



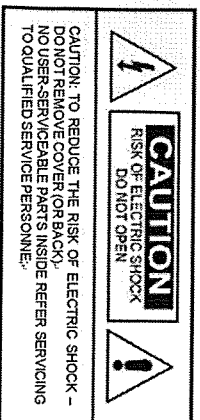
Digital

DIGI TWO



DIGITAL TUNER USER MANUAL

Important Safety Instructions and Caution



The lighting flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk at electric shock to persons."

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance."

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE

Please read all of these instructions regarding your unit and retain them for future reference.

- Read this manual fully and carefully before operating this in-car DAB receiver.
- Keep this manual handy as a reference for operating procedures and safety information.
- Pay close attention to all warnings in this manual and follow the instructions carefully.
- Do not allow other people to use this system until they have read and understood the operating instructions.
- Do not block or cover the slots and openings in the cabinet. These openings are provided for ventilation to ensure reliable operation of the product and to protect it from overheating.
- Do not operate this in-car DAB receiver in any way that will divert your attention from your vehicle. Always observe safe driving rules and follow all traffic regulations. If you experience difficulty in operating the system or reading the display, park your vehicle in a safe location and make necessary adjustment.
- Do not push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock.
- Do not place this unit near liquids. Electrical shock could result. Also, damages result from splashing liquids on receiver, can cause smoke, and overheat
- Be sure to run the vehicle engine while using this unit to avoid battery exhaustion.

Precautions

On Safety

- Do not attempt to install or service your DAB receiver on your own. Installation or servicing by people without proper training and experiences in electronic equipment and automotive accessories may be dangerous and could expose you to the risk of electric shock or other hazards.
- If the receiver does not work properly, please disconnect the plug for safety. Contact your local dealer for further technical support.
- If any solid object or liquid fall into the cabinet, disconnect the unit and have it checked by qualified personnel before operating it any further.

On Placement

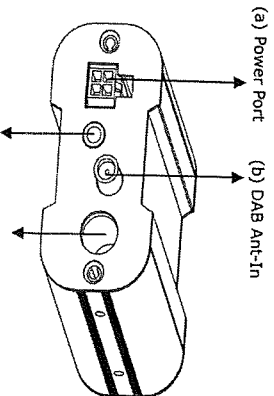
- Do not install the in-car DAB receiver where it may (i) obstruct the driver's vision, (ii) impair the performance of any of the vehicle's operating systems or safety features, including air bags, hazard lamp buttons or (iii) impair the driver's ability to safely operate the vehicle.

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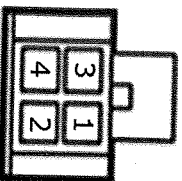
1. Unit Description

1.1.1 Front Side



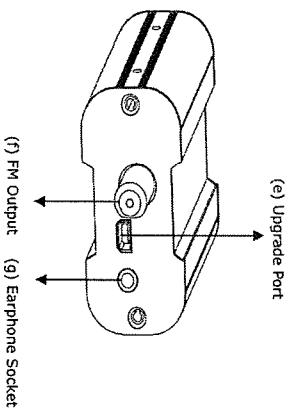
No.	Definition	Function
(a)	Power Port	Power input from in-vehicle battery, i.e. +12V, GND, ACC
(b)	DAB Ant. In	DAB antenna input port, SMA type. <i>Note. This DAB unit provides +5V DC output via this port for active antennas</i>
(c)	IR In	Port for connecting the infrared receiver for remote control use
(d)	FM Ant. In	FM antenna input port.

The Power port has wire definition as follows:





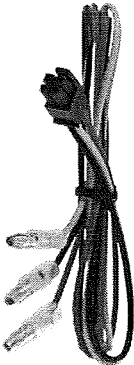
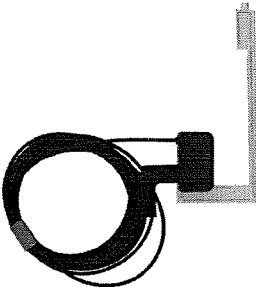
Pin No.	Pin Definition	Cable Color	Function
1	N/A		Not in use
2	Ground	black	Earth (ground) connection
3	ACC Input	red	12V ACC ignition. Connect this cable to ACC ignition of your vehicle.
4	+12V input	yellow	+12~24 V DC input. Connect this cable to (+) pole of the battery.

1.1.2 Rear Side





No.	Definition	Function
(e)	Upgrade Port	Mini USB port for software upgrade (via dealer tool)
(f)	FM Output	Combined FM radio and FM-modulated DAB output port for connecting to head unit
(g)	Earphone Socket	Audio L/R output for connecting to In-car stereo amplifier inputs

1.2 Accessories

IR Extension Cable	Remote controller
 <p>IR Extension Cable</p>	 <p>Remote controller</p>
 <p>Power Cable (supplied)</p>	 <p>DAB antenna</p>
<p>Power Cable with ISO connector (optional) Part Number - CTDAB-2ISO</p>	

1.2.1 Remote Control

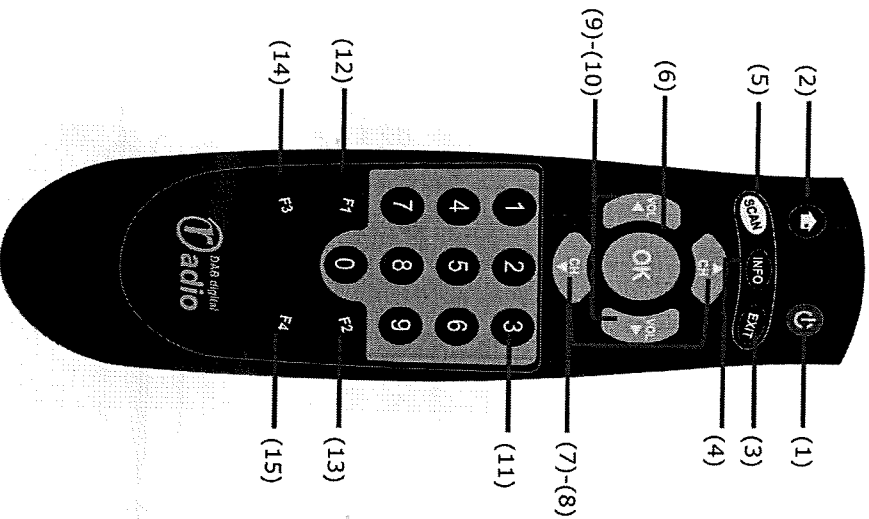
Basic operations of remote control

	name	Function
1		N/A
2		Hold - Clear and Scan
3	EXIT	Hold - Factory Reset
4	INFO	Hold - Display software version
5	SCAN	To scan channels automatically
6	OK	N/A
7	CH ▲	Select channel up
8	CH ▼	Select channel down
9	VOL►	N/A
10	VOL◄	N/A
11	Preset keys	Preset keys to select channels. Press for 4 second to set the current channel to the appointed preset key
12	F1	Set FM-modulated DAB output at 87.5 MHz
13	F2	Set FM-modulated DAB output at 87.6 MHz
14	F3	Set FM-modulated DAB output at 107.9 MHz
15	F4	Set FM-modulated DAB output at 108 MHz

Battery Installation

If the battery in remote controller is low on power, please install the battery as described below.

1. Use the "AA"-size batteries.
2. Rotate the battery cover to the 'open' side and remove the cover.
3. Insert the batteries with the + and - poles aligned properly.
4. Set cover back based on the indentation

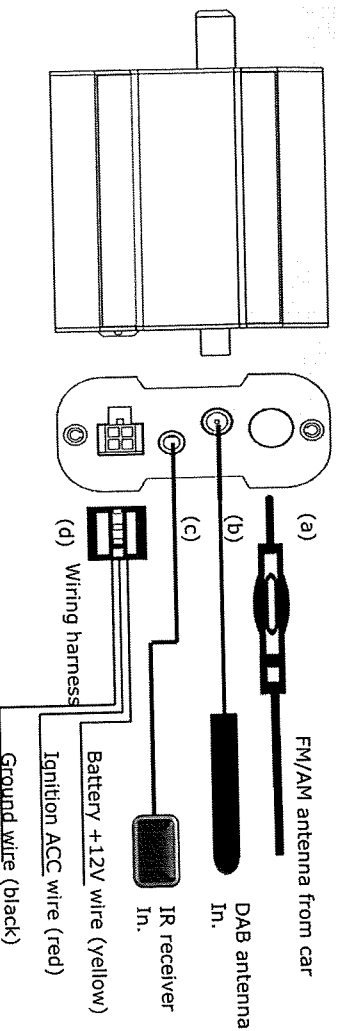


2. Installation of The Device

Integrating this device with your existing car stereo system is simple and easy. Simply connect both the existing FM antenna and DAB antenna to the device inputs, then the FM-modulated DAB radio is readily available via its FM output (F female connector on the other end of device). This paragraph is intended to guide you step by step how to correctly configure this device with existing FM antenna, power source, and audio output delivery to the car stereo.

2.1 Connecting to the inputs

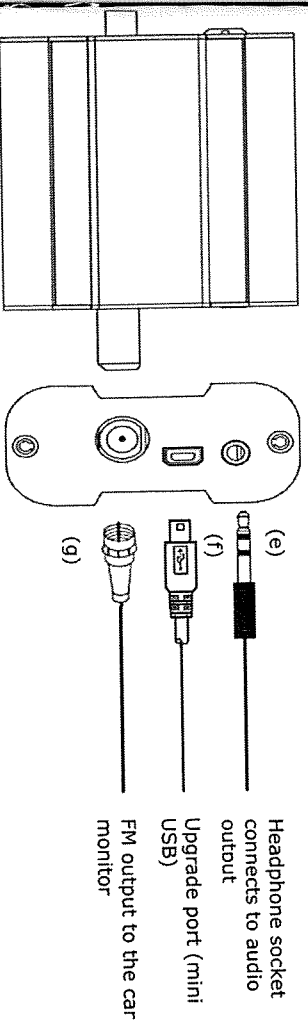
- Connect the existing FM/AM antenna (available from the car) to the port (a) of the unit.
- Connect DAB antenna into the DAB antenna port (b) of the unit.
- Connect IR receiver to the IR port (c). The IR receiver "window" should be located at positions that can maintain a line-of-the-sight for better command reception.
- Connect the wiring harness correctly to port (d) on the unit. This harness include +12V car battery supply, ignition wire (ACC), and ground wire. Note that a separate ISO connection cable may be provided to ease the connection.



2.2 Connecting to the output

In general cases, connect the device's FM antenna output port (g) to the car stereo's FM input as depicted below. No extra wiring is needed. The received DAB radio contents is already converted into FM signal and fed into the car stereo as a commonplace FM station.

Headphone socket i.e. port (e) is another audio output option for car stereo to receive the DAB contents. Note that the Mini USB port (f) is only for software upgrade of the unit. It is intended for service professionals, not for general public.



Once completed, one can turn on the vehicle and the LED on IR receiver will be ON as a "power ON" indication to remind users the power is running through the unit.

Note: Please make sure that the unit is fastened tightly and securely. If the unit is loose and dangling, it may result in malfunction



1. Please make sure that all the wire connections are securely made by inserting jacks until they lock completely.
2. If your vehicle's ignition does not have an ACC position, or if the ignition wire is connected to a power source with constant voltage such as battery wire, the power will not be linked with the ignition (i.e., it will not turn on and off along with the ignition). If you want to link the unit's power with the ignition, connect the ignition wire to a power source that can be turned on and off with the ignition key.
3. If the fuse blows, first make sure that the wires have not caused a short circuit, then replace the old fuse with one with the same rating.
4. Insulate unconnected wires with vinyl tape or other similar material. To prevent short circuits, also do not remove the caps on the ends of the unconnected wires of the terminals.

3. Basic Operations

3.1 To Turn Power On

- Turn on the vehicle/car, the device will be powered automatically
- As an indication that the power is ON, LED light on IR receiver will illuminate.
- To turn the power OFF, turn off the vehicle/car.



Power ON



Power OFF

3.2 Select a Frequency for DAB radio

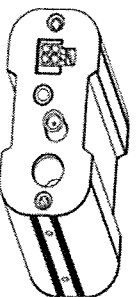
- Before enjoying the DAB audio entertainment, the frequency of the unit/HY-50 and car stereo needs to be corresponded to each other.
- To set the frequency of the unit/HY-50 to the desired frequency, use remote control button [F1]/[F2]/[F3]/[F4] to one of the preset frequencies shown at the table below.

Note. The preset frequencies on the remote control **cannot** be changed.

- To set the frequency of the car radio (1 din/monitor) depends on the model itself. However users are to use one of the four frequencies (87.5, 87.6, 107.9 or 108 MHz) for DAB audio entertainment.

Pre-set frequency	Remote control buttons
87.5 MHz	[F1]
87.6 MHz	[F2]
107.9 MHz	[F3]
108 MHz	[F4]

Once the car stereo is set to the selected frequency, say 107.9MHz, then one can see the station name appearing on the car stereo display (an example as shown below).



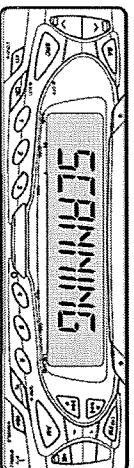
Set at 108 MHz



Set at 108 MHz

3.3 Scanning the DAB Channels

- Before scanning for the available channels, ensure the frequency on the car radio (1 din/monitor) is selected at one of following frequencies- **87.5 MHz, 87.6 MHz, 107.9 MHz or 108 MHz.**
- Press [**Scan**] button on the remote control to search for DAB channels
- An indication that the scanning process has began, the LED on IR receiver will start flashing.
- Some car radio/monitor may display the process of scanning if the car radio is installed with radio data system (RDS) as shown below.



- When auto-searching process is done, the broadcasting service will start automatically if there is any program found or DAB signals received. Program names/information may be shown if the car radio has RDS function.
- The clear and scan option can be used when traveling around the country. This will clear all channels with no signal, and refresh with all available channels in that area.* It will not delete presets.
- The factory reset option will clear all channels and presets.

3.4 Output frequency selection

- If users are restricted to one frequency say 87.5 MHz because it is occupied by other FM/AM radio station or reception issues (receptions of DAB signals vary from country to country as well as area to area), three other frequencies are provided as alternatives.
- To switch to other frequency such as 108 MHz, press [**F4**] button on the remote control.
- Table below provided the corresponding frequencies to the remote control buttons.

Pre-set frequency	Remote control buttons
87.5 MHz	[F1]
87.6 MHz	[F2]
107.9 MHz	[F3]
108 MHz	[F4]


3.5 Channels tuning/setting

- Press [CH▲]/ [CH▼] buttons on remote control to tune or navigate the DAB channels. Note that there will be **a few seconds delay** from the moment you press the [CH▲]/ [CH▼] buttons to the time you have seen the station name available on display.
- To set a particular channel as user's favorite, press one of the digital keys on the remote control **[0]-[9]** for more than four seconds. During which time, the LED light on IR receiver will start flashing very rapidly showing that the unit is receiving such signal.
- Flashing will stop once the favorite channel is set to the appointed digital key.

3.6 Audio Control

- Audio adjustment should be tuned using the car stereo. The CTDAB-2 has no audio control function available.

4. Software Version and Upgrade

 **To upgrade the user interface software version.**

Upgrade of CTDAB-2 software is not intended for general public; please contact your local dealer for more information.

5. RDS (Radio Data System)

RDS is a communications protocol standard for embedding small amount of digital information in the FM radio broadcasting. Program name/time/identification of the station will be displayed on the car monitor if RDS is available; allowing users to quickly identify which station is being received. RDS also serves as an alarming system. When an emergency transmission (announcing disasters, etc) is sent, all current functions are interrupted to allow the warning to be received.

6. Trouble Shooting Q&A

Most of the troubleshooting issues can be easily solved. The common cases and their respective solutions are listed in the table below. If the problem persists, please contact the after sales service.

Problem	Possible Reason	Solution
The power does not turn on	The fuse has blown	Check for short circuits in the wires, replace the fuse with the same rating.
No audio.	The power cord is not properly inserted into the unit.	Check the power wire connection.
	The unit is not on but no audio	Check the FM output connection
	The number of available channels is limited due to the local broadcasting system. The available channels can vary depending on the area.	Perform "Scan" rescan all the channels.
	The signal quality of some TV channels is too low.	Please use active antenna instead of passive antenna for better reception quality
	Some Radio channels are not available.	Only the locally free broadcasted channels can be viewed. They can differ depending on the area.
In DAB mode, all of the channels show low signal quality	The antennas are not properly connected.	Please check the connection of the antennas and place the antenna at different location. (Ref. page7 : DAB antenna connection)
	No radio service is provided in the area.	Check your country DAB radio coverage map. It is not possible to listen to digital radio in non-covered areas.
	No "line-of-sight" between unit and controller	Ensure there are no obstacle between the controller and the unit.
The remote control does not work	Power of remote controller is low	Check the remote control battery.

7. Specification

Features	
DAB	Best in class performance of DAB
RF Input	
Antenna	Passive and active antenna supported (SMA type)
Frequency range	VHF Band3 (170-230 MHz)
RF input Impedance	75 Ohm
Radio broadcasting System	
Transmission standard	ETSI EN 300 401 DAB compliant
Audio decoder	Audio: MPEG Audio Layer II, AAC
S/W Feature	
Features	Channel Management, Auto Channel Search
Media format	
Audio format	mp3, wav
Interface	
AV I/O port	DC input, ACC input, IR input and Stereo audio output
USB Port	Host USB 2.0 supported
Infrared Remote Control	Supported through IR Extension Dongle Cable
Power	
Input voltage	+12-+24 V DC
Power consumption	2.4 W
Dimension and Weight	
Dimension	65mm x 57mm x 30mm
Weight	110g