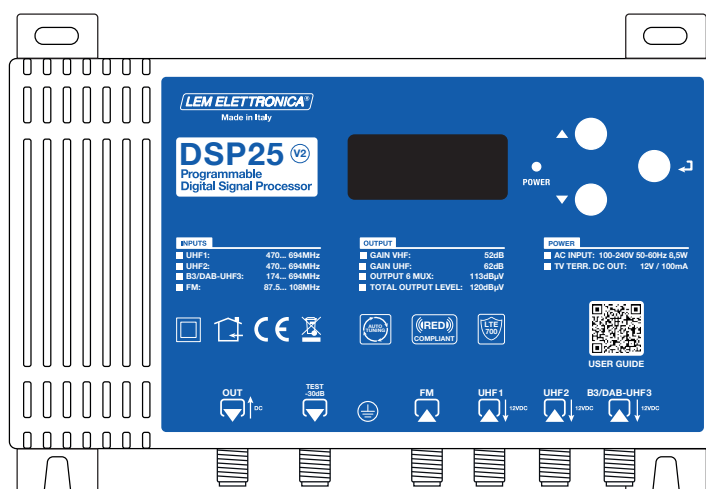
MULTI-INPUT
DIGITAL SIGNAL PROCESSOR

▸ 24 Digits LCD display

▸ 3 TV Terrestrial inputs

▸ 1 FM input

▸ Auto-Tuning function

▸ Lte700 filters against 5G/4G interferences

▸ A.C.G. in each filter

▸ 32 high selectivity digital filters

WARRANTY 5 YEARS **AUTO TUNING** **(RED) COMPLIANT**

TECHNICAL SPECIFICATIONS		
NUMBER OF INPUTS	4	1 FM; 1 B3/DAB/UHF; 2 UHF
INPUTS FREQUENCY RANGE	MHz	FM (87... 108) - B3 (170... 230) / DAB (170... 240) - UHF (470... 694)
SINGLE CHANNEL FILTERS		32
NUMBER OF CHANNEL PER FILTERS		1 (with channel to channel conversion)
INPUT LEVEL RANGE	dBµV	FM (35... 90) - DAB (35... 90) - B3 (45... 110) - UHF (45... 100)
FM INPUT AMPLIFIER	dB	-10/+10 (OFF/ON)
VHF/UHF INPUTS AMPLIFIERS	DB	0/+16
VHF/UHF INPUTS A.C.G. RANGE	dB	40 dB
DIGITAL FILTERS SELECTIVITY	dB	≥50 (Adjacent channel)
SELECTABLE FILTERS AMPLITUDE		STANDARD/NARROW/AUTO
GAIN	dB	VHF 52 - UHF 62
OUTPUT LEVEL RANGE	dBµV	94... 114
VHF ADJUSTABLE GAIN	dB	0... -10
UHF ADJUSTABLE SLOPE	dB	0... -10
MAX TOTAL UHF OUTPUT LEVEL	dBµV	120 (IM3 DIN 45004B - 60 dBc)
MAX OUTPUT LEVEL WITH 6 MUX	dBµV	113
MAX INPUTS REMOTE POWER		12V / 100 mA
COMMON		
RETURN LOSS IN/OUT	dB	>12
TEST OUTPUT		1 (-30 dB)
MAXIMUM CONSUMPTION		100-240VAC 50/60HZ 8,5W
OPERATING TEMPERATURE	°C	-5... 50
DIMENSIONS	mm	217 x 145 x 45

DESCRIPTION OF SYMBOLS AND ELECTRICAL SAFETY

The equipment complies with the CE requirements

The equipment is designed for indoor use only

Equipment grounding terminal

This symbol indicates that the equipment complies with the safety requirements for class II equipment

To avoid the risk of electric shock, do not open the equipment.

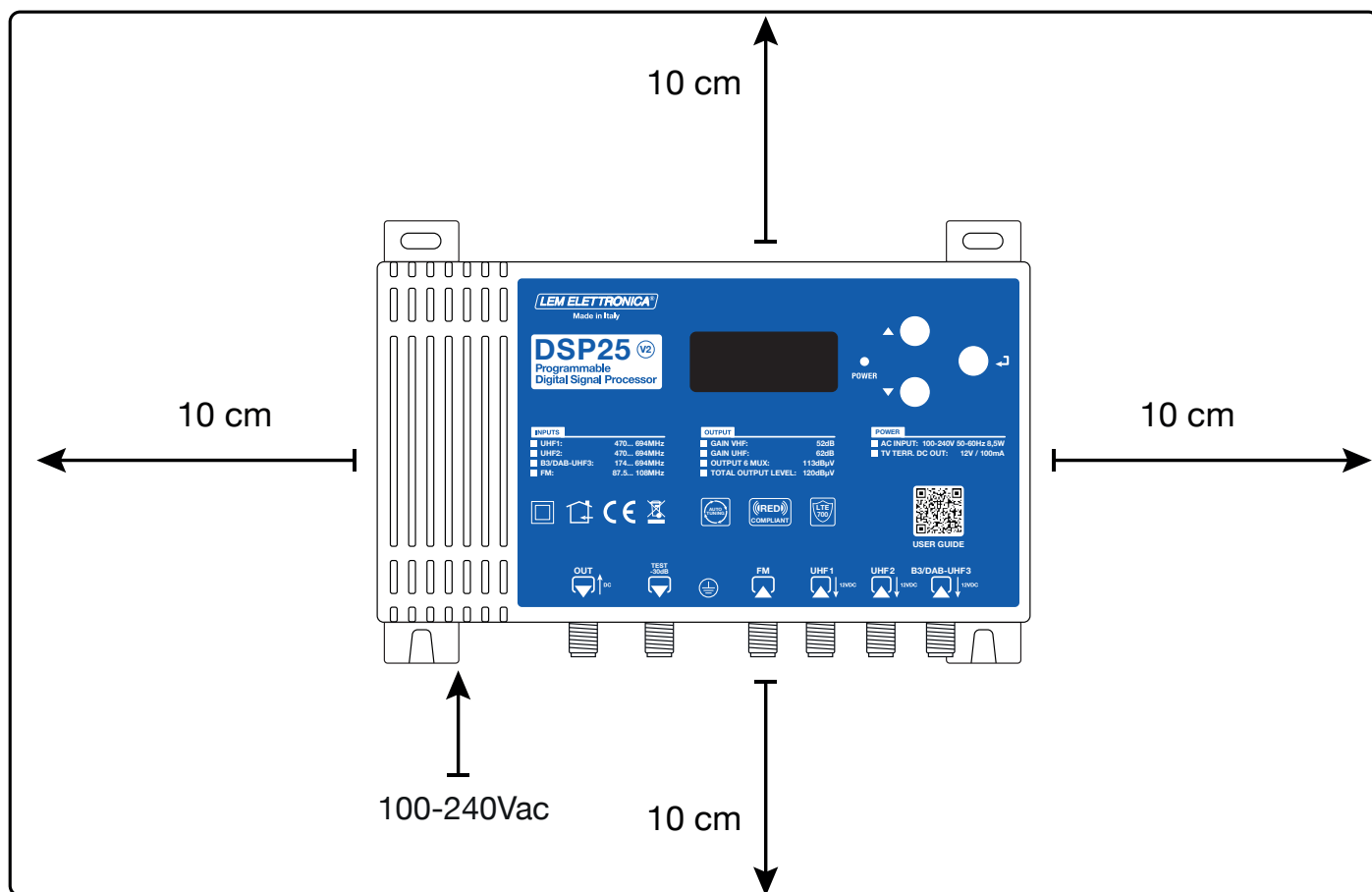The equipment is compliant with RoHS 2011/65EU

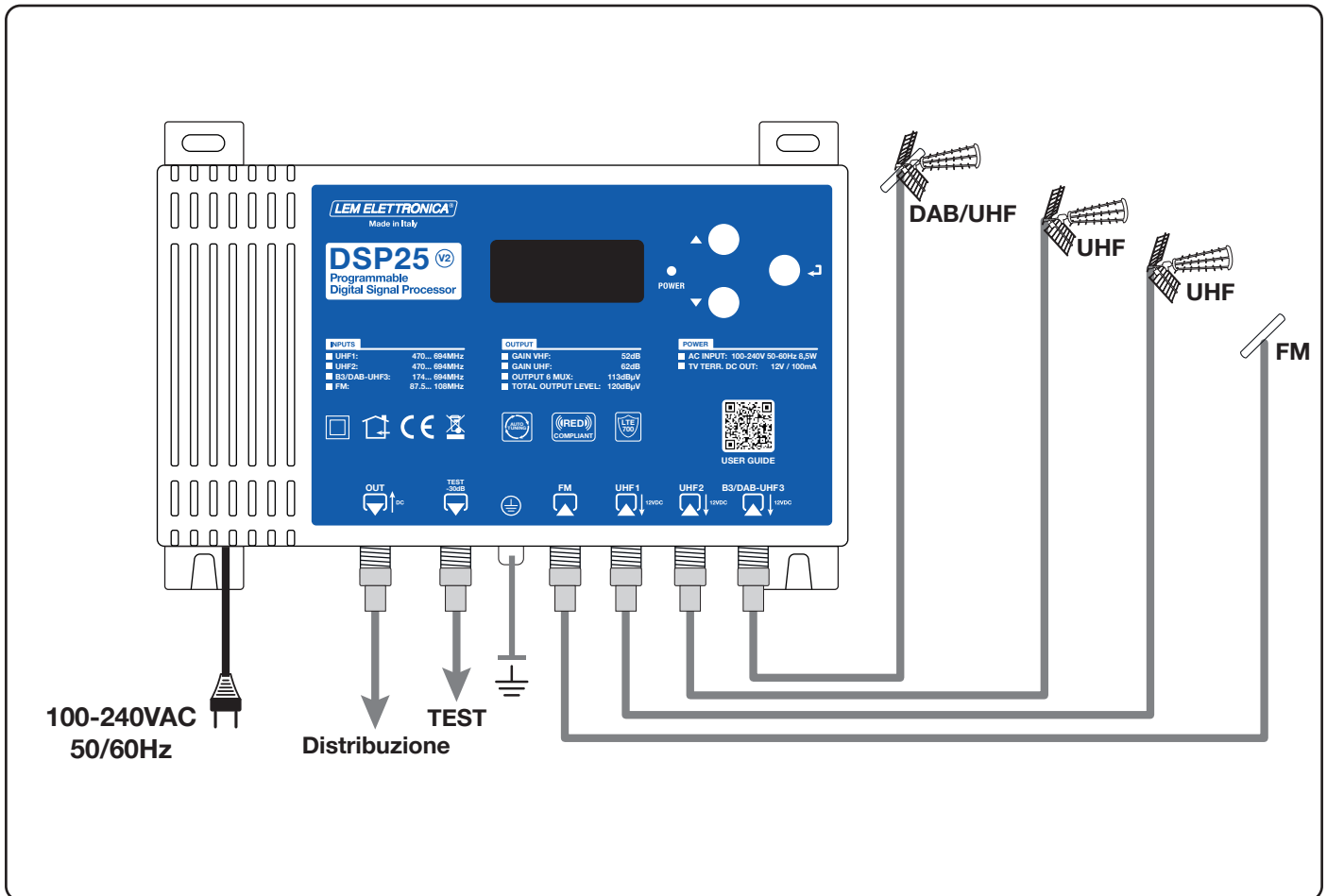Dispose according to local authorities recycling processes

⚠ Safety instructions

1. Do not expose the amplifier to extreme temperatures.
2. Place the amplifier in a dry and well-aired location.
3. Install the unit on a vertical wall, or in a waterproof cabinet with a minimum IP55 rating, and fix it safely using fixing plugs.
4. Connect the power cord to a detachable power supply socket.

Standard Connections Schematic

LEM ELETTRONICA®
Made in Italy

DSP25 V2
Programmable
Digital Signal Processor

POWER

INPUTS			OUTPUT			POWER	
UHF1:	470... 694MHz		GAIN VHF:	52dB		AC INPUT: 100-240V 50-60Hz 8,5W	
UHF2:	470... 694MHz		GAIN UHF:	62dB		TV TERR. DC OUT: 12V / 100mA	
B3/DAB-UHF3:	174... 694MHz		OUTPUT 6 MUX:	113dBμV			
FM:	87.5... 108MHz		TOTAL OUTPUT LEVEL:	120dBμV			

CE (RED) COMPLIANT LTE 700 AUTO

USER GUIDE

OUT DC   TEST -30dB   FM   UHF1 12VDC   UHF2 12VDC   B3/DAB-UHF3 12VDC

DAB/UHF

UHF

UHF

FM

100-240VAC
50/60Hz

TEST

Distribuzione

Installation and start-up

1 Connect an earth wire to grounding clamp

2 Connect the TV and Satellite coaxial cable to the amplifier's inputs

3 Connect the MATV output and terminate the unused inputs with 75Ω loads
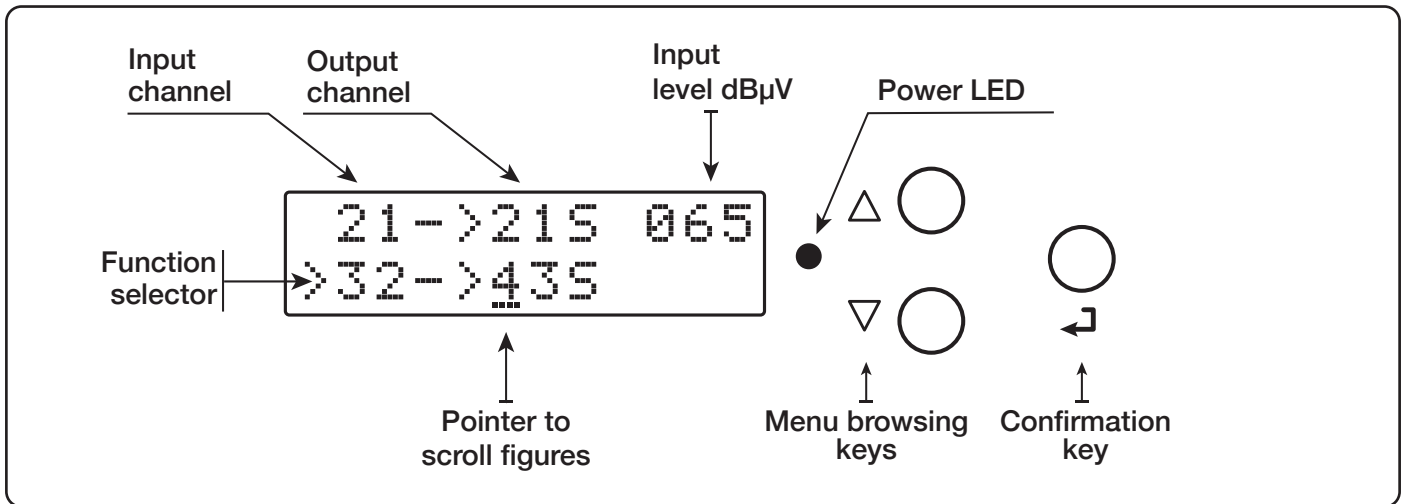
4 Connect the DSP25 power cord to mains plug

⚠ **Power Led red blinking**

Input short circuit or over current. Please check the input(s) with the remote power supply activated and remove the issue.

Amplifier Programming

1. Press any key to activate the display

2. Keep press ↵ for three seconds to enter the programming menu

Input channel   Output channel   Input level dBµV   Power LED

Function selector

21->21S 065
>32->43S

Pointer to scroll figures   Menu browsing keys   Confirmation key

Note: the display will go out after 1 minutes of inactivity remaining open on the last selected function. Press any key to continue.

Automatic channel scan and memorization

To begin the **AUTO-TUNING** procedure connect the antenna(s) to the **DSP25** inputs, then follow the operations described below.

```
TUNING
AUTO      MAN
```

To begin the automatic programming **AUTO-TUNING** select **AUTO** and Press ↵ to proceed.

```
>THRES:55dB
 START
```

Range: 45... 75dBµV 5 dB Steps

THRES is the sensitivity threshold level for the **AUTO-TUNING** scanning operations.

```
 TRES:55dBuV
>START
```

Press again ↵ to confirm the scanning start.

```
 TUNING
  WAIT
```

The amplifier display will start scanning from the input [1] than input [2] and input [3] in sequence.

During the scanning operations the Power Led will flash green. When the scanning and storing are finished the Power Led turn to steady green.

```
 OUTPUT
>LEV:110dBuV
```

The display will show the maximum output level optimal for the number of found MUX's. Press ↵ to confirm and complete the procedure. To change the output level press the keys ▽△ then press ↵ to confirm.

⚠ **Setting higher output levels of the optimal could reduce the quality of the received signals.**

💡 **If the number of the memorized MUX is lower than expected try reducing the THRES level and restart the AUTO-TUNING procedure.**

```
 NO MUX
 FOUND
```

If no MUX were found please check the antenna inputs or try reducing the THRES level and restart the AUTO-TUNING procedure.

Manual programming

```
TUNING
AUTO        MAN
```

Position the pointer --- on **MAN** to start the manual programming and press ↵ to continue.

💡 **Press the keys ▽ △ at the same time to go back to the main menu.**

INPUT V/U [1]

```
 INPUT V/U  1
```

To set the **INPUT V/U 1** parameters press ↵ to enter the menu.

INPUT 1 VHF - UHF
Channel range:
E5... E13 - DAB - E21... E48

12V REMOTE POWER

```
 INPUT V/U  1
>DC :   OFF
```

Place the function selector > on **DC** press ↵ select **ON** to enable the remote power supply from INPUT V/U 1 and press ↵ to confirm.

INPUT AMPLIFIER

```
 DC:OFF
>AMPLI:  ON
```

OFF= 0dB / ON= +16dB

Place the function selector > on **AMPLI** press ↵ and scroll the keys ▽ △ to select **ON** or **OFF** to enable or disable the input amplifier then press ↵ to confirm.

SINGLE MUX FILTERING

```
 AMPLI:  ON
>ADD 1 CH
```

Press ▽ △ to place the function selector > on **ADD 1 CH** and press ↵.

```
 AMPLI:  ON
>21->21 065
```

To activate the filtering function on a single MUX set the desired channel through the ▽ △ keys, then press ↵ twice to confirm.

```
 AMPLI:  ON
>21->21 065
```

The 3 digits value is the channel level in dBµV at the input

MUX CONVERSION

```
>26->26 068
 ADD 1CH
```

```
>26->27 068
 ADD 1CH
```

To activate the filtering and conversion function on a single MUX set the desired input channel through the ▽ △ keys and press ↵ to confirm. Select the output channel required for the conversion through the ▽ △ keys then press ↵ to confirm.

💡 **Output conversions up to the UHF channel 69 are permitted.**

```
DELETED
```

To delete a filter place the function selector > on the filter row and press ▽ and ↵ keys together.

DAB FILTER

```
  AMPLI: ON
>DAB>DAB
```

To activate the single 65MHz DAB filter press ▽ until the figure **DAB-DAB** is shown, then press ↵ to confirm.

FILTERS OVERLAPPING

```
 26<>26  *065
>25<>26  *070
```

The selection of two or more output filters with the same frequency is allowed but marked with *

💡 **Press the keys ▽ △ at the same time to go back to the main menu.**

INPUT [2] UHF

```
  INPUT U 2
```

INPUT 2 UHF
Channel range: E21... E48

To set the **INPUT 2 UHF** parameters, press ↵ to enter the menu.

The same procedures described for input 1 apply for all settings.

INPUT [3] UHF

```
  INPUT U 3
```

INPUT 3 UHF
Channel range: E21... E48

To set the **INPUT 3 UHF** parameters, press ↵ to enter the menu.

The same procedures described for input 1 apply for all settings.

INPUT FM

```
  INPUT FM
```

Press ↵ to enter the menu to set the **FM** input parameters.

FM AMPLIFIER

```
  INPUT FM
>AMPLI:ON
```

OFF= -10dB / ON= +10dB

Place the function selector > on **AMPLI** press ↵ and select **ON** to enable the FM amplifier and press ↵ to confirm.

OUTPUT LEVEL SELECTION

```
OUTPUT
```

Press ▽ to select the menu **OUTPUT** and press ↵ to confirm and check the selected output level.

```
 OUTPUT
>LEV:100dBuV
```

Output level: 94... 114dBµV

To adjust the output level, press ↵ and change the figure where the pointer is positioned to the required level. Press ↵ to confirm.

SLOPE

```
 LEV:100dBuV
>SLOPE:05dB
```

Range: 0... 10dB

To adjust the UHF slope select **SLOPE** press ↵ and press ▽ △ to set the value. Press ↵ to confirm.

VHF ATTENUATION

```
 SLOPE:5dB
>VHF:-10dB
```

Level: 0 ... -10dB

To adjust the VHF attenuation select **VHF** press ↵ and press ▽ △ to set the value. Press ↵ to confirm.

ADVANCED SETTINGS

```
ADVANCED
```

PROTECTION PASSCODE

```
 ADVANCED
>PASSW:000
```

Select **PASSW** and press ↵, press the∇ Δ keys to select the first figure from the right. Press ↵ to confirm. Repeat for the other figures and press ↵ to confirm.

Code 0 0 0= No protection password

FILTERS BANDWIDTH

```
 PASSW:000
>BW:AUTO
```

BW: AUTO/NRW/STD

Select **BW** and press ↵, press the ∇ Δ keys to select a non standard filter bandwidth. Press ↵ to confirm.

STD: all filters will be set in standard bandwidth.
NRW: all filters will be set with narrow bandwith
AUTO: Adjacent filters are automatically set as narrow and non-adjacent filters in standard mode.

SENSITIVITY THRESHOLD

```
 BW: AUTO
>THRES:055dB
```

Range: 45... 75dBμV

Select **THRES** values to have different threshold of sensivity for **AUTO-TUNING** and **MONITOR** scanning.

FAST A.C.G.

```
 THRES:55dB
>FAST:  OFF
```

Activation of the **FAST** function reduces the intervention time of the CAG (automatic gain control). This function is useful in the presence of unstable MUX with sudden changes in their level.

MONITOR

```
 FAST:OFF
>MONITOR:ON
```

Activating the **MONITOR** function activates a continuous cyclic check of all active filters, disabling those that are not involved in the transmission of a MUX.
The switch-off threshold is set by the **THRES** value described in the **SENSITIVITY THRESHOLD** function.

SERIAL NUMBER

```
 MONITOR:OFF
>SRNBR:XXXXX
```

RESET

```
   RESET
```

```
ARE  U  SURE?
YES        NO
```

To restore the default settings select **RESET** and confirm **YES** pressing ↵. The display will show **RESET OK** for a few second to confirm the operation. If you wish to skip the **RESET** select **NO** and press ↵ to confirm.

⚠ **Please note with the RESET all the programmed settings will be lost.**

EXIT

```
   EXIT
```

```
ARE  U  SURE?
YES        NO
```

To end the programming procedure select **EXIT** and press ↵. Select **YES** to exit programming mode and press ↵ to confirm.
To carry on with the programming, select **NO** and press ↵ to confirm.

Power Error

Power Led red blinking

Input short circuit or over current. Please check the input(s) with the remote power supply activated and remove the issue.

Label with serial and tracking data

AA 1 0 0 0 0 1 5 0 1 9 - X 1 0 2 0 L

- Model
- Serial #
- Manuf. Week
- Manuf. Year
- HW Rel.
- FW Rel.