

AGENT:

BOYO®
VISION

INSTRUCTION MANUAL

BEFORE OPERATING THE UNIT, PLEASE READ THIS MANUAL
THOROUGHLY AND RETAIN IT FOR FUTURE REFERENCE



OWNER'S RECORD

THE MODEL AND SERIAL NUMBERS ARE LOCATED ON THE BOTTOM OF THE UNIT.
REFER TO THESE NUMBERS WHENEVER YOU CALL UPON YOUR DEALER
REGARDING THIS PRODUCT.

MODEL NO: VT-MHS

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FCC compliance

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Specification

ATSC M/H Receiver Specification:

RF Input Level: $-98\pm 3\text{dBm}$ (at SCCC, CR1/2 or CR1/4)

Receiving Frequency range: UHF 470MHz to 806MHz

VHF 54MHz to 88/174-216MHz

Nominal Input: 75 Ω (F Terminal)

Channel Selection: Electronic tuning, PLL synthesizer

Color System: NTSC

Video Output: 1Vpp 75ohmx3

Audio Output: Audio R/Audio L >1Vpp 10K ohm with E volume

Power Supply: DC 9V to 28V 130mA to 50mA , DC 12V 110mA

4pins Socket: ACC / Parking/+12V to 24V in/GND

Size (W xD xH): 5 1/16"x3"x1 1/8" inches

Weight: 0.22 LBS (approx Net)

Operation Temperature: 14°F to +122°F

Storage Temperature: -4°F to +149°F

Active Antenna Specification:

Active antenna with built-in RF amplifier for digital TV

Impedance: 75 ohm TYP

Receiver frequency range: VHF-H 170 to 230MHz

UHF 470 to 860MHz

Supply Voltage: DC+4.2V +5.5V (Max. 30mA)

Operation Temperature: -4°F to +140°F

Storage Temperature: -40°F to +185°F

V.S.W.R.: <2

Connector: F plug

Gain: 12dBm (at 5V in)

Antenna cable: L=5.0m

Accessories:

Remote Control x1

Power Supply Wire x1

IR Extension Box x1

Operation Manual x1

CAR Waterproof Active Antenna x1

RCA AV Wire x1

Safety Instruction

Please read the following instructions carefully

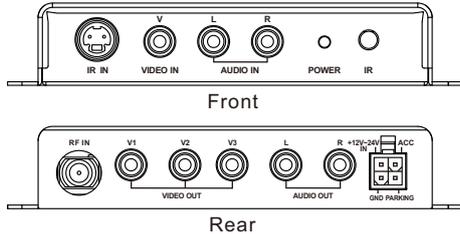
1. The power input is DC+12V~24V $\pm 10\%$.
2. Do not expose the receiver to rain , moisture, direct sunlight or do not place it near a heater.
3. Do not use liquid or aerosol cleaners. Use a light damp cloth for cleaning.
4. The hole on the bottom of receiver must be left uncovered to allow proper airflow to the unit.
5. Do not open or remove cover. Refer to all servicing to qualified Service personnel.
6. Warning: Do not operate this unit unless vehicle is parked in safe and legal area.

Main Features

- * Compliance with ATSC M/H ATSC A/153 VSB standard.
- * Speed over 120miles/h min (at SCCC, CR1/2 or CR1/4) .
- * Special design for car application with parking/ACC control.
- * Wide range of operation voltage from DC 9V-28V.
- * 3 sets of video output.
- * A/V input for game or other AV source.
- * Extended IR box for easy installation .
- * Parent lock function.
- * Supports ESG, closed caption.
- * Fast automatic scan.
- * Supports English, Spanish, French.
- * Waterproof Active antenna with built-in RF amplifier included.

Front and Rear Panel/Installation

ATSC / VT-MHS



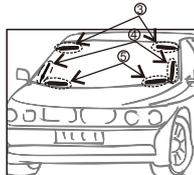
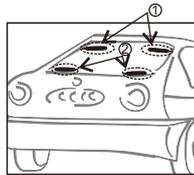
1. For car use: Connect the "+12~24V IN" wire to car battery "+" and connect ACC wire to car ACC switch.
2. For home use: Put "+12~24V IN" and ACC wire together and connect to 12-24V DC.
3. GND must connect to GND or Battery"-".

Antenna Installation

1. Active Antenna:

2. Active Antenna Installation:

1. Window films will cause poor reception due to it has a metallic coating. Install antenna on a clear window position.
2. Set the antenna power supply to "ON" in the setup menu of receiver, then go to channel manager to check the signal strength and quality. Move antenna to a best position.
3. The install location on figure are for reference only.



Device Installation

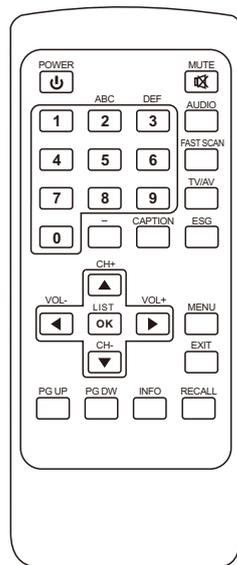
Depend on space and personal favorite, device may install under the seat or hatchback.

Trouble Shooting

Problem	Possible Causes	Solution
No power and LED off	Wiring of power cord	Check the connection of power cord
No sound or picture but LED is on	In stand_by mode	Press power key on remote to turn on
No sound or picture	No signal or signal too weak	Check antenna or cable connection
Picture NG	Signal is too strong	ADD an attenuator
	Signal is too weak	Re-install antenna or move antenna
No picture	Miss wiring /TV is not on AV mode	Connect AV cable, switch TV to AV mode
	Above is OK	Send for repair
Remote control does not operate	Battery exhausted	Replace battery
	Something shield the R/C signal	Keep the R/C window clear in front

2. Parent Lock: To set up a password or change the password via "Main Menu/Settings/Parent Lock"
 - Set User Age: To select the user age ,over 14 or over 17.
 - Reminder: The default password is "0000".
 - Change Password: Enter the existing password and press "OK" button on the remote control. It will ask you to enter new password if the existing password enters correctly.
3. Factory Default: Press "Yes" to delete all programs from memory and return all settings to factory default.
4. Transparency control: The degree of transparency of menu. Use "VOL+/VOL-" buttons of the remote control to change the degree of transparency from the transparency bar. The bigger number means higher degree of transparency.
5. Version Display: System information includes version and date.

Remote Control Unit (RCU)



- POWER : Switch the receiver between stand-by & on mode
- MUTE : Mute the audio output
 - Numeric Keys(0~9): For direct entry of channel number
 - Fast scan: Searching all channels quickly
 - TV/AV: Switch between TV and AV input mode
 - "- " : for logical channel input
 - In digital TV mode, there are more than 1 program in a channel location for example:CH14 may has 14-1,14-2, and 14-3
- CAPTION: Switch the closed caption "on" if the closed caption is transmitted on this channel
- ESG: Call up the ESG function
- CH(+ / -): Change channels sequentially up or down in viewing mode and move to the next higher or lower item in the menu
- VOL(+ / -): Alter the Audio output level up or down in viewing mode or move to the left or right item in the menu
- LIST/OK: Select an item or confirms a choice. A list will display in viewing mode
- AUDIO: Switch the audio language if transmitting more than one language
- MENU: Access the main menu
- EXIT: To return to previous status or exit
- PG UP/PG DW: Move up/down page in the channel list.
- RECALL: Go back to the previously viewed
- INFO: Display information of viewing channel

Starting

When you turn on the product, you need to scan channels in this step. (Shown on Figure. 1 No Program)

1. Connect the antenna to the antenna Jack.
2. Start to use ATSC M/H, you need to Press "OK" key to scan the local broadcasting automatically in order to get any available channels and programs. (Shown On Figure. 2 Scanning)
3. Volume Adjustment
Press "VOL+/VOL-" to adjust volume when program is playing.



Figure. 1 No Program

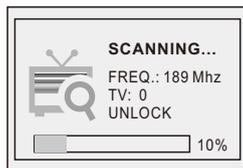


Figure.2 Scanning

Operation

Two main options which are TV MENU and SETUP MENU are shown when the "Menu" button is pressed. (Shown on Figure. 3 Main Menu)
Using "UP/DOWN" buttons to move the option upward or downward.

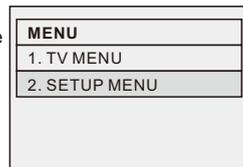


Figure.3 Main Menu

TV Menu

Four sub menus are shown in the TV Menu. (Shown on Figure. 4)

1. TV program: The number of channels is shown as a list.
2. Guide of program: The timetable of programs within a day can be shown.
3. Channel Scan: To remove and update programs. It will re-scan programs.
4. Option: ON/OFF the subtitle. (This function only applies to those broadcast programs supported) .

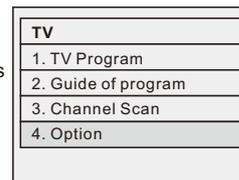


Figure. 4 TV Menu

Setup Menu

Press "Menu" and choose second choice: "SETUP MENU" to enter the sub menu of settings. (Shown on Figure. 5)

1. Channel No. Display-ON/OFF.
When you turn on the Channel NO. Display, the number of the channel will be shown on the top left of screen.
2. Language:

There are 3 kinds of language to choose: English, French or Spanish.

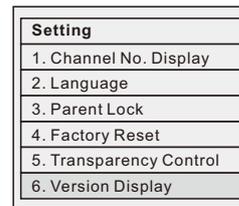


Figure. 5 sub menu of Settings