



## **VideoLink700-Light/SDI**

### **OPERATIONS MANUAL**

#### **RESTRICTIONS ON USE, DUPLICATION OR DISCLOSURE OF PROPRIETARY INFORMATION**

This document contains information proprietary to Radiofar & Co, Ltd., to its affiliates or to a third party to which Radiofar & Co, Ltd., may have a legal obligation to protect such information from unauthorized disclosure, use or duplication. Any disclosure, use or duplication of this document or any of the information herein for other than the specific purpose for which it was disclosed by Radiofar & Co, Ltd., is expressly prohibited, except as Radiofar & Co, Ltd., may otherwise agree in writing. Recipient by accepting this document agrees to the above stated conditional use of this document and this information disclosed herein.

Copyright © 2011, Radiofar & Co, Ltd.

## **Liability**

The statements, specifications and instructions in this publication are believed to be correct to the best knowledge of Radiofar & Co (Radiofar) and its employees at the time of printing this manual.

Radiofar will reserve the right to make changes to the content in this publication that reflects changes in equipment specifications and design. No liability is assumed for statements, results, or lack thereof from the use of information in this publication and for any direct or consequential damages, personal loss or injury and that all statements made herein are strictly to be used or relied on at the user's risk.

This document has been prepared for professional and properly trained personnel and the customer assumes all responsibility when using this document. Radiofar welcomes customer comments as part of the process of continual development and improvement of the documentation in the best way possible from the user's viewpoint. Please submit your comments to your Radiofar Customer Service at the following address:

### **Radiofar & Co, Ltd**

20 Valea Trandafirilor Street, of. 178  
Chisinau, Republic of Moldova, MD2001  
Tel: (373) 22 843140  
Fax: (373) 22 620522  
Email: [info@radio-far.com](mailto:info@radio-far.com)  
Website: [www.radio-far.com](http://www.radio-far.com)

## **Warranty and Service Information**

Radiofar standard warranty is one year from date of delivery, provided that the warranty labels have not been broken. Opening the Transmitter without the expressed, written consent of Radiofar will automatically void the warranty.

Radiofar liability for a warranty failure applies only to the equipment provided by Radiofar and excludes all other remedies, including, without limitation, incidental consequential damages. Radiofar is not responsible for any lost data, revenue, or any other consequential damages associated with a warranty or nonwarranty failure.

In the event of a defect in/or failure of the Radiofar product, the customer shall contact Radiofar regarding the warranty claim. Radiofar warrants to rework or repair the product at the Radiofar facility in Chisinau, Republic of Moldova once it has been properly returned by the customer.

To process a warranty claim or to obtain technical support, please contact Radiofar Customer Service:

**E-mail: [info@radio-far.com](mailto:info@radio-far.com).**

## Product Safety

For your protection, please read and observe all safety instructions carefully. Save these instructions for future reference.

**1. Read Instructions.** All safety and operating instructions should be read before the product is operated.

**2. Follow Instructions.** All operating and user instructions should be followed.

**3. Retain Instructions.** The safety and operating instructions should be retained for future use.

**4. Heed Warnings.** All warnings on the product and in the operating instructions should be adhered to.

**5. Ventilation.** The product should be situated so that its location or position does not interfere with its proper ventilation, to ensure reliable operation of the product and to protect it from overheating. The product should not be placed near or over radiators, stoves or other appliances that produce heat.

**6. Power Sources.** The product should be operated only from the type of power source indicated on the unit or in this document.

**7. Power Cord Protection.** Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles and the point where they exit from the product.

**8. Cleaning.** Do not use liquid cleaners or aerosol cleaners. Use damp cloth for cleaning.

**9. Object Entry.** Never push objects of any kind through openings of this product; such actions could result in fire or electric shock.

**10. Servicing.** The user should not attempt to service the product beyond those means described in the operating instructions. Refer all servicing to qualified service personnel.

**11. Damage Requiring Service.** Disconnect the product from its power source and refer to service personnel under the following conditions:

a. When the power cable is damaged.

b. If liquid has been spilled or objects have fallen into the product.

c. If the product does not operate normally, adjust only those controls that are covered by this document. Improper adjustment of any other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.

d. When the product exhibits a distinct change in performance. Such a significant change indicates need of service.

**12. Replacement Parts.** When replacement parts are required, ensure that parts are specified by Radiofar.

Unauthorized substitutions could result in improper operation or other hazards and will invalidate the warranty.

## Electrostatic Sensitive Devices

This product contains ESD (Electrostatic Discharge) sensitive devices.

**Attention!** When repairing, proper ESD equipment should be used to prevent damage to the product.



Use an ESD wrist strap when handling ESD-sensitive devices.

## Safety Notices

**WARNING!** – Denotes potential hazard, if not correctly performed or adhered to, could result in injury or loss of life.

**CAUTION!** – Denotes potential hazard, if not correctly performed or adhered to, could result in damage to the equipment.

**NOTES** – Provides supplementary information for the user.

## VideoLink - Wireless Camera COFDM System

The VideoLink is a compact and portable module that performs wireless digital transmission of audio and video signals. It can be installed in a specific backpack or plugged directly on to the back of most of professional video cameras, depending on the desired operational conditions.

Mechanical and cable adapters are available on request for most of professional video camera models.

The VideoLink includes MPEG2 encoding, COFDM digital modulation and RF amplification in a very compact package.

### APPLICATIONS

Wireless cameras for News or Sports

Mobile cameras (Helicopters, Cars, Motorcycles, etc.)

Wireless studios for TV production

### KEY FEATURES

High and constant quality of sound and picture resulting from digital transmission and MPEG2 audio-video compression

Very robust transmission for fixed, portable and mobile operation in a terrestrial (multipath) environment, due to the use of COFDM digital modulation.

Pre-defined or user selected operating modes designed to achieve the best trade-off between transmission robustness and video quality

Compact size (204 x 104 x 45 mm) and low weight (1.2 kg)

## 1. TECHNICAL CHARACTERISTICS

### RF output frequency

762-818MHz 8 preset channels with 8MHz step

### Transmitter Output Power

50mW into 50 Om

### Encoder performance

4:2:0 MPEG2 compliant to ISO IEC13818

### Bit rate

6 or 10 Mbit/s

### Modulation Method

Coded Orthogonal Frequency Division Multiplex (COFDM)

QPSK

FEC  $1/2$ ,  $5/6$ ,

Guard interval  $1/16$ ,  $1/32$

2000 carriers (1705 active carriers)

8MHz bandwidth

### Video Inputs

SDI SD Embedded Video Input

### Panel Connectors

RF Out N type female (on the top panel)

SDI Video Input - 75 Om BNC connector

Power DC 4 pin Cannon connector. (GND – 1, +12VDC - 4)

### Physical

185 x 96 x 36mm without antenna fitted

0,7kg weight

Black stove enamelled finish

Housing - splash proof machined aluminium casing

**Mounting**

The back face of the transmitter body have mounting hole on which can be mounted on the tripod or shoulder rest.

**Environmental**

Operational –10 C to +55 C

**Power**

10.5V DC to 18V DC supplied from standard camera battery.

**Power Consumption**

<9 Watts

## 2. System Operation

### 2.1. Installation

The omnidirectional transmitter antenna must be connected to RF Output of VideoLink.  
The SDI cable must be connected between the camera and the VideoLink via the Panel connectors.

Battery or DC source connected to the transmitter power.

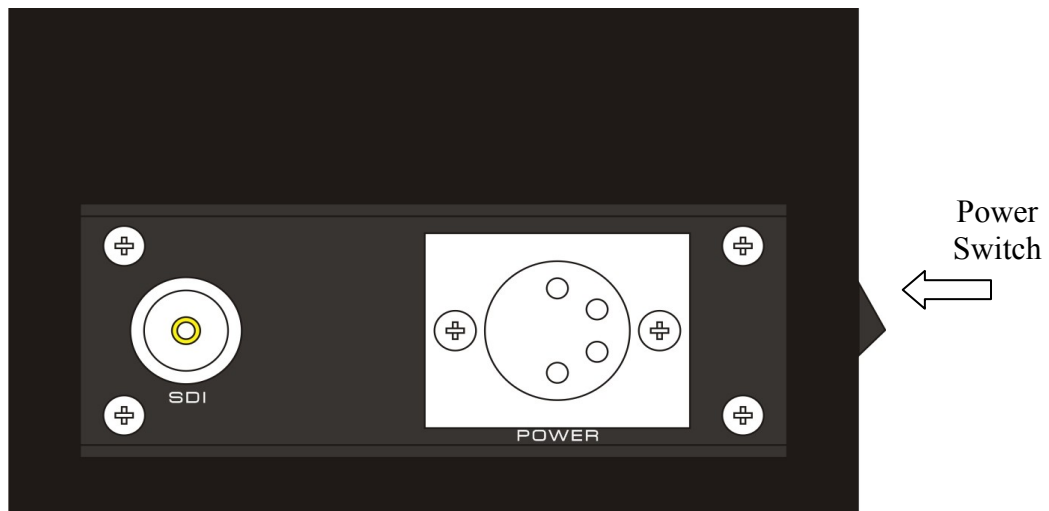
Pinout connector POWER.

Pin 1 - GND;

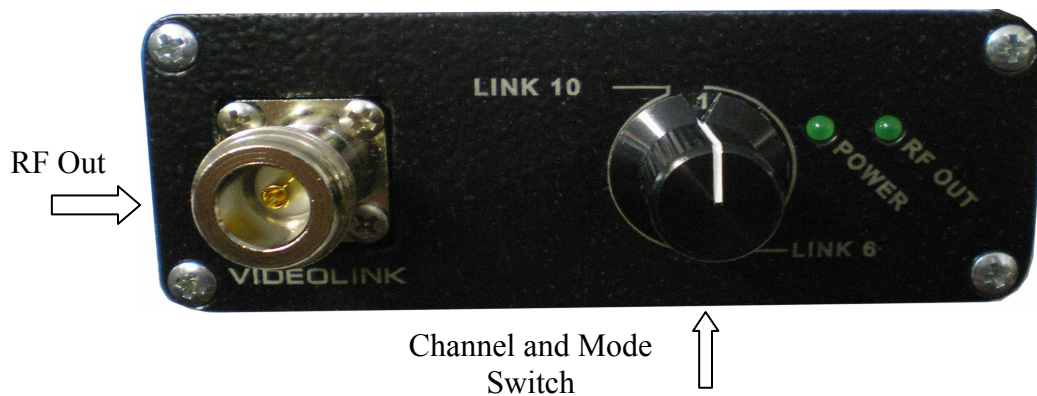
Pin4 - "+" 12 VDC.

Press the button on the side of the transmitter. The transmitter switch On and illuminate the LED **POWER** on the top panel . After 10 seconds the LED **RF OUT** should light up.  
The transmitter is ready for use.

The transmitter can be mounted on a tripod or shoulder rest using a screw hole on the underside of the transmitter. Or the transmitter with battery pack can be located in the operator's backpack



**Fig1. Panel Connectors**



**Fig2. Top panel**

## 2.2. Operator Controls

The VideoLink is configured using only one Switch from top panel. Switch allows to choose transmitter mode LINK6 or LINK10 and frequency channels.

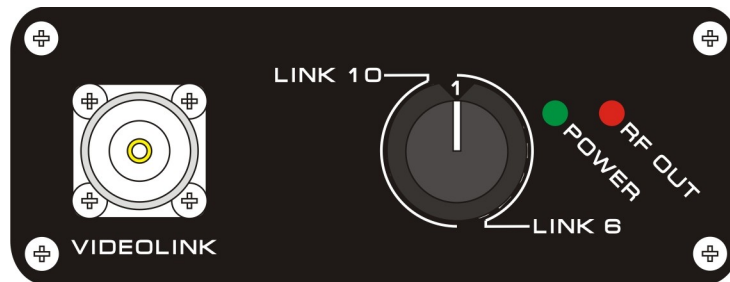
LINK6 mode is the bit rate 6 Mbps.  
LINK10 mode is the bit rate 10 Mbps.

Each of the modes LINK6 and LINK10 corresponds to 8 frequency channels from the frequency range 762 to 818 MHz with step 8 MHz.

Channel number corresponds to a particular frequency, which can not be changed. The table shows the correspondence between channel number and output frequency.

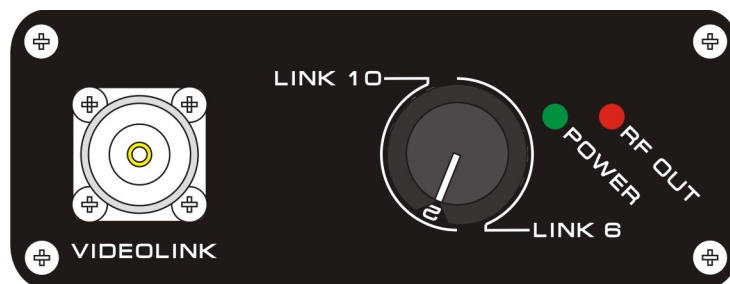
Channel number	1	2	3	4	5	6	7	8
Frequency, MHz	762	770	778	786	794	802	810	818

For change the stream and the frequency channel it is necessary to turn the switch on number of the necessary channel in sector corresponding to the necessary stream LINK6 or LINK10



Mode LINK6 - 6 Mbit/s  
Channel 1 - 762MHz

Fig.3 Mode Link6



Mode LINK10 - 10 Mbit/s  
Channel 2 - 770MHz

Fig.4 Mode Link10

### 2.3. Features of system

System is the maximum simplicity of use, compactness, application of standard receivers.

Feature of system is application COFDM of modulation of standard DVB-T which is the most preferable to the mobile and portable radio lines intended for transfer of a television signal. It allows to work in very difficult conditions of presence of set of the rereflected signals without quality loss that is especially important at work in the closed premises, studios, in the closed spaces etc. Analogue systems cannot work in such conditions without signal loss.

The system allows to work without presence of direct visibility on the receiver. But it is necessary to remember, that miracles do not happen, and the system in each concrete case can work, and can and not work in absence of direct visibility. It depends on each concrete case. Presence on a radio line of green plantings (trees, bushes) considerably reduces range of action. And presence of objects, which well reflect radio-waves (ferro-concrete buildings, metal objects, etc.), can provide hit of the reflected signals on reception antennas without presence of direct visibility and reception of a signal by the receiver will be provided.

Therefore in each concrete case it is necessary to check stability of communication for all possible positions of the transmitter concerning the receiver.

Operating mode LINK6 as having the greatest noise stability, allows to work in especially difficult conditions. It is intended for carrying out of news reportings where the picture is is static.

Operating mode LINK10 is intended for transfer of dynamical pictures. But this mode is less noiseproof, than LINK6. In this mode range of work of system can will decrease approximately in 2 times.

### 3. RECEIVER

#### 3.1. Features of receiver

With professional mobile DVB-T LSI, the unit can make a good receiving at 250 Km/H maximum speed.

Easy for installation, apply for all kinds of cars and bus.

Automatically compatible with all DVB-T standards.

Considering the requirements of vibration, temperature and power shock durability for designing.

Electronic program guide (EPG) function to preview program list.

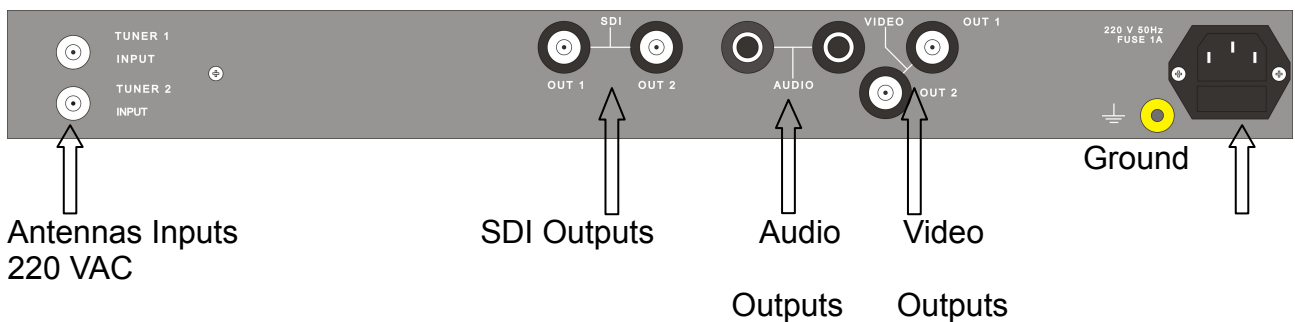
Supply aspect ratio 4:3, Full, 16:9, 16:9 Wide, can easily switching.

#### 3.2. Installation

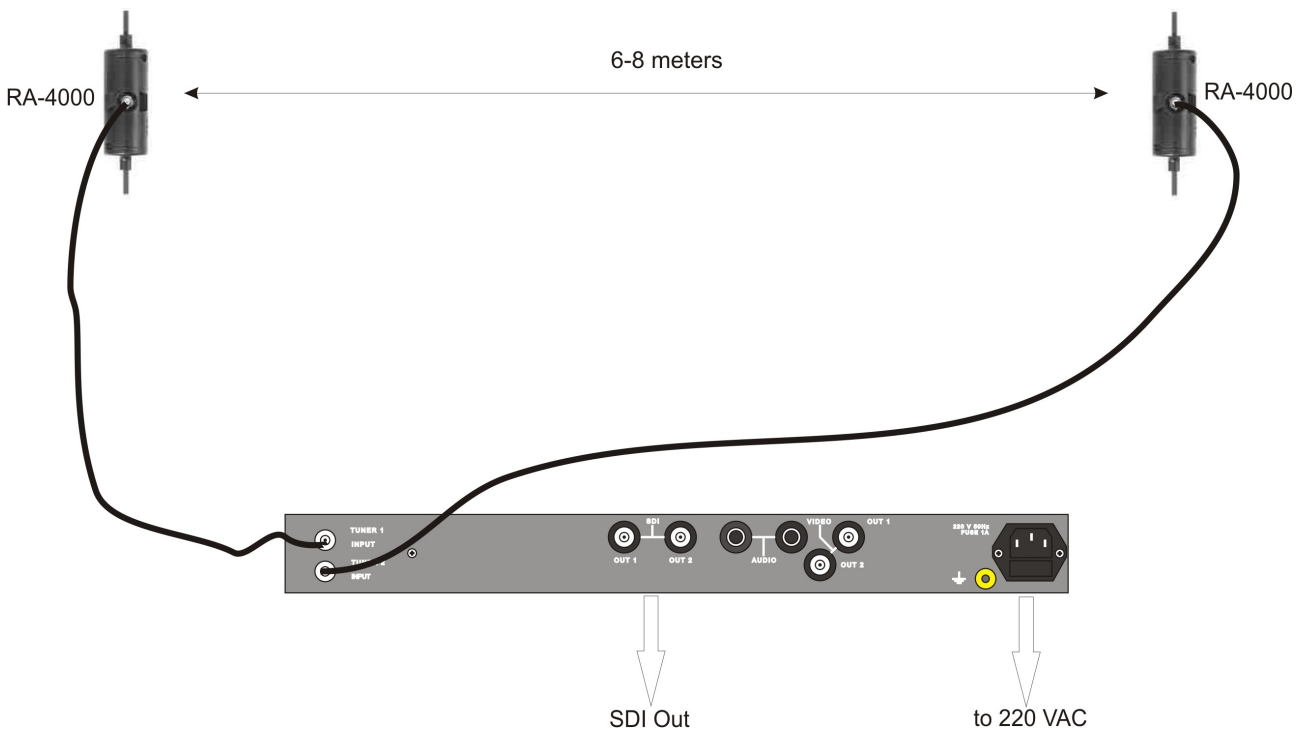
##### Front panel



##### Rear panel



Installation the receiving system is performed in accordance with the Figure below.



The distance between antennas should be not less than 6-8 metres for maintenance of condition of the carried reception.

To connect antennas to the receiver using coaxial cables.

Attention! Connecting and disconnecting cables between the receiver and antennas to produce Power Switch is off . The voltage of 12 volts is supplied through a coaxial cable to the antennas.

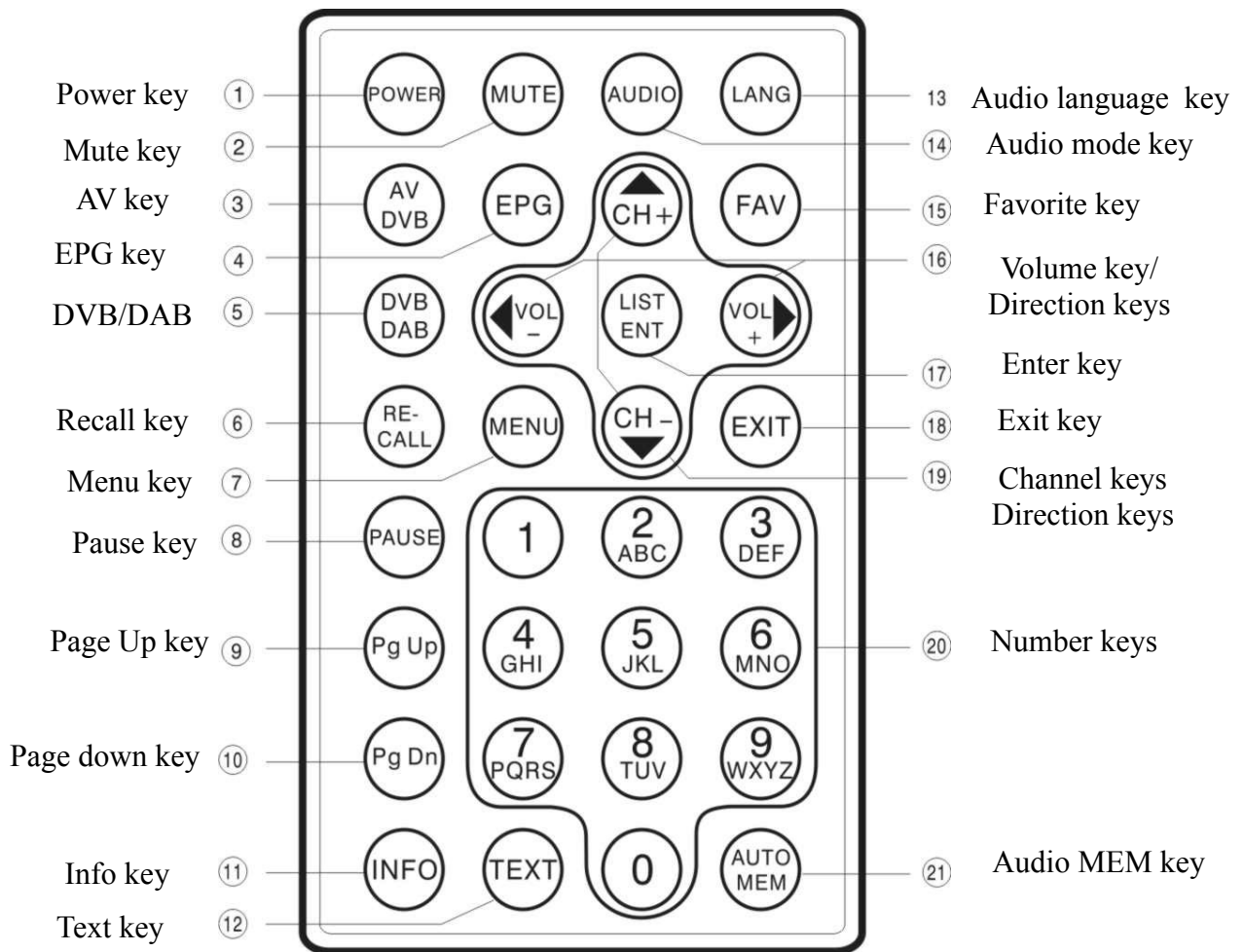
The receiver is factory-set according to the table.

Channel number	1	2	3	4	5	6	7	8
Frequency, MHz	762	770	778	786	794	802	810	818
Mode	Link6	Link10	Link6	Link10	Link6	Link10	Link6	Link10

For adjustment of the receiver for frequency of the transmitter it is necessary to enter the frequency corresponding to number of the channel of the transmitter and to give search. The receiver should will be adjusted on the transmitter.

Attention! Feature of these models of receivers is that the frequency channel can be programmed for only one mode. For example, for channel number 1 receiver tuned to the frequency of 762 MHz and the mode of the transmitter Link-6. When you change the mode of the transmitter on Link-10 receiver will not receive a signal from the transmitter. In order that the receiver received the signal from the new regime Link10 and at a frequency of 762 MHz need to re-configure the receiver to the frequency.

## Remote Control Keys Description



## Setup

### Recall menu

Confirm well writing, press POWER key to turn on the receiver. Press MENU key, the menu will show on the screen. Use direction keys to select the **System Setting**.

### Setup

Highlight the item **setup**, and press ENTER key to enter the system setting. Use ▲▼ key to move the highlight, and use ◀▶ key to select item.



### OSD Language

Highlight the item **OSD Language**, press ◀▶ to select **OSD Language**



### Audio Language

Highlight the item **Audio Language**, press ◀▶ to select different surrounding language. (This function is available only while the audio signal has multiple languages).



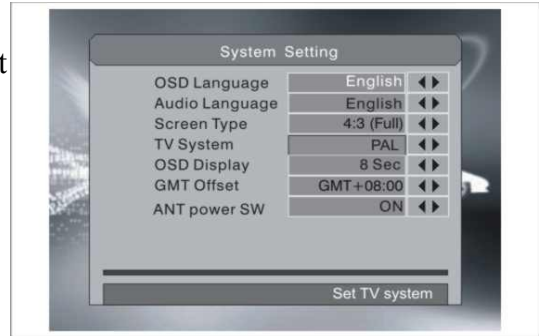
### Screen Type

Highlight the item **Screen Type**, press ◀▶ to select displaying mode from 16:9, 16:9 WIDE, 4:3, 4:3 FULL.



### TV System

Highlight the item **TV System**, then press ◀▶ to select the color system.



### OSD Displaying

Highlight the item **OSD Displaying**, then press ◀▶ to select the time period which the screen information will stay on the screen.



### GMT Offset

Highlight the item **GMT Offset**, then press ◀▶ to select your present time zone. The system time will update automatically after selecting.



### ANT power SW

Highlight the item **Antenna Power**, then press ◀▶ to turn ON or turn OFF antenna power.



### Note:

Turn on the antenna power 12 V, 80 mA.

## Auto Search

Highlight the item **Auto-Search**, then press ENTER key to enter the auto-search dialog box. Use ▲▼ key to move the highlight, and use ◀▶ key to select region and wave band. After selected the proper item, highlight the SEEK key, and press ENTER key, the TV and audio program will seek automatically. A seeking process box will appear on the screen, and after seeking completed, the sought programs will be shown on the screen. Press ENTER key to store, and press EXIT key to exit, the receiver will store the sought programs.



## Manual Search

Highlight the item **Manual Search**, then press ENTER key to enter the manual search dialog box. Use ▲▼ key to move the highlight, and use ◀▶ key to select region, wave band, and channel. You can select one DVB-T channel, after confirmed the relative item, move the cursor to highlight the SEEK key, and press ENTER key, the seeking process window will appear. After seeking finished, the sought programs will be shown on the screen, press ENTER key to store.



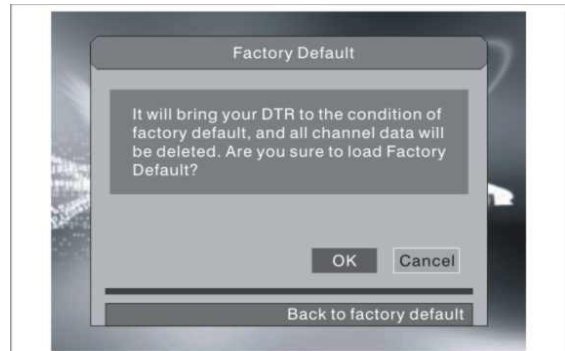
## SETUP & CHANNEL MANAGER

### Factory Default

Highlight the item **Factory Default**, and press ENTER key, a warning dialog box will appear on the screen, press ▲▼ key to move cursor. After you press OK key, this unit will resume to the default setting.

#### Note:

After pressed OK, all setting and the stored programs will be cleared, need to resetting and re-seeking.



### Channel Manager

Channel manager is used to manager and edit the program received, just as delete/move/set favorite a program.



### TV Channel

#### Edit favorite programs

Use direction keys to highlight the item **Favorite** under operation menu, press ENTER to select Favorite operation, then use direction keys to TV channel table to select a program, press ENTER key to set the program as favorite program. **F** will show on the program, press ENTER key again to cancel the selection, and **F** will disappear.



#### Delete

Use directional keys to highlight the item **Delete** under operation menu. Press ENTER to select Favorite operation. Then use direction keys to TV channel table to select a program you want to delete, press ENTER key to delete the program.

#### Note:

Re-seeking and storing will resume the deleted programs automatically.



## Channels manager & EPG

Use direction keys to highlight the item **Move** under operation menu. Press ENTER to select move operation. The use direction keys to TV channel table to select a program you want to move, press ENTER keys to select the program to move, use direction keys to select a new position, press ENTER to confirm.



## Radio Channel

All settings and operations are the same as TV.



## EPG

Highlight the item **EPG**, and press ENTER key to enter the sub-menu: **Advanced EPG**, **Simple EPG**.



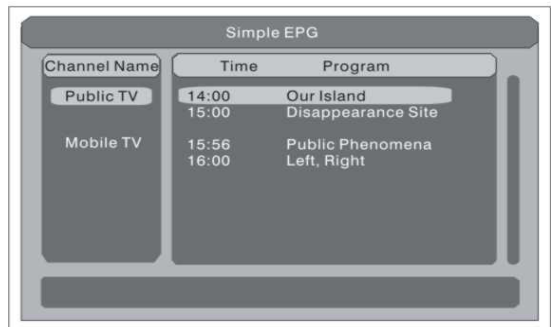
## Advanced EPG

Press ▲ ▼ key to review the TV time table within one week. When you view the program which you favor, you can highlight the keep and press ENTER to store it.



## Simple EPG

Press ▲▼ key to view the detailed program contents information of current TV channels.



## Upgrade



## Troubleshooting of the receiver

Fault	Possible Cause	Possible Solution
No Power	Power line not connected well	Check the plug
No sound or image	On standby status	Press the power button to turn on the unit
Poor image or image freeze	Signal too strong	Connect a signal fader to the antenna
	Signal too weak	Check antenna or move antenna
No TV image	Image output not connected, TV not on AV status	Connect AV line, set TV on AV input status
	All the above conditions are normal	Check whether have channel stored, or to rescanning
Remote control does not work	Out of Battery	Replace battery
	Remote control not toward the receiving sensor correctly	Check whether have object blocked the receiving sensor

## Specifications of receiver

Frequency range	470-862 MHz
RF Input Level	-78~ +20 dBm
Antenna Input Impedance	75 Om
Bandwidth	6,7,8,MHz (optional)
Encoding	COFDM
DVB-T Coding Stream	Comply with MPEG2 ISO/IEC 13818
Video Outputs	2 Outputs 1V BNC 75 Om
SDI	2 Outputs
Audio	2 Outputs balance 0dB, 600 Om Big Jack
Resolution	720x480 (NTSC) 720x576 (PAL)
Power Supply	220 VAC