

Programmable Multiband Amplifier TMB 100 & TMB 100S



User Manual ▪ Notice d'utilisation ▪ Manual de usuario ▪ Betriebsanleitung

Programmable Amplifier

TMB 100 & TMB 100S

General information	3
Safety instructions	3
Installing the unit	4
Programming the unit	5
Configuring the unit	6
Operating principle	6
Menus :.....	6
Flow chart	7
Menus	8
Config menu.	8
Configuration of filter distribution	8
Input amplifiers setting.....	9
Selection of remote power supply voltage.....	9
Remote power supply setup.	10
LTE function	10
Import and export menu	11
PIN Code	12
Language selection and Temperature display	12
UHF filters setup.	13
Setting the levels.	14
AGC	14
Auto level	14
SAT Menu.....	15
TMB 100 Diagram	16
Technical Specifications	17

Programmable Amplifier TMB 100 & TMB 100S

General information

The processing units in the **TMB100** range are used to selectively filter digital and analogue UHF channels. These units also couple and amplify VHF programmes according to the satellite band model (IF).

TMB100 units have 10 UHF filters, distributed over 3 inputs with programmable bandwidth from 1 to 7 channels (8 to 56 MHz), making it suitable for most situations.

An individual setting for each filter or frequency band, and automatic control of the UHF output level, for aligning service plan levels.

TMB-100 part nr. **360223**

5 inputs: **BI + FM, BIII-DAB, UHF1, UHF2, UHF3**

Gain UHF = 55 dB

Gain BIII = 48 dB

Gain BI-FM = 32 dB

Output level (max.) UHF = 117 dB μ V @ IMR -60 dBc

TMB-100S part nr. **324580**

6 inputs: **BI + FM, BIII, UHF1, UHF2, UHF3, SAT**

Gain Sat-IF = 40 dB

Gain UHF = 55 dB

Gain BIII = 48 dB

Gain BI-FM = 32 dB

Output level SAT (max.) = 118 dB μ V @ IMR -35 dBc

Output level UHF (max.) = 115 dB μ V @ IMR -60 dBc

Safety instructions

Important: The unit should only be opened by a qualified technician.

- Disconnect the unit before carrying out any work on it, as some powered components are dangerous (risk of electrical shock).
- To maintain the temperature of the unit within its normal operating range, ensure the free circulation of air around the unit (avoid placing it in enclosed spaces). The ventilation grids must be free of any obstruction.
- Ensure that no liquids can penetrate inside the unit (splashes and/or run off).
- Do not install the unit in a damp place. If there are traces of condensation on the unit, do not use it until it has dried completely.
- The mains power cable and the HF connection cables must be in good condition and free to move (neither crushed nor obstructed).
- The mains plug, easily accessible for the technician, must be out of reach of children.

Grounding of the unit

- Your aerial installation must comply with the requirements specified by the European provisions EN 50083-11 (conformity of collective installations) and EN 60065 (standards in force for electrical protection).

Replacing fuses

- Only a qualified technician can replace defective fuses.

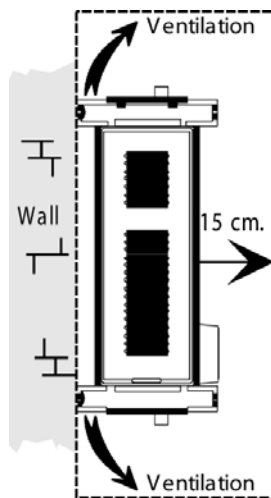
Electromagnetic compatibility (EMC)

- Ensure that the screws on the box are properly tightened.
- Cables and connection terminals should show no signs of rust.

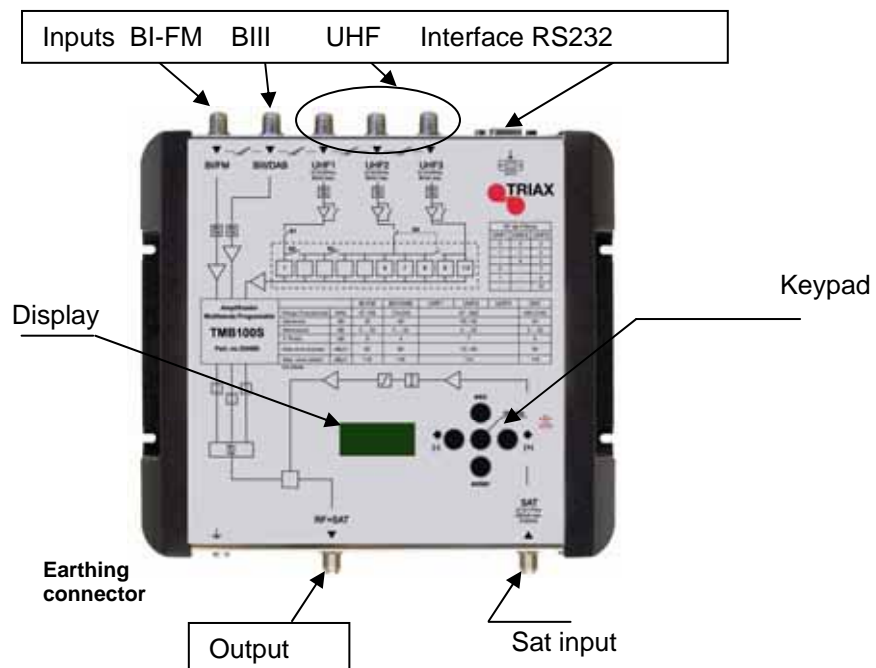
Programmable Amplifier TMB 100 & TMB 100S

Installing the unit

We recommend you install the unit in a sufficiently ventilated place. Natural ventilation must be able to occur through the ventilation grids; leave a minimum space of 15 cm around the unit to ensure maximum ventilation. When installing or cabling the unit, **we recommend you disconnect the mains power cable.**



Connecting the unit

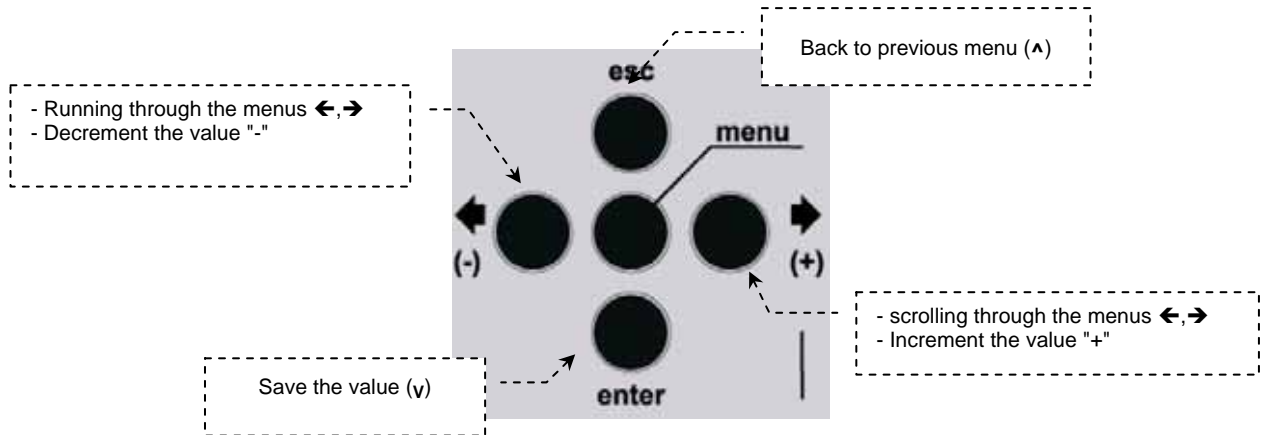


Note: UHF inputs are remotely supplied and protected against short circuits. The power available is 12 or 24V, 50mA max. The preamplifier is detected automatically; only the remote power voltage can be programmed.

Programmable Amplifier TMB 100 & TMB 100S

Programming the unit

A 4-digit display and a keypad are all you need to programme the unit. Follow the procedure below for configuring the various parameters.



When the unit is powered on:

- the programme mode is in standby:
- by default, the system is configured as follows:
 - UHF1 → 3 UHF filters
 - UHF2 → 0 UHF filters
 - UHF3 → 7 UHF filters
- all the UHF filters are deactivated (display "- - -"),
- the attenuators are at zero.

Factory reset

If necessary, to revert to factory settings, follow the procedure below:

1. Disconnect the power cable
2. Press the **esc** button and hold it
3. Connect the power cable

The unit erases all the programming parameters, including the PIN code, and switches to standby mode.

You can release the **esc** button when the display shows "Default Settings".

Programmable Amplifier TMB 100 & TMB 100S

Configuring the unit

On powering on, the unit is in standby mode, a light segments flashes across the display.

Operating principle

To access the configuration menus, press a button

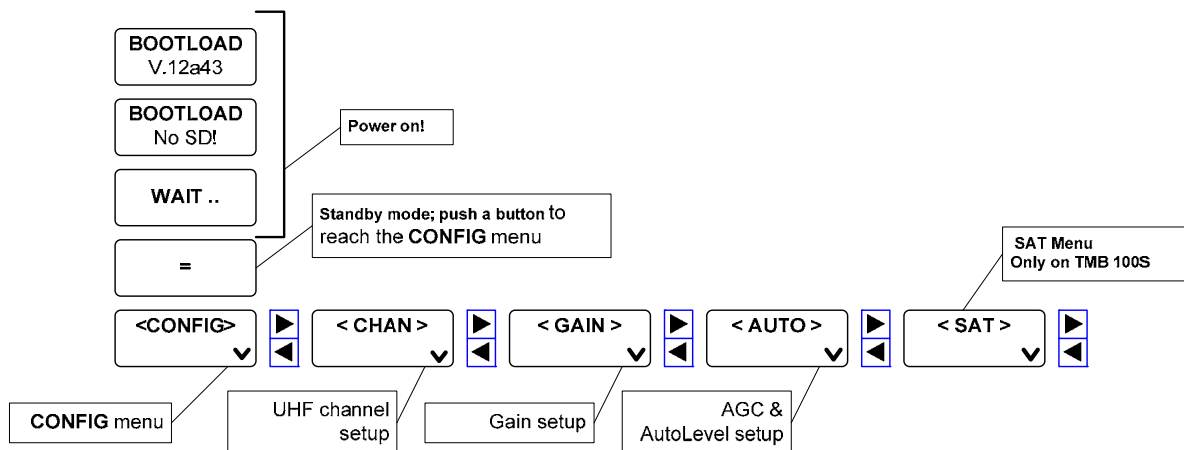
To summarize:

- To scroll through the menus, use the **+** / **-** buttons.
- To enter a menu, press **enter**.
- To exit a menu, press the **esc** button
- Press the Menu button to have a quick access to the **CONFIG** menu

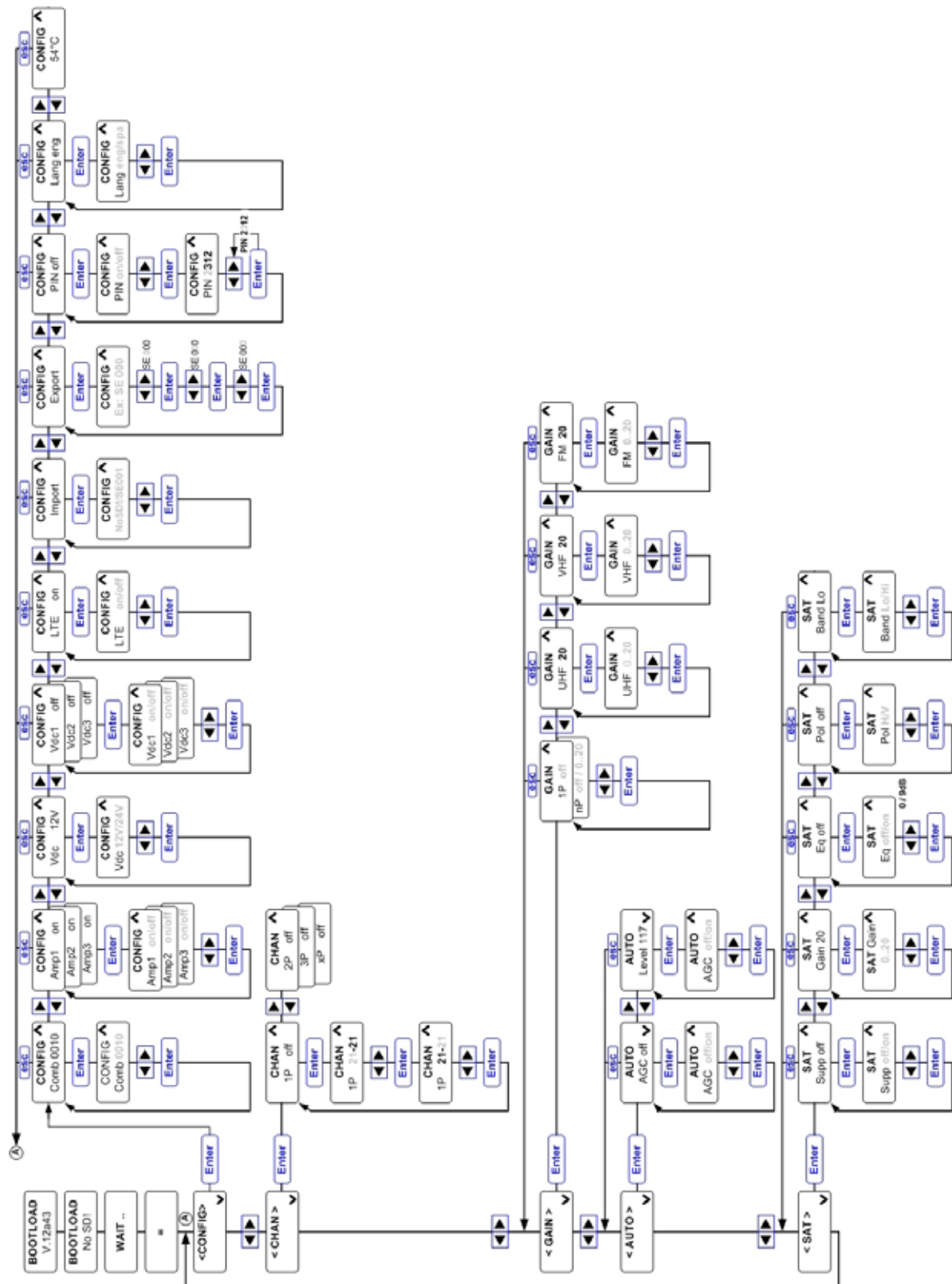
Note:

If the button is not pressed for one minute, the unit switches to standby mode.

Menus :



Flow chart



Programmable Amplifier TMB 100 & TMB 100S

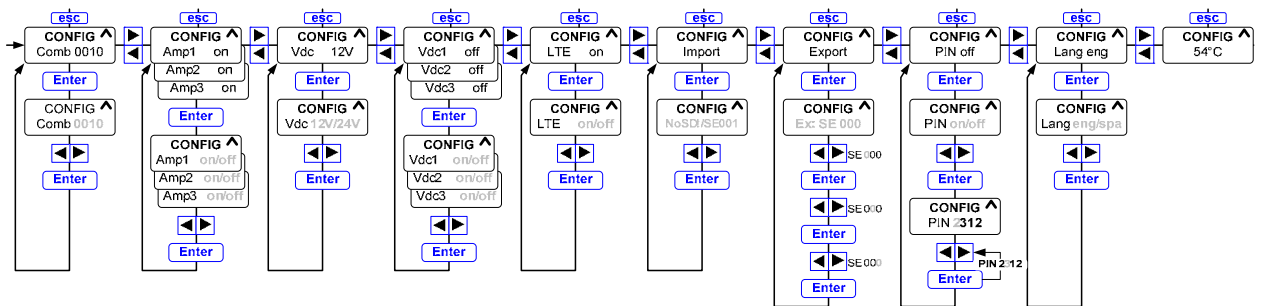
Menus

Config menu

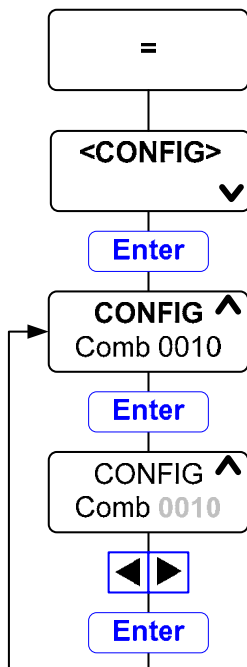
This menu allows:

- Configuration of filter distribution on UHF1, 2 and 3 inputs.
- Switch on/off the input amplifiers
- Selection of remote power supply (12 or 24 VDC).
- Select the remote power for the UHF inputs
- To limit the UHF channels at channel 60
- Import or export a configuration file
- Activate the PIN code menu
- Select the language
- Display the internal temperature

Comb 0010
Ampx on/off
12 or 24 VDC
VDCx on/off
LTE on / off
Import/Export
Ang/Esp



Configuration of filter distribution



- Unit in standby mode, push a button to reach the **CONFIG** menu.
- Press the **enter** button to reach the **Comb** menu.
- Press **enter** again to change the configuration of the UHF inputs (part of the display flashes)
- Press the buttons **+** or **-** to select the distribution of the filters over the UHF inputs.
- Confirm by pressing **enter**

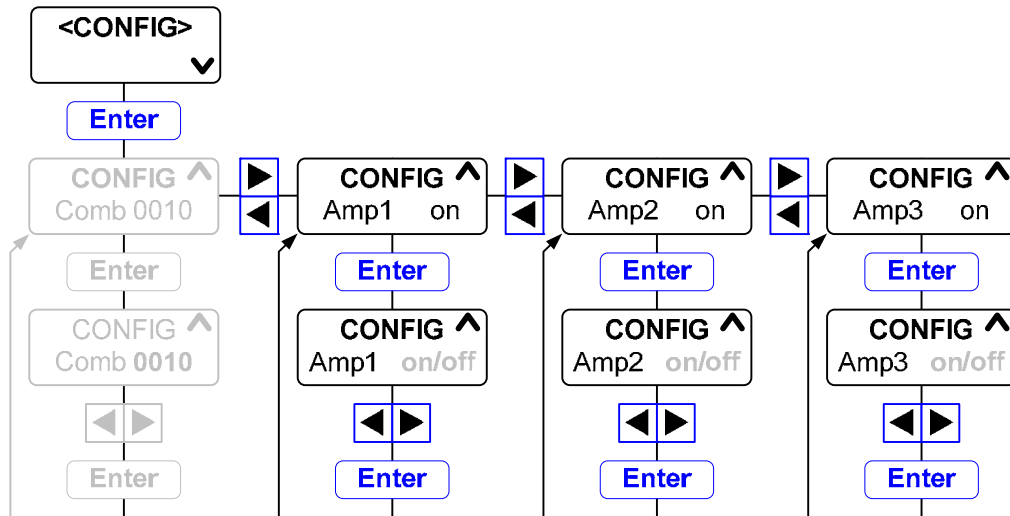
Input	UHF1	UHF2	UHF3
Number of filters per UHF input	3	5	2
	1	7	2
	0	8	2
	3	0	7
	1	0	9
	0	0	10

Notes:

Each UHF filter can be deactivated. Just configure the filter in question to the value "off".

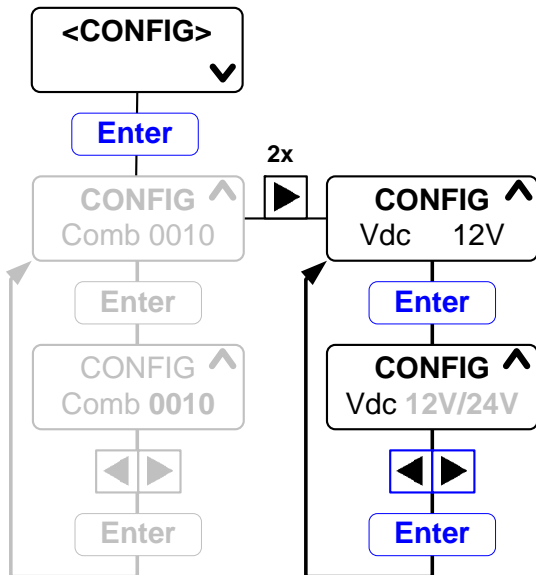
Programmable Amplifier TMB 100 & TMB 100S

Input amplifier setting.



- Unit in standby mode, push a button to reach the **CONFIG** menu.
- Press the **enter** button to select the **Comb** menu.
- Press the **→** button to reach the **AmpX** menu.
- Press **enter** to activate the menu
- Press the buttons **+** or **-** to change the configuration of the UHF input amplifiers (**on/off**)
- Confirm by pressing **enter**

Selection of remote power supply voltage.

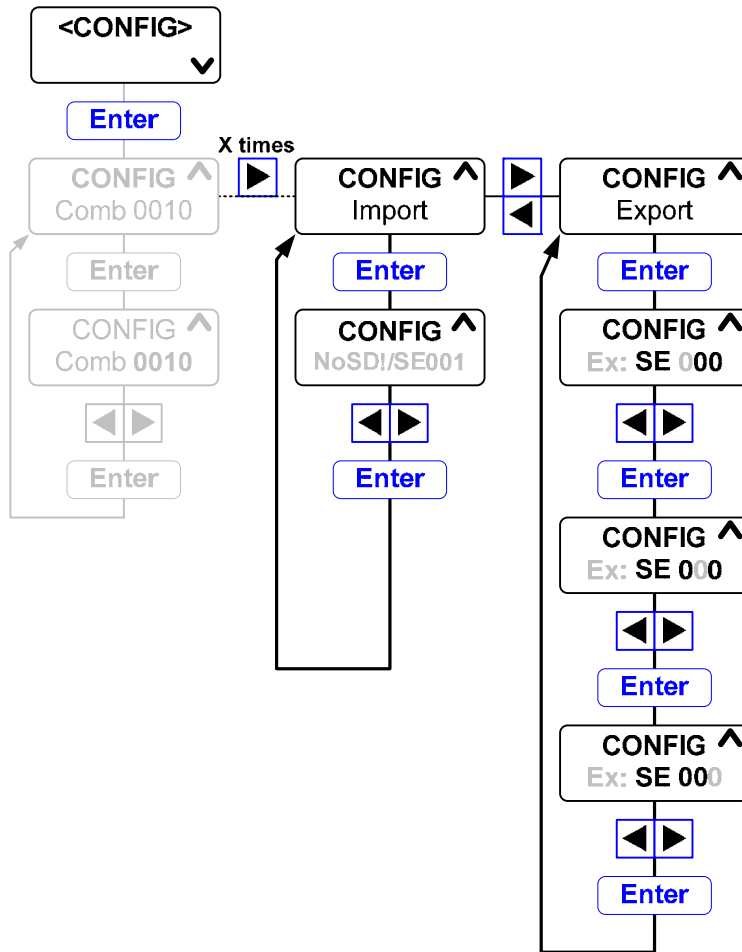


- Unit in standby mode, push a button to reach the **CONFIG** menu.
- Press the **enter** button to select the **Comb** menu.
- Press the **→** button 2 times to reach **Vdcx** menu.
- Press the **enter** to activate the menu
- Press the buttons **+** or **-** to select the Voltage (**12 or 24 VDC**)
- Confirm by pressing **enter**

- ### ***Remote power supply setup.***

Programmable Amplifier TMB 100 & TMB 100S

Import and export menu



- Unit in standby mode, push a button to reach the **CONFIG** menu.
- Press the **enter** button to select the **Comb** menu.
- Press the → several times to reach **Import or Export** menu.
- Press **enter** to activate the menu
- Press the buttons + or - to select the file (**SE00x**)
- Confirm by pressing **enter**

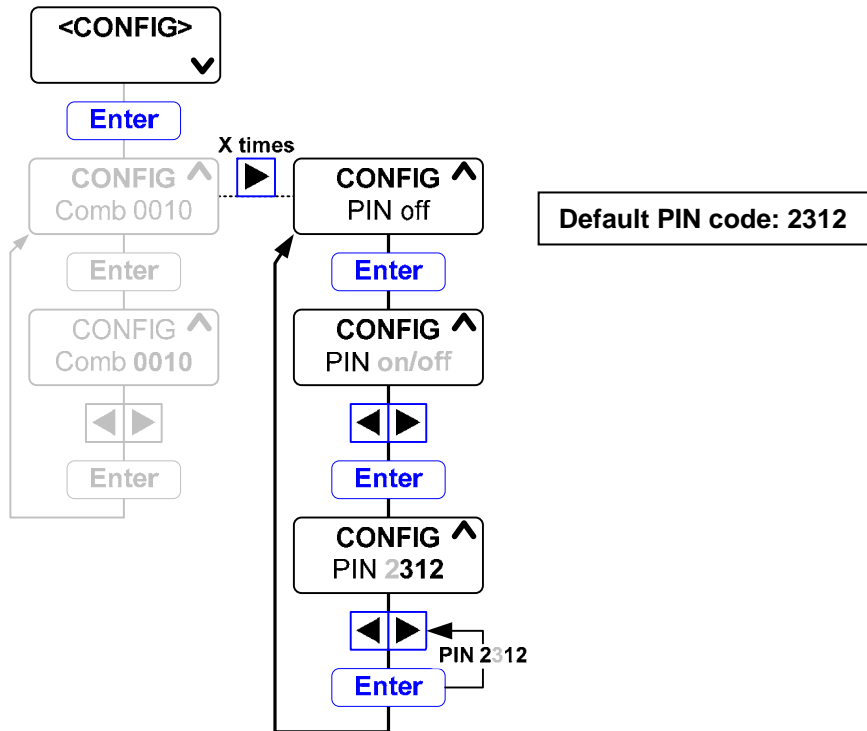
The TMB units are equipped with RS232 interface, please use an RS232/SD adapter to store your configuration files.

Important.

- When using these menus and no SD card is available the display shows **NoSD**.
- The SD/MMC card should be in FAT16 format. Files should be in root directory.

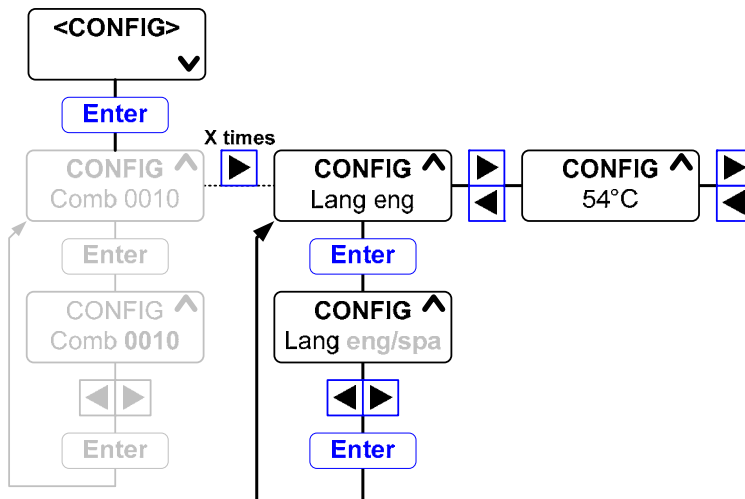
Programmable Amplifier TMB 100 & TMB 100S

PIN Code



- Unit in standby mode, push a button to reach the **CONFIG** menu.
- Press the **enter** button to select the **Comb** menu.
- Press the **→** several times to reach **PIN** menu.
- Press **enter** to activate the menu
- Press the buttons **+** or **-** to change the configuration (**on/off**)
- Confirm by pressing **enter**
- Choose your PIN code (only if on is selected)
 - Press **enter** to activate the menu
 - Press the buttons **+** or **-** to change the number
 - Confirm by pressing **enter**
 - Do the same for the other digits

Language selection and Temperature display



Programmable Amplifier

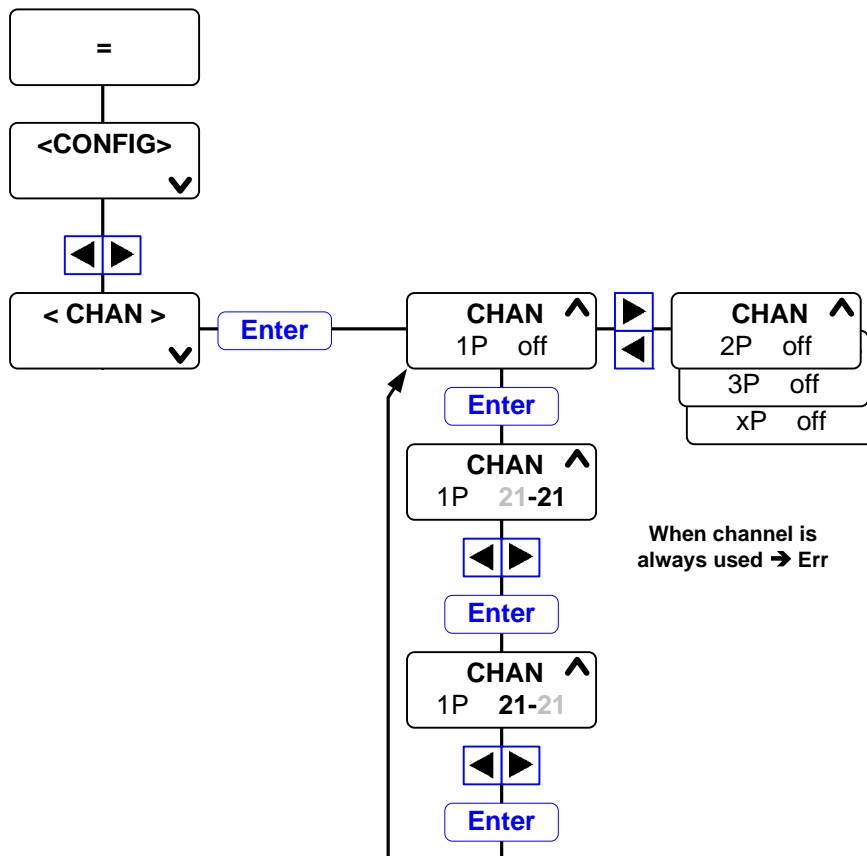
TMB 100 & TMB 100S

UHF filters setup.

- Unit in standby mode, push a button to reach the **CONFIG** menu.
- Press the **→** button *to reach the* **CHAN** menu.
- Press **enter** to activate the menu
- Press **enter** again to setup the UHF filter
- Press the buttons **+** or **-** to select the start channel
- Confirm by pressing **enter**
- Press the buttons **+** or **-** to select the end channel
- Confirm by pressing **enter**
- Press the **→** button to setup the next channel

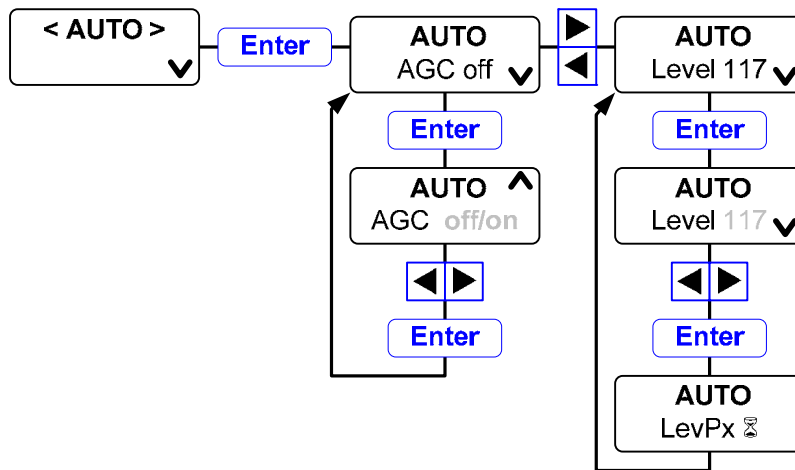
Notice:

- The number of filter is according to the configuration of filter distribution
- In LTE mode = off only channel 21 to 60 are available.



- Unit in standby mode, push a button to reach the **CONFIG** menu.
- Press the ➔ button several times *to reach the Auto/Level* menu.
- Press **enter** to activate the **Level** menu
- Press the buttons **+** or **-** to change the value
- Confirm by pressing **enter**
- Press the buttons **+** or **-** to change the value
- Confirm by pressing **enter**

Programmable Amplifier TMB 100 & TMB 100S



IMPORTANT!

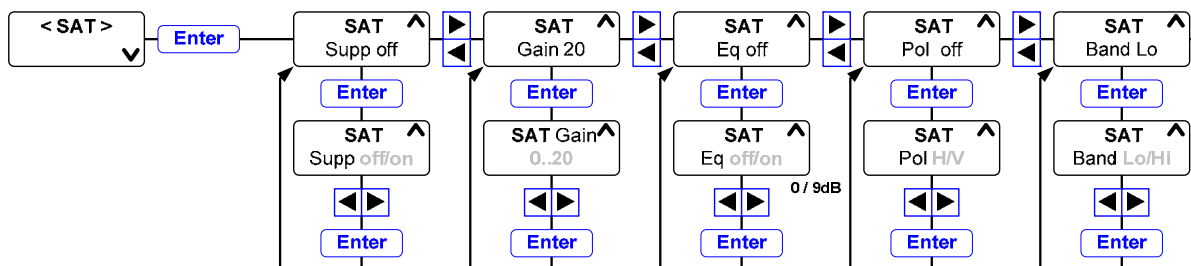
- AGC: The unit memorizes the average output level. A variation of ± 1 dB triggers the function and compensates the variation within gain and attenuation limits
- AGC mode hides all other menus. To modify the parameters, switch the AGC mode to OFF.
- Auto Level: The unit memorizes the selected output level, the function try to reach the value within input, gain and attenuation limits.

Note: Setting of the levels BI-II / BIII is not automatic.

SAT Menu

TMB 100S models have one IF amplification path. The Sat menu is used to configure the remote power supply of the LNB (OFF / 13 / 17 V_{DC}), to activate the 22kHz generator and the 9dB equalizer.

- Unit in standby mode, push a button to reach the **CONFIG** menu.
- Press the **→** button several times to reach the **SAT** menu.
- Press **enter** to activate the **SAT** menu
- Press the **←** or **→** button to select the **Supp**, **Gain**, **Eq**, **Pol** or **Band** menu.
 - Supp (power **on** or **off**)
 - Gain
 - Eq (Equalizer 0dB_ **off** or 9dB_ **on**)
 - Pol (**H** or **V polarization**)
 - Band (**Lo/H Band**)
- Press **enter** to activate the selected menu
- Press the buttons **+** or **-** to change the value
- Confirm by pressing **enter**



TMB 100S Diagram

UHF1 2 filter	UHF2 8, 7 oder 5 filter	UHF3 0, 1 ou 3 filter	Bandwidth of the filter	Value		
				Gain	AGC	Level
			47 ... 108 MHz			
			174 ... 230 MHz			
			(1 .. 7 Kanäle) 8 .. 56 MHz			
			(1 .. 7 Kanäle) 8 .. 56 MHz			
			(1 .. 7 Kanäle) 8 .. 56 MHz			
			(1 .. 7 Kanäle) 8 .. 56 MHz			
			(1 .. 7 Kanäle) 8 .. 56 MHz			
			(1 .. 7 Kanäle) 8 .. 56 MHz			
			(1 .. 7 Kanäle) 8 .. 56 MHz			
			(1 .. 7 Kanäle) 8 .. 56 MHz			
			(1 .. 7 Kanäle) 8 .. 56 MHz			
			(1 .. 7 Kanäle) 8 .. 56 MHz			

Programmable Amplifier TMB 100 & TMB 100S

Technical Specifications

Type Part nr.	Units	TMB 100 360223	TMB 100S 324580																																				
Number of inputs		5	6																																				
AMPLIFICATION																																							
Max. BI+FM / BIII / UHF / SAT input level	dB	90 / 80 / 95 / -	90 / 80 / 95 / 80																																				
BI+FM (47 .. 108 MHz) gain	dB	32	32																																				
BIII (174 .. 230 MHz) gain	dB	48	48																																				
UHF ("LTE on": 470 .. 790 MHz; "LTE off": 47 .. 862 MHz) gain	dB	55	55																																				
SAT (950 .. 2150 MHz) gain	dB		40																																				
Pre-emphasis SAT path	dB		0/9 (switchable)																																				
BI+FM / BIII / UHF / SAT Noise Figure	dB	9 / 5 / 7 / -	9 / 5 / 7 / 7																																				
Attenuator per input	dB	0 ... 20	0 ... 20																																				
Global UHF attenuator	dB	0 ... 20	0 ... 20																																				
Max. Output level BI / BIII / UHF (IM ₃ -60dB) / SAT (IM ₃ -35 dBc)	dBμV	120/120 / 117 / -	120 / 120 / 115 / 118																																				
FILTERING																																							
Selectable filter allocations UHF1 / UHF2 / UHF3		<table><tr><td>3</td><td>5</td><td>2</td></tr><tr><td>1</td><td>7</td><td>2</td></tr><tr><td>-</td><td>8</td><td>2</td></tr><tr><td>3</td><td>-</td><td>7</td></tr><tr><td>1</td><td>-</td><td>9</td></tr><tr><td>-</td><td>-</td><td>10</td></tr></table>	3	5	2	1	7	2	-	8	2	3	-	7	1	-	9	-	-	10	<table><tr><td>3</td><td>5</td><td>2</td></tr><tr><td>1</td><td>7</td><td>2</td></tr><tr><td>-</td><td>8</td><td>2</td></tr><tr><td>3</td><td>-</td><td>7</td></tr><tr><td>1</td><td>-</td><td>9</td></tr><tr><td>-</td><td>-</td><td>10</td></tr></table>	3	5	2	1	7	2	-	8	2	3	-	7	1	-	9	-	-	10
3	5	2																																					
1	7	2																																					
-	8	2																																					
3	-	7																																					
1	-	9																																					
-	-	10																																					
3	5	2																																					
1	7	2																																					
-	8	2																																					
3	-	7																																					
1	-	9																																					
-	-	10																																					
Bandidth of filtering channels	MHz	8 .. 56 (1...7 Ch)	8 .. 56 (1...7 Ch)																																				
Filter selectivity @ ± 16 MHz	dB	>14	>14																																				
BI+FM / BIII / UHF / SAT Input return loss	dB	> 8 / 10 / 8 / -	> 8 / 10 / 8 / 6																																				
Output return loss	dB	> 8 / 8 / 8 / -	> 8 / 8 / 8 / 8																																				
CONDITIONS of OPERATION																																							
Power supply (50-60 Hz)	VAC	100...240	100...240																																				
Power consumption at 230VAC (dependent on remote supplying)	W	9...16	12...18																																				
External PSU with Euro plug	V / A	12 / 1,25	12. Feb																																				
Remote supply UHF 1, 2 or 3	V / mA	12 or 24 / 80	12 or 24 / 80																																				
Input equiped with remote supply		UHF 1, 2 and 3	UHF 1, 2 and 3																																				
LNB power supply	V / mA		0 /13or 17																																				
22 kHz generator on Sat input			ON / OFF																																				
Operating temperature	°C	-5 ... +40	-5 ... +40																																				
MECHANICS																																							
Input/output connectors		"F" femal																																					
Dimensions (H xW x D)	mm	225 x 220 x 50																																					
CONFORMITY																																							
CE		2004/108/EC (EMC Directive) und 2006/95/EC (Low Voltage Directive)																																					
ROHS		2011/65/EC (RoHS Directive)																																					



TRIAX A/S
Bjoernkaervej 3
DK-8783 Hornsyld
Tel. +45 76 82 00
Fax +45 88 20 04 20
E mail triax@triax.dk
www.triax.com

TRIAX A/S

Bjørnkærvej 3 • DK-8783 Hornsyld
 Tel: +45 76 82 22 00 • Fax: +45 88 20 04 20
 mail: triax@triax.dk • www.triax.com



User Manual • Notice d'utilisation • Manual de usuario • Betriebsanleitung