

# WWK-9103

## Programmable Multiband Amplifier

### User Manual

10-7538-355-01

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## Recycling of waste electric and electronic equipment



This symbol on the product or its package indicates that the product is subject to Directive 2002/96/EC (WEEE) and shall not be disposed of together with household waste. Return the used product to a collection point of waste electric and electronic equipment.



Correct disposal of the waste electric and electronic equipment reduces the potential hazard to the environment and human health.



To know more about the recycling and processing of waste electric and electronic equipment please contact local authorities, municipal services or a waste processing centre.

## 1. General

Programmable multiband amplifier WWK-9103 is designed for use in antenna systems receiving terrestrial analogue and digital TV programs in detached houses, residences, terrace houses, hotels, boarding houses, holiday centers, schools, hospitals, etc. - even situated in places with difficult reception conditions, where the received signals have different levels and are coming from different directions. WWK-9103 enables to receive these signals, to equalize their levels and to amplify them. The WWK amplifier can be used as an independent unit, as well as a part of a bigger head-end station..

- Selective, independent amplification for 10 channel paths in UHF range
- Possibility of expanding channel path up to 7 TV channels (8...56MHz)
- Supplies antenna's preamplifiers for UHF1-UHF3 inputs
- Prepared for analog and digital Terrestrial TV signal – DVB- T/T2
- Build-in LTE 800 and 700 filtration
- Low-power consumption
- Easy installation and activation

WWK-9103 is equipped with 10 channel paths P1...P10 for UHF1-UHF3 inputs. Every channel has an adjustable filter, which can be tuned in range of 21...69 . Furthermore frequency band of every channel may be expanded from 8 up to 56 MHz ( 1 up to 7 TV channels ). UHF1- UHF3 inputs enable to supply preamplifiers with +12 V or +24 V voltage.

5 inputs: **FM, VHF, UHF1, UHF2, UHF3**

UHF amplification = 55 dB

VHF amplification = 48 dB

FM amplification = 32 dB

UHF output level = 117 dB $\mu$ V @ IMR3 -60 dBc

## 2. Safety-related information @ IMR3- 60dBc

**Important:** the device may be opened by qualified personnel only.

- Before starting work, unplug the device as some live components are dangerous (electric shock hazard);
- In order to keep the device temperature within the standard operating range, make sure that the airflow around the device is not obstructed (avoid confined spaces). The ventilation holes shall not be blocked in any way;
- Make sure no liquid gets inside the device (as a result of jet and/or dripping);
- Do not install the device in a wet place. If signs of condensation appear on the device, do not use until it is totally dry;
- The AC power cable and RF cables must be in good conditions, not loaded, crushed or pressed.
- The electrical outlet easily accessible for technical personnel must be out of reach of children.

### Earthing

- The antenna wiring shall conform to the European Standards EN 50083 (conformity of collective systems) and EN 60065 (electrical protection requirements).

### Fuse replacement

- Damaged fuses may be replaced by qualified personnel only.

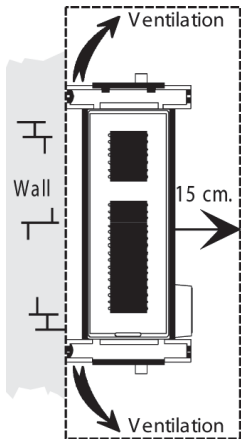
### Electromagnetic compatibility (EMC)

- Make sure the bolts in the enclosure are well tightened;
- Cables and terminals must not be oxidized.

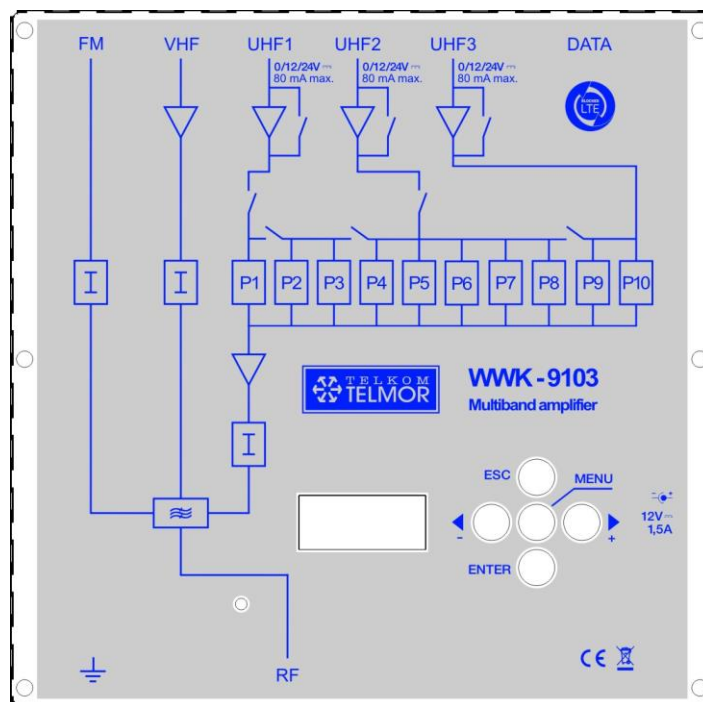
### 3. Installation of control unit

It is recommended to install the device in a sufficiently ventilated area. The natural ventilation shall be provided by ventilation openings. Leave a minimum 15-cm space around the device to ensure maximum ventilation.

During the installation of control unit or works on cabling, **we recommend that the power cable be unplugged.**



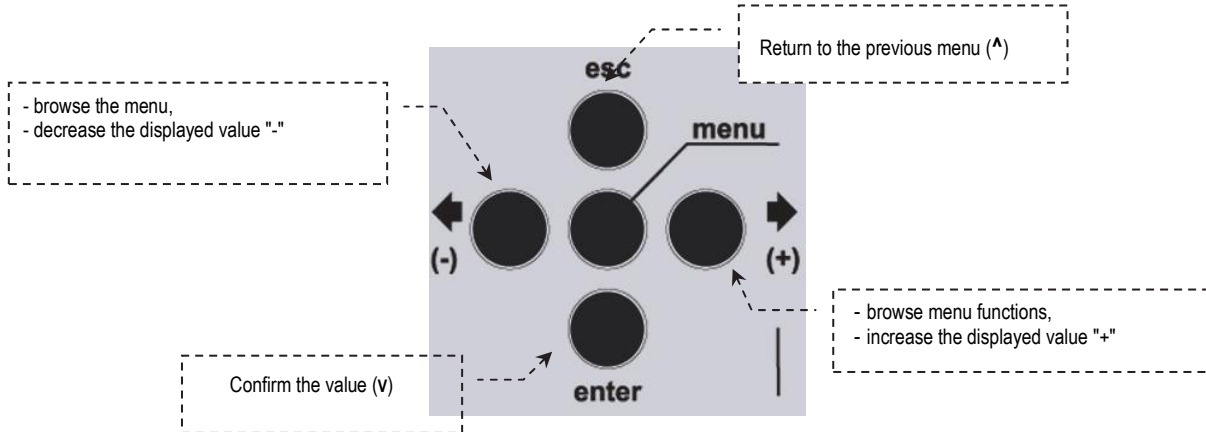
#### 3.1 Connecting the WWK-9103



**Note:** the UHF inputs are equipped with remote on/off power supply which can be switched. The possible voltage is 12 or 24 V, max. 80 mA.

## 4. Programming

The device is programmed using the display and a 5-button keypad. The programming procedure for individual parameters is given below.



During the powering up:

- the programming mode is on standby:
- if no changes are made in the programming, the system is configured as follows:
  - UHF1 -> 0 UHF filters
  - UHF2 -> 0 UHF filters
  - UHF3 ->10 UHF filters
- all UHF filters are deactivated (the display shows "off"),
- dampers are in zero position.

### 4.1 Return to default settings

If it is necessary to return to default settings:

1. Unplug the power cable
2. Press **esc** and keep it depressed
3. Plug the power cable

All programming parameters are deleted and the display shows the message "Default Settings."



4. Release the **esc** button

## 5. Configuration

After powering up, the unit is in standby mode; the display shows the sign =.

### 5.1 Principle of operation

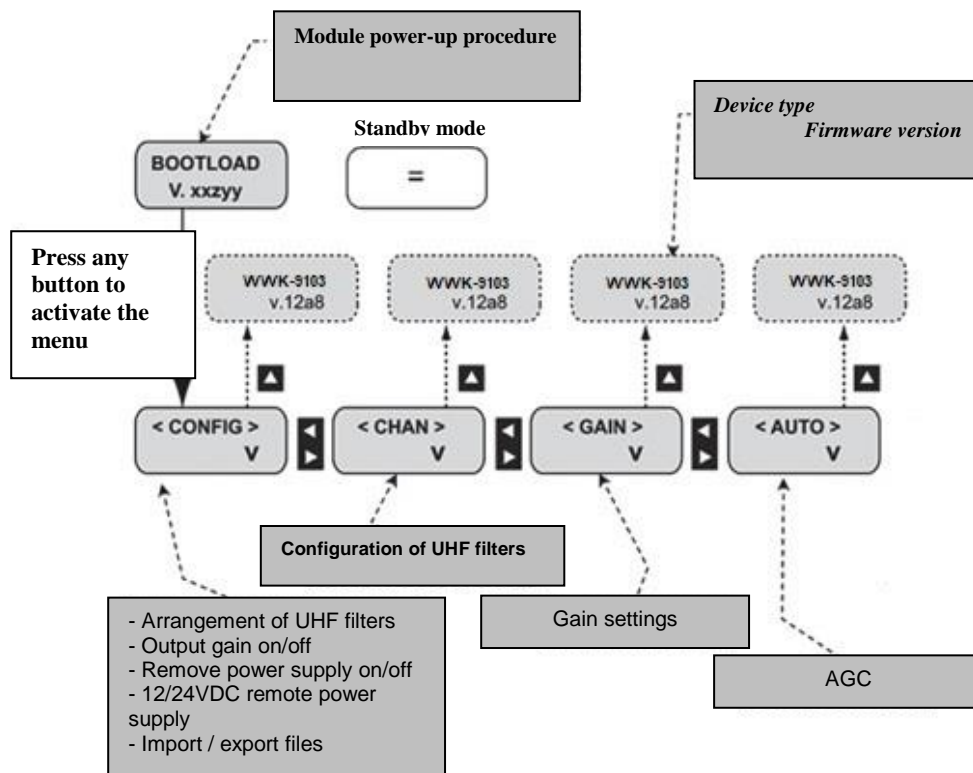
Press any button to get access to the configuration menu in standby mode.

**In brief:**

- Use **+** / **-** to navigate the menu;
- Press **enter** to enter the menu;
- Press **esc** to exit the menu; press **menu** to return directly to the configuration menu.

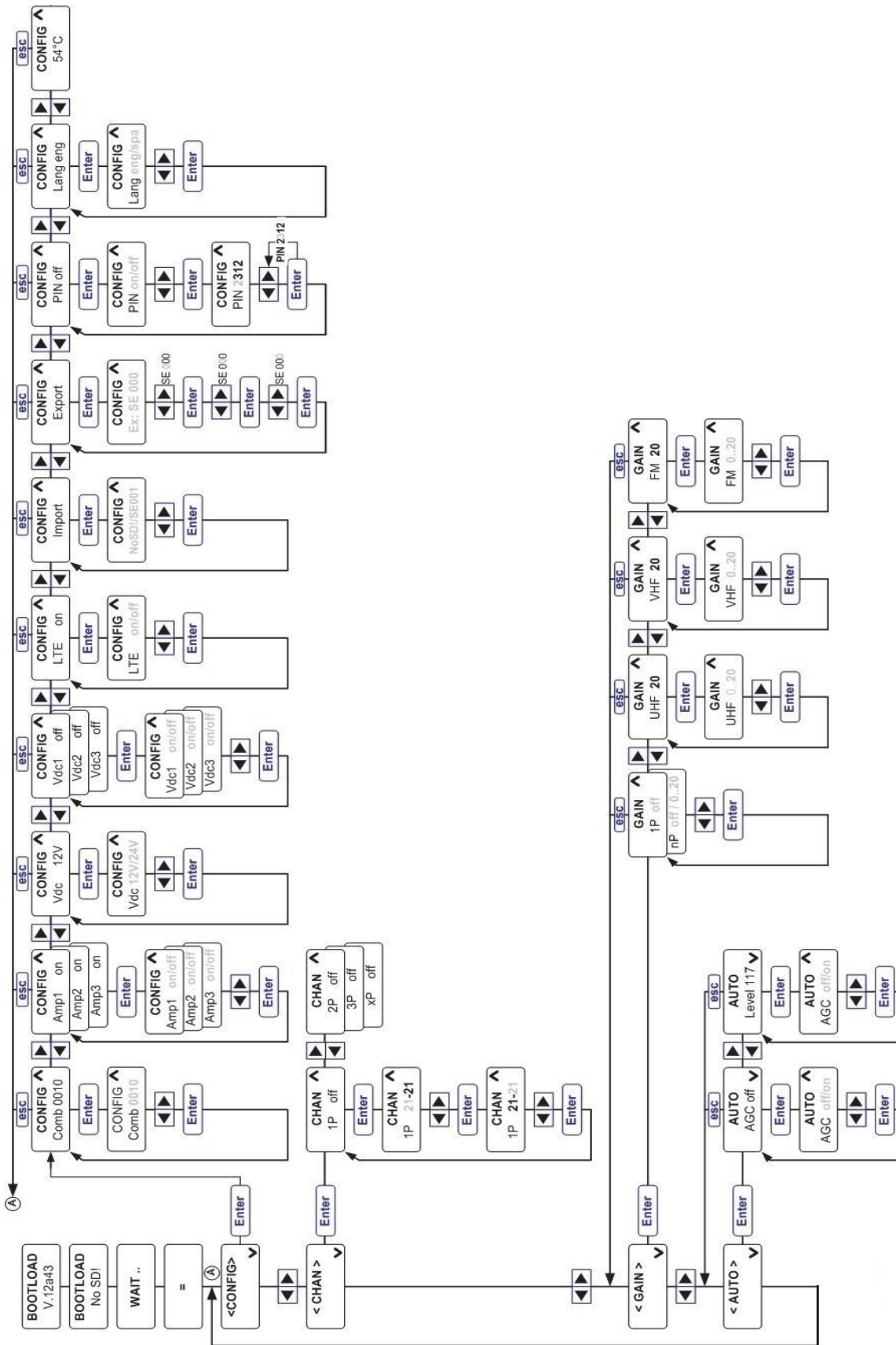
**Note:**

After a minute of inactivity, the control unit will go to the standby mode.

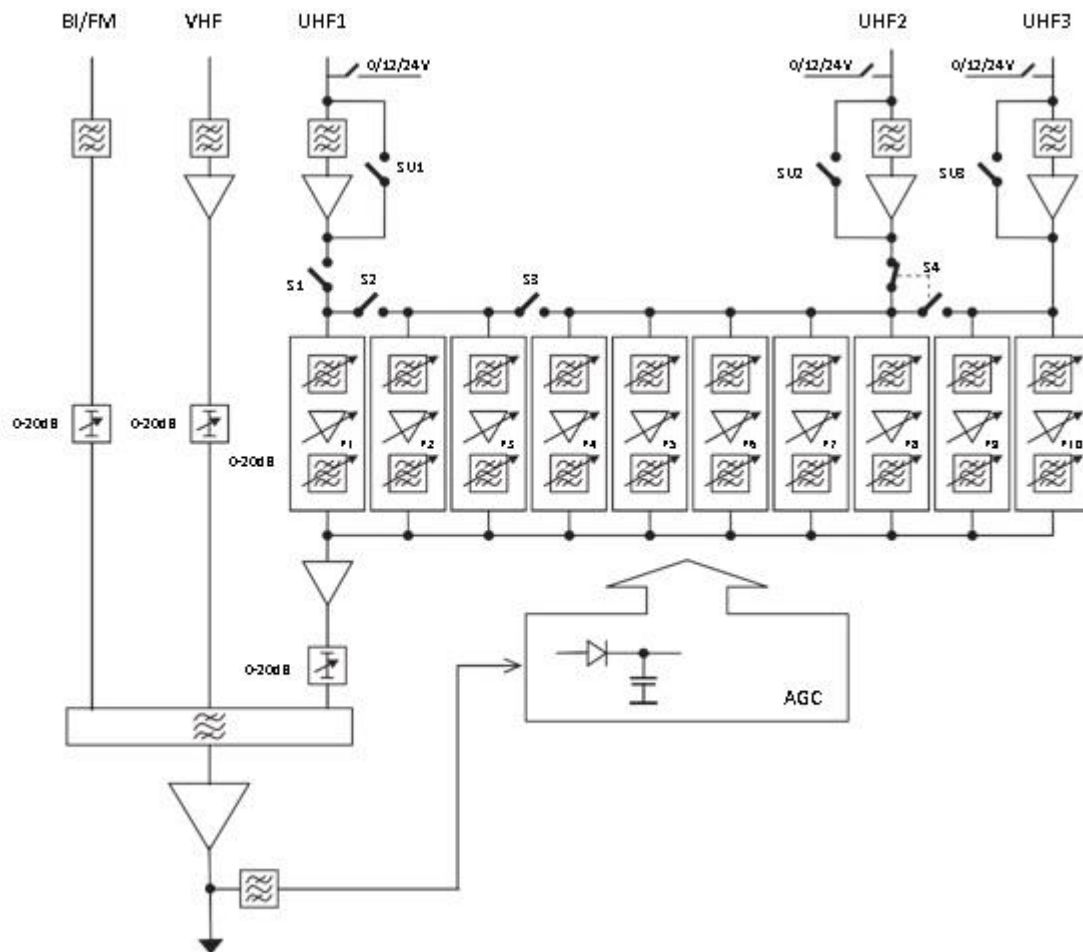


Note: = ^ esc

## 6. Operation diagram



## 7. Block diagram





## 8. Technical specification

DESIGNATION		WWK-9103				
Inputs	/	FM	VHF	UHF1	UHF2	UHF3
Max. output level	dB	90	80	90		
Input	dB	32	48	55		
Noise ratio	dB	9	5	7		
Gain control	dB	0 to 20				
UHF gain control	dB	-	-	0 to 20		
VHF/UHF max. output level (IM3-60dB)	dB $\mu$ V	120		117		
Filters arrangement	/	-		3	5	2
				1	7	2
				-	8	2
				3	-	7
				1	-	9
			-	-	10	
Width of filtering channels	MHz	-	8 to 56			
Filter selectivity up to $\pm$ 10 MHz	dB	-	10			
Return loss at inputs	dB	-	>8			
Return loss at outputs	dB	-	>8			
OTHER						
Supply voltage	V/AC	Desktop 12/ 2,5				
Power consumption at 230V	W	9...16				
UHF remote power supply	V/mA	12 or 24 / 80				
Equipped inputs (remote power)	V/mA	UHF 1, 2 and 3				
Operating temperature	$^{\circ}$ C	-5 to +40				
Input/output sockets	/	F female				
Dimensions	mm	225 x 220 x 50				
Weight	kg	0,90				
Packaging	/	carton box				

Technical parameters may be changed without earlier notice.