

XTEQ-50p

DIGITAL SIGNAL PROCESSOR

- ▶ 24 Digits LCD display
- ▶ Auto-Tuning function
- ▶ Additional AUX input
- ▶ Maximum Output Level 124dB μ V
- ▶ Selectable Lte 4G/5G SAW filters
- ▶ Up to 64 High Selectivity Filters with ACG
- ▶ Converts up to 32 single channels
- ▶ Zamak die casting chassis

High selectivity programmable compact headend to digitally filter, convert and equalize DVB-T / T2 channels. The built in high output amplifier allow the use in medium and large installation plants.



Firmware rel. 1.5

Hardware rel. 1.2

MODEL		XTEQ-50P
NUMBER OF INPUTS	6	1 FM; 2 BIII-DAB/UHF; 2 UHF
INPUTS FREQUENCY RANGE	MHz	FM (40... 108 MHz) VHF (170... 240 MHz) UHF 470... 694/790/862 AUX (40... 862)
SINGLE CHANNEL FILTERS		32
NUMBER OF CHANNEL PER FILTERS		1... 2
INPUT LEVEL RANGE	dB μ V	FM 35... 90 - BIII/DAB 40... 110 - UHF... 40... 110
FM INPUT ATTENUATOR	dB	FM 0...-30
BIII-DAB / UHF INPUTS ATTENUATORS	dB	0... -20
AUX IINPUT ATTENUATOR	dB	0... -20
A.C.G. RANGE	dB	40 dB
SELECTIVITY	dB	35 @1MHz
INTERSTAGE ATT. (1 dB STEP ADJUST.)	dB	0...-20
FM GAIN	dB	45
VHF GAIN	dB	40
VHF ADJUSTER	dB	0... -10
UHF GAIN	dB	50
UHF SLOPE	dB	0... 5 (1 dB Step)
MAX OUTPUT LEVEL	dB μ V	124 (IM3 DIN 45004B - 60 dBc)
RETURN LOSS IN/OUT	dB	>12
TEST OUTPUT		1 (-30 dB)
USB CONNECTOR		USB 1.0 / 2.0 Type B
REMOTE POWER SUPPLY VHF-UHF		12V / 24V 100 mA
MAX. POWER CONSUMPTION		20V / 10W
OPERATING TEMPERATURE	°C	-5... 50
DIMENSIONS	mm	192 x 217 x 37



Selectable high rejection SAW filters for optimal protection against Lte 4G and 5G interferences



In addition to the easy to use built-in LCD display, programming applications are available for PC Windows and Android devices



Self programming Auto-tuning function to scan and detect DVB-T/T2 signals from the VHF/UHF inputs and allocate a single digital filter for each transponder

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 your local authority's recycling processes

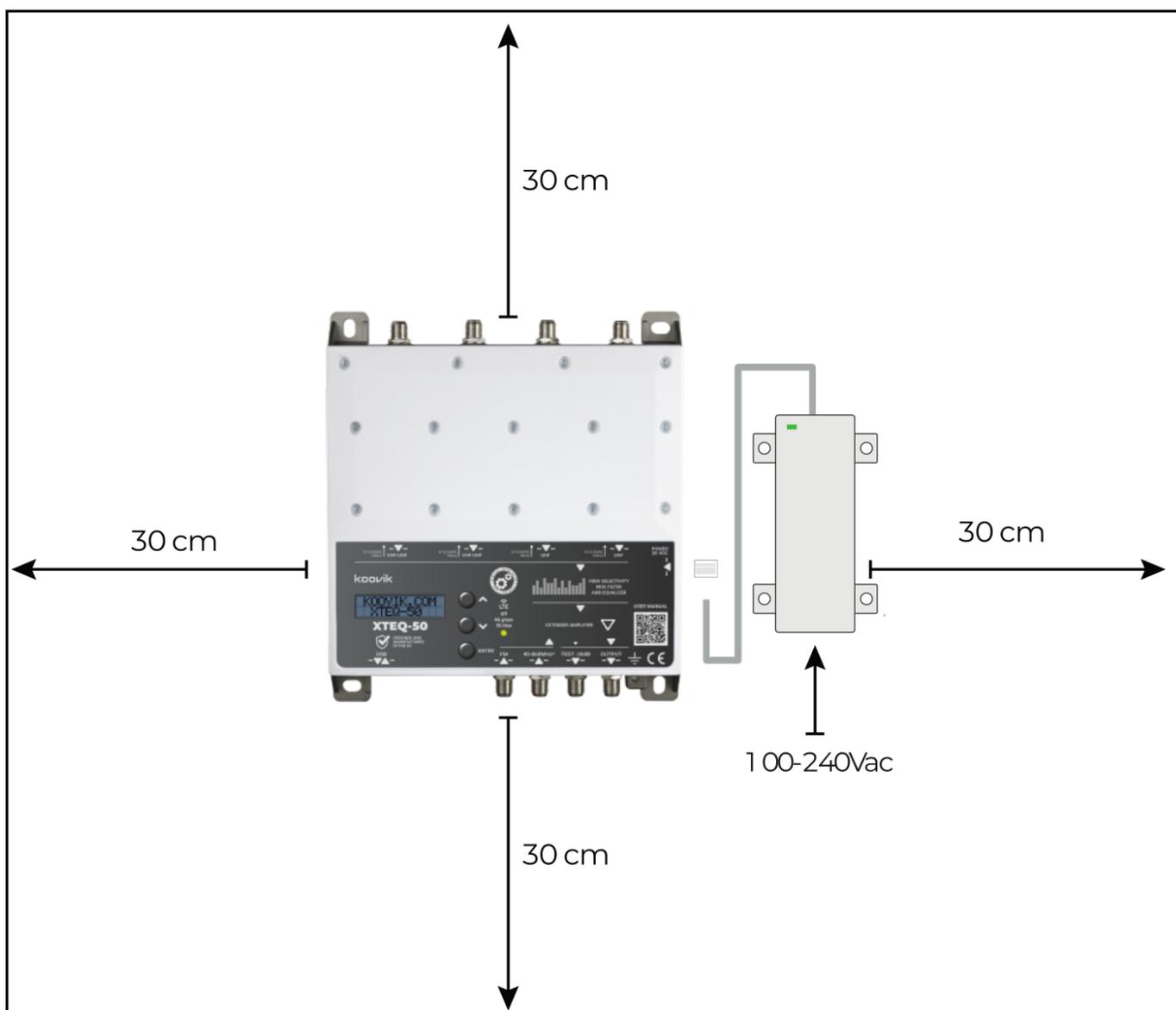


Safety instructions

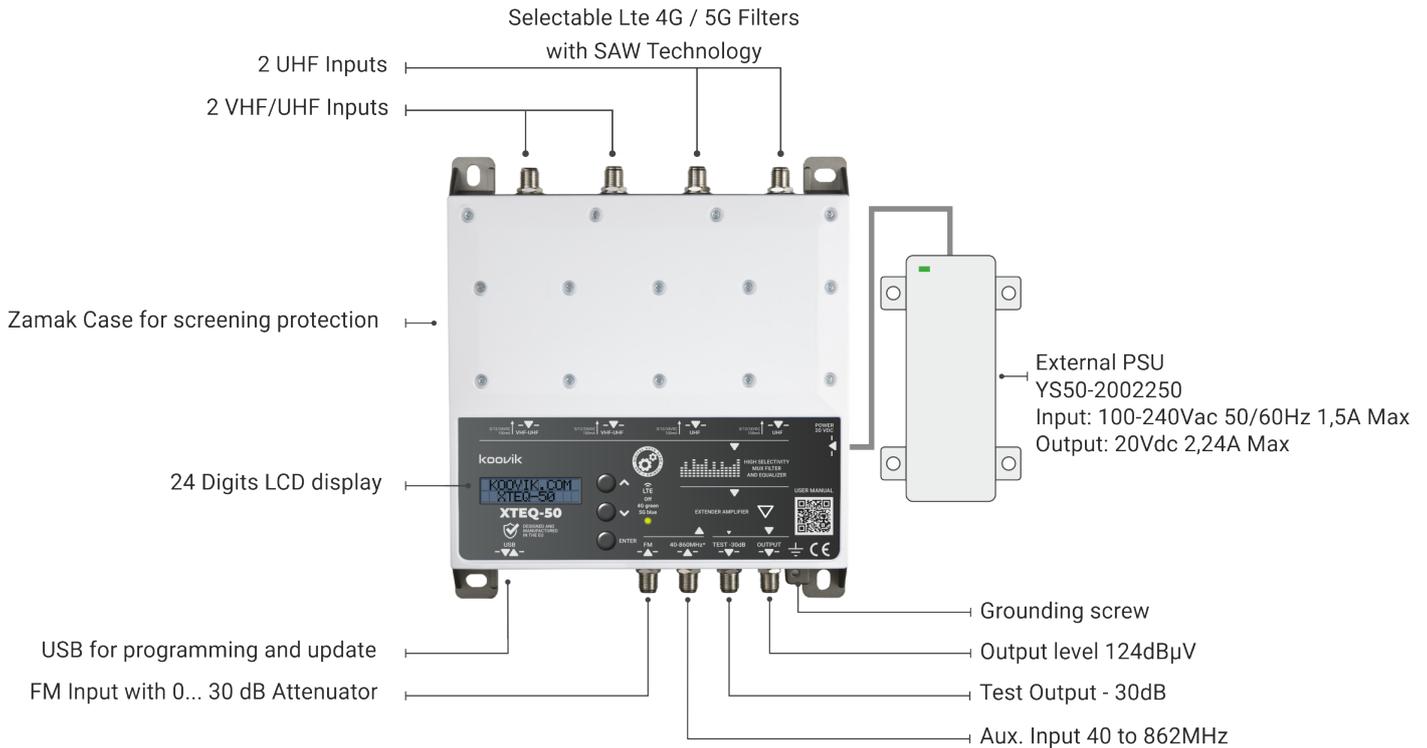
1. Do not expose the amplifier to extreme temperatures.
2. Place the amplifier in a dry and well-aired location.
3. Install the unit on a vertical wall, or in a waterproof cabinet to a minimum IP55 rating, and fix it safely using the provided fixing plugs
4. Conect the power adapter cord to a detachable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

IMPORTANT!

Use only the power pack YS50-2002250 supplied with the amplifier.
The use of non original power packs can cause malfunctioning and invalidate the warranty.



Connections Schematic



Installation and start-up

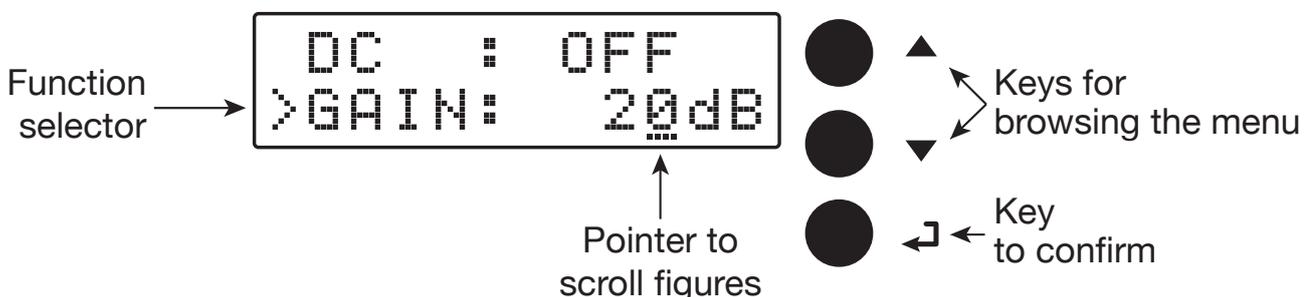
- Connect an earth wire to grounding clamp
- Connect the TV aerial(s) to the amplifier's inputs.
- Terminate the unused inputs with 75Ω terminators.
- Connect the power supplier unit and then connect the amplifier to the mains plug

Programming via display

Firmware rel. 1.5
Hardware rel. 1.2

1. Press **ENTER** to activate the display. A dot on the bottom right corner will appear under normal operation.
2. Press **ENTER** for three seconds to enter the programming menu

Note: the display backlight will go out after 3 minutes if inactive, but the menu will remain open on the last selected function. Press any key to resume to continue.



Automatic channel scan and memorization

AUTO-TUNING

```
TUNING
AUTO      MAN
```

To start the automatic programming, AUTO-TUNING, place the pointer --- below AUTO. Press **ENTER** to proceed. The amplifier XTEQ-50p will start scanning the MUX on input [1] for UHF band and on input [2] for III° band.

To stop the AUTO-TUNING procedure press **ENTER** for 5 seconds.

```
TUNING
>      >      >
```

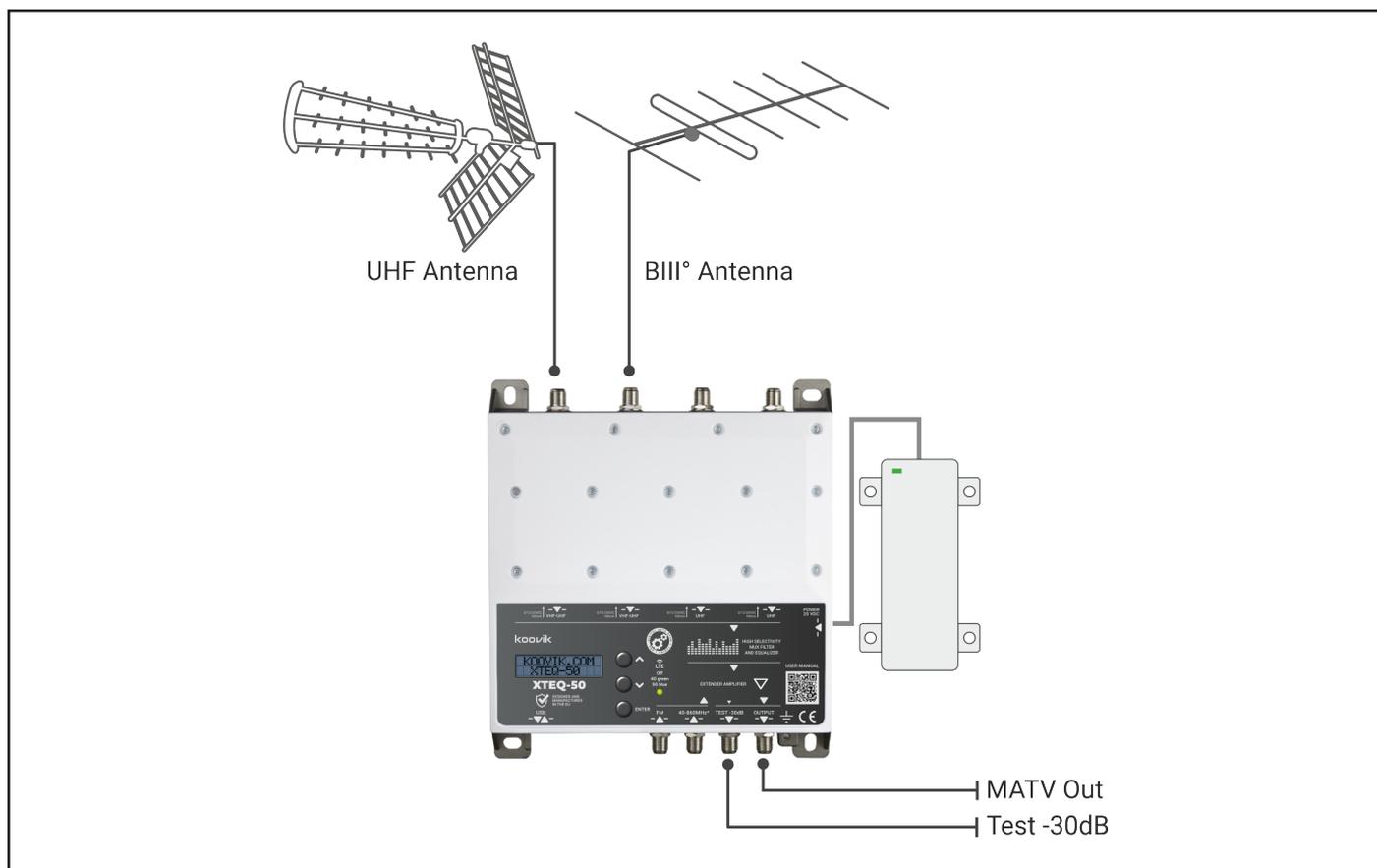
Wait for the AUTO-TUNING procedure to end, which depends on the number of MUX received from the antenna.

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

When the AUTO-TUNING procedure is completed the display will show the total output level depending on the number of MUX automatically saved. Press **ENTER** to confirm and complete the procedure. To change the output level press the **UP** or **DOWN** keys and then press **ENTER** to confirm.



Setting higher output levels than the one obtained through the AUTO-TUNING could reduce the quality of the received signals.



Manual programming

```
TUNING
AUTO      MAN
```

Position the pointer --- on MAN to start the manual programming through the **UP** key and press **ENTER** to continue.

FM INPUT

```
INPUT FM
```

Press **ENTER** to enter to set the **FM** input parameters.

FM REMOTE POWER SUPPLY

```
INPUT FM
>DC : OFF
```

Press **ENTER** to start the pointer --- to scroll the options then press **UP** and **DOWN** keys to select **ON** or **OFF** to enable the remote power supply on the **FM** input. Press **ENTER** to confirm.

The remote power supply is set on 12Volt. It can be changed to 24Volt in the ADVANCED menu.

FM GAIN

```
DC : ON
>GAIN: 30dB
```

Position the function selector > on Gain and press **ENTER** to start the pointer --- to scroll options, select the desired output level through the keys **UP** and **DOWN** and press **ENTER** to confirm.

Adjustable from 15 to 45dB

AUX INPUT

```
INPUT AUX
```

Press **ENTER** to access the **AUX** input parameters menu.

AUX GAIN

```
INPUT AUX
>GAIN: 42dB
```

Position the function selector > on Gain and press **ENTER** to start the pointer --- to scroll options, select the desired output level through the keys **UP** and **DOWN** and press **ENTER** to confirm.

Adjustable from 22 to 42dB

INPUT [1] VHF-UHF

```
INPUT V/U 1
```

To set the INPUT V/U 1 parameters press **ENTER** to start the menu.

INPUT V/U 1 Processable channels

BIII° = E5... E13 - DAB

UHF 21... 48 with filter Lte 5G selected

UHF 21... 60 with filter Lte 4G selected

UHF 21... 69 with filter Lte OFF

The selection of the Lte filter is available in the ADVANCED menu.



In any position of the menus INPUT V/U 1; INPUT V/U 2; INPUT U 3; INPUT U 4 press the keys UP and DOWN at the same time to go back to main menu.

REMOTE POWER SUPPLY

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

Press **ENTER** to start the pointer --- to scroll options then press **UP** and **DOWN** to select ON or OFF to enable the remote power supply on the FM input. Press **ENTER** to confirm.

The remote power supply is set on 12Volt. It can be changed to 24Volt in the ADVANCED menu.

INPUT GAIN

```
INPUT U/U 1
>GAIN: 20dB
```

Adjustable from 0 to 20dB

Position the function selector > on Gain and press **ENTER** to start the pointer --- to scroll options, select the desired output level through the keys **UP** and **DOWN** and press **ENTER** to confirm.

SINGLE MUX FILTERING

```
GAIN: 20dB
>ADD 1 CH
```

```
GAIN: 20dB
>21->21 L 65
```

```
GAIN: 20dB
>21->21 L 65
```

Press **UP** and **DOWN** to position the function selector > on ADD 1 CH and press **ENTER**.

To activate only the filtering function on a single MUX set the desired channel through the **UP** and **DOWN** keys then press **ENTER** twice to confirm.

The L figure shows the input level of the selected MUX in dBµV.

MUX CONVERSION

```
GAIN: 20dB
>36->36 L 65
```

```
GAIN: 20dB
>36->41 L 65
```

To activate the filtering and conversion function on a single MUX set the desired channel through the **UP** and **DOWN** keys then press **ENTER** to confirm the input channel Adjust the conversion channel through the **UP** and **DOWN** keys then press **ENTER** to confirm.



Regardless of the selected Lte 4G or 5G filter, output conversions up to the UHF channel 69 are permitted.

TWO MUX FILTERING

```
ADD 1 CH
>ADD 2 CH
```

```
GAIN: 20dB
>21<>22 L 65
```

To add a filter for two channels with two adjacent MUX press **DOWN** and select ADD 2 CH. Press **ENTER** to confirm. Select the first channel with the **UP** and **DOWN** keys. The second channel will automatically appear in second position. Press **ENTER** to confirm.

DELETE FILTER

```
CH DELETED
```

Position the function selector > on MUX filtering or MUX conversion using **UP** and **DOWN** then press **ENTER** for five seconds.

INPUT [2] VHF-UHF

INPUT V/U 2

To set the INPUT V/U 2 parameters, press **ENTER** to enter the menu.
The procedures described for input 1 apply to all settings.

INPUT V/U 2 Processable channels

BIII° = E5... E13 - DAB

UHF 21... 48 with filter Lte 5G selected

UHF 21... 60 with filter Lte 4G selected

UHF 21... 69 with filter Lte OFF

INPUT [3] UHF

INPUT U 3

To set the INPUT 3 U parameters press **ENTER** to enter the menu.
The procedures described for input 1 apply to all settings.

INPUT V/U 3 Processable channels

UHF 21... 48 with filter Lte 5G selected

UHF 21... 60 with filter Lte 4G selected

UHF 21... 69 with filter Lte OFF

INPUT [4] UHF

INPUT U 4

To set the INPUT 4 U parameters press **ENTER** to enter the menu.
The procedures described for input 1 apply to all settings.

INPUT V/U 4 Processable channels

UHF 21... 60 with filter Lte 4G selected

UHF 21... 48 with filter Lte 5G selected

UHF 21... 69 with filter Lte OFF

OUTPUT LEVEL SELECTION

OUTPUT

Adjustable from 93 to 113dB μ V

Press **DOWN** to select the menu OUTPUT and press **ENTER** to confirm and check the selected output level.

OUTPUT
>LEV: 105dB μ V

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

UHF OUTPUT SLOPE

LEV: 110dB μ V
>SLP: 5dB

Adjustable from 0 to 5dB

To adjust the UHF SLOPE select SLP and press **ENTER**, press **UP and DOWN** to select the required value and press **ENTER** to confirm.

VHF OUTPUT GAIN

SLP: 5dB
>VHF: -10dB

Adjustable from 0 to -10dB

To adjust the VHF gain select VHF and press **ENTER**, press **UP and DOWN** to select the required value and press **ENTER** to confirm.

ADVANCED SETTINGS

```
ADVANCED
```



In any position of the **ADVANCE** menu press the keys **UP** and **DOWN** at the same time to go back to main menu.

Lte Filter 4G or 5G

```
ADVANCED  
>LTE: 4G
```

```
ADVANCED  
>LTE: 4G
```

```
ADVANCED  
>LTE: 5G
```

```
ADVANCED  
>LTE: OFF
```

Press **ENTER** and the **UP** and **DOWN** keys to select the SAW Filter Lte 4G or 5G. Press again **ENTER** to confirm.

LTE FILTER	UHF CH	FREQ. RANGE	LED STATUS
5G	21... 48	470... 694 MHz	Blue
4G	21... 60	470... 790 MHz	Green
OFF	21... 69	470... 862 MHz	Green Blinking

REMOTE POWER SUPPLY

```
LTE: 4G  
>DC: 12V
```

```
LTE: 4G  
>DC: 24V
```

Select the DC voltage setting function and press **ENTER**, press the **UP** and **DOWN** keys to select the 12VDC or 24VDC voltage, and then press **ENTER** to confirm.

PROTECTION PASSCODE

```
DC : 12V  
>PSW: 000
```

```
DC : 12V  
>PSW: 000
```

Select PSW and press **ENTER**, press the **UP** and **DOWN** keys to select the first figure from the right. Press **ENTER** to confirm. Repeat for the other figures and press **ENTER** to confirm.

AUTO-TUNING INPUTS THRESHOLD

```
PSW: 000  
>THR: 55dBuV
```

Adj. from 45 to 90dB μ V

```
PSW: 000  
>THR: 59dBuV
```

Select THR, the AUTO-TUNING minimum threshold function and press **ENTER**. Use the **UP** and **DOWN** keys to select the required value and press **ENTER** to confirm.

FAST

```
FAST: OFF
>RESET
```

Select OFF for a slower A.C.G. response
Select ON for a faster A.C.G response.

RESET XTEQ-50p

```
THR: 55dBuV
>RESET
```

Select the RESET function and and press **ENTER** to enter a second safety menu RESET?

```
RESET?
YES     NO
```

If you want to cancel all setting and restore the original settings, confirm YES by pressing **ENTER**. The display will show RESET OK for a few second to confirm the operation.

```
RESET OK
```

If you wish to cancel the operation select NO by pressing **DOWN** then press **ENTER** to confirm.

MONITOR

```
RESET
>MONIT: OFF
```

Function is still under developing please do not use.

S/N XTEQ-50p

```
RESET
>SNBR: 00001
```

Select SNBR. The number displayed is the unique device serial number.

EXIT

```
EXIT
```

To close the procedure select EXIT and and press **ENTER**. Select YES by pressing the UP and DOWN keys and press **ENTER** to confirm.

```
EXIT
YES     NO
```

If you wish to cancel the operation, select NO by pressing **DOWN** then press **ENTER** to confirm and carry on your setting procedure.

PC Windows Programming GUI

1. Download from our website koovik.com download area the latest GUI release.
2. Install the GUI selecting the file Setup.exe and follow the guided procedure step by step until the installation is completed.

Software minimum requirements

Windows 7 or more recent operating system, Microsoft Framework .NET 3.5* or higher and langpack (free download from Microsoft website).

The program needs the Framework.NET 3.5 it's usually in the PC if there is a recent version of Windows 7. If not the Framework.NET can be freely downloaded from the Microsoft website.

Hardware requirements

PC Windows compatible with USB interface.

USB A-B cable.

SmartPhone/Tablet Android Programming GUI

1. Check if your Android device support the USB OTG mode.

The free application like USB OTG Checker can help.

2. To connect the Android Smartphone/Tablet you need a USB OTG cable or adapter.
3. Download from Google play and install the application koovik-XTEQ
4. Switch on the XTEQ-50p.
5. Connect the XTEQ-50p to your Android device with the USB-OTG cable
6. The koovik-XTEQ will start automatically and you will be ready to set up the XTEQ-50p.

Label with serial and tracking data

AA1000015019-X1020L

AA	100001	50	19	-X	10	20	L
└─┬─┘	└─┬─┬─┬─┬─┬─┘	└─┬─┘	└─┬─┘		└─┬─┘	└─┬─┘	
Model	Serial #	Manuf. Week	Manuf. Year		HW Rel.	FW Rel.	

