

## Media USB / CD-ROM

One single media can easily fit thousands of songs (audio tracks). These tracks are often referred to as MP3 and WMA. We use (computer) filenames as track titles. Tracks can be put into folders and sub-folders.

For media carriers such as USB sticks, the unit can play files inside sub-folders.

Avoid having too many levels of depth in the sub-folders.

Do not carry too many audio files on a media to avoid difficulty in finding the desirable song / track.

With media, both the hardware and software get updated at a relatively fast pace. The unit is shipped with the latest media compatibility; newer USB sticks and/or new file formats may not be compatible with this unit.

Listed below are the alternative functions of various keys on the front panel for media playback.

>>| Next track (short press), fast forward (press and hold down)

|<< Previous track (short press), rewind (press and hold down)

>|| Play and Pause playback.

Repeat play mode. RPT TRK repeats the current track when it has reached the end. RPT FLD repeats playing of all the tracks in the current folder. RPT ALL repeats all the tracks in the media.

INTRO Intro-play, INT indicator will be shown on the LCD display. When in this mode, the radio will play the beginning 10 seconds of each track (intro) then skip to the next track, and again, play only the beginning 10 seconds. When the listener finds a desirable track, press the INTRO button again to cancel intro-play.

RDM Random-play, RDM ALL randomly plays from all tracks, RDM FLD plays tracks randomly from the current folder. RDM OFF plays tracks in the order they appear in the folder.

FLV / FLA Previous folder and next folder.

There is a BROWSE feature that allows the user to cycle through the available media by folder, then filename to choose a song – press the BAND button to select this mode – the rotating the volume knob scrolls through the track list and pressing the volume knob selects the desired choice.



## Reset - Software / Hardware

Soft Reset – MENU – RESET: If the user is not sure if settings on the radio had been altered inadvertently, restoring the factory default settings may help. Upon a reset, factory default settings will be reloaded overwriting current data, and the user should notice that all preset values will be set to default (lost). For example, the user may need to re-scan for radio stations and store them into the presets.

Hard Reset - A hardware reset button is located on the front panel (see "Front Panel Layout") and can be activated by a paper clip or pen – this is only necessary if the radio refuses to react to any button input.

## Power Off Timer

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This radio has a power-off-timer enhancement feature. The setting for this is in the system menu, accessed by long pressing the MENU button in any mode. Settings are OFF, AUTO, 30 min, 60 min and 90 min. "OFF" is the factory default value where the radio powers off immediately when the ignition key is switched off. This is the same as conventional radios.

AUTO mode will switch off the radio with the ignition, but you can turn the radio back on (or off) for a 30-minute period

30, 60 or 90 minutes will keep the radio playing for this time after the ignition is switched off. Turning the radio off manually will cancel the timer and the radio will not switch on until the ignition is also turned on.

This count-down timer is shown on the display using the small secondary line of characters.

In the last 5 minutes of the count-down time the main display will warn the user that the radio is about to shut down.

This feature extends listening time and allows the ignition key to be removed for safety reasons. It also prevents the battery from being drained if the radio is left turned on for an extended period. Exact availability of this feature depends on the type of the vehicle since both a switched ignition "ACC" wire and a permanent battery "B+" wire are used to control this function and must be connected to the radio.

## Tips

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This unit will not display non-English characters such as Ê and Ö. Non-displayable character may be shown as asterisk "\*\*".

Many RDS functions do not show an immediately apparent effect. For example, the user will only notice TP when a traffic announcement is being broadcast. If in doubt, the user is advised to use the default settings. Many functions on FM RDS permit the radio to automatically change tuning frequency.

## Wiring Notes

Connections to be made to the rear of the unit during installation.

Connector A pins:

A4. B+ or BATT +12V

When the radio is turned on, electric power is supplied to the internal electronics of the unit through this pin. Main consuming blocks such as audio power amplifier and backlights draw power from this pin. Ensure the connecting wire has minimum AWG14 wire gauge to carry the current.

A5. AUTO ANTENNA OUTPUT +12V

The voltage state on this output pin is a direct indicator of whether this unit is powered on or off. It can be used to control ancillary equipment such as an automatic electric antenna or an audio power amplifier. If connected properly, such ancillary equipment will power on automatically in sync with the radio.

A7. ACC or +12V IGNITION KEY INPUT

Normally connects to the ignition key circuit. By sensing the voltage on this pin, the unit is able to automatically power on and power off using the input from the ignition key switch.

A8. CHASSIS GROUND (EARTH)

All electric current from this pin is combined to complete the power supply circuit. Ensure the connecting wire has minimum AWG14 wire gauge to carry the current. The metal enclosure of this unit is grounded to this pin. The unit is only suitable for "negative earth" vehicles.

### **PINS A4 and A7 B+ (BATT) and ACC (IGNITION) CAN BE SWAPPED BY CHANGING THE POSITION OF THE FUSE - SEE DIAGRAM BELOW**

Connector B pins (loudspeakers pins):

B1. REAR RIGHT (+)

B2. REAR RIGHT (-)

B3. FRONT RIGHT (+)

B4. FRONT RIGHT (-)

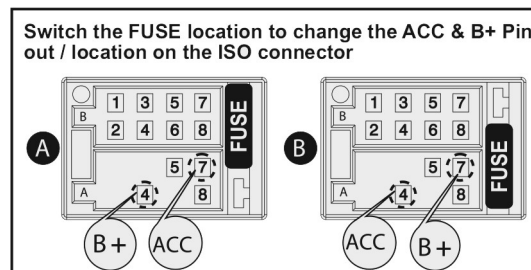
B5. FRONT LEFT (+)

B6. FRONT LEFT (-)

B7. REAR LEFT (+)

B8. REAR LEFT (-)

**IMPORTANT NOTE:** Always replace the fuse with the same type and rating. A blown fuse usually indicates a problem in the circuit. Do not rely completely on replacing the fuse to fix a problem. An over-rated fuse will compromise protection against over-current. Under-rated fuses can blow even if a fault condition does not exist.



## Mounting Notes

### **Fitting the Radio**

Fit the mounting cage (sleeve) into the vehicles' ISO / DIN slot and bend the fixing tangs to lock it in place.

Connect the wiring to the rear of the radio.

Slide the radio into the cage until it "clicks" into place on the locking clips.

Fit the bezel (trim ring) on the front of the radio.

Check correct operation of the radio.

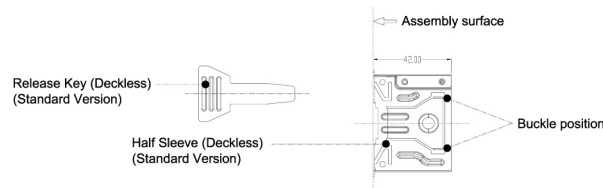
### **Removing the Radio**

Slide the Release Keys centrally along the two sides of the radio to release the locking clips.

Slide the radio out, keeping the Release Keys in place.

Once the radio is out disconnect all the wiring and remove the radio completely.

If necessary bend the fixing tangs inward to remove the mounting cage as well.



### **Fitting the External Microphone**

The Bluetooth radio models may be supplied with an external microphone this will be either a panel mounted unit with a M8 stud or a visor clip.

#### *Panel mounted M8 stud:*

Find a suitable location as close to the front of the user as possible.

Drill a 8.5 to 9mm hole for the mounting stud, run the cable through this and route it to the radio.

Fit the star washer and the M8 nut to hold the microphone in place.



#### *Visor mounted:*

Find a suitable location as close to the front of the user as possible.

Clip, or use an adhesive pad to mount the microphone, and route the cable to the rear of the radio.



When routing the cable back to the radio be careful of sharp edges and pinch points that may damage the cable.

Make sure the cable and microphone do not interfere with any control operation or compromise the users view.

## Technical

### TUNER (FM)

Frequency range	See World Bands below
Channel step	See World Bands below
Sensitivity	<= 10 dB $\mu$ V
Stereo separation	>= 30 dB
SNR	>= 50 dB
Auto Stop Sens. LOC on	38 dB $\mu$ V +/- 6dB (LO)
Auto Stop Sens. LOC off	18 dB $\mu$ V +/- 6dB (DX)

### TUNER (DAB/DAB+)

Frequency range	VHF Band III 174 - 240MHz
Sensitivity	<= 12 dB $\mu$ V
SNR	>= 65 dB
Scan Sensitivity	<= 12 dB $\mu$ V

### MEDIA (USB, CD)

Stereo separation	>= 50 dB
SNR	>= 65 dB
Media Codecs	WAV, FLAC, MP3, WMA

### GENERAL

Power Supply	12V DC (9 to 18V)
Fuse Rating	15A
Permanent Memory	EEPROM
Mounting	DIN / ISO Cage

### TUNER (AM)

Frequency range	See World Bands below
Channel step	See World Bands below
Sensitivity	<= 40 dB $\mu$ V
SNR	>= 40 dB
Auto Stop Sens. LOC on	55 dB $\mu$ V +/- 6dB (LO)
Auto Stop Sens. LOC off	33 dB $\mu$ V +/- 6dB (DX)

### AUDIO

Audio Power	40W max. / Channel, 4 Ohms @ 10% THD
Speaker Impedance	4 to 8 Ohm
Line Output Level	1.7V nominal
Line Output SNR	>= 70 dB

### BLUETOOTH

frequency range	2402~2480MHz
Output power(MAX)	<10dBm

World Bands	FM Frequency [MHz]			AM MW Frequency [kHz]			AM LW Frequency [kHz]		
	Start	End	Step [kHz]	Start	End	Step [kHz]	Start	End	Step [kHz]
EUROPE	87.5	108.0	50	526.5	1606.5	9	148.5	283.5	1
USA	87.5	107.9	200	530	1710	10	---	---	---
JAPAN	76.0	90.0	100	522	1629	9	---	---	---
M-EAST	87.5	108.0	100	531	1602	9	---	---	---
LATIN	87.5	108.0	100	520	1620	10	---	---	---
AUS-TLIA	87.5	108.0	100	522	1710	9	---	---	---
ASIA	87.5	108.0	100	531	1602	9	---	---	---

#### FCC Statement

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

2. any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**NOTE:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

#### Industry Canada (IC) Warning

This device contains licence-exempt transmitter(s) / receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

- (1) This device may not cause interference; and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

#### CD Player Models contain a CLASS 1 LASER PRODUCT

Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007

#### FCC/IC Radiation Exposure Statement

This equipment complies with FCC and IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body

- French:  
Cet appareil contient des émetteurs / récepteurs exempts de licence conformes aux RSS (RSS) d'Innovation, Sciences et Développement économique Canada. L'exploitation est autorisée aux deux conditions suivantes :

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radio électrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

#### FCC/IC Déclaration d'exposition aux rayonnements

Cet appareil est conforme à FCC et IC l'exposition aux rayonnements limites fixées pour un environnement non contrôlé. Cet appareil doit être installé et utilisé avec une distance minimale de 20 cm entre le radiateur et votre corps. Cet transmetteur ne doit pas être co-situé ou opérant en liaison avec toute autre antenne ou transmetteur.



**Instructions on Disposal and Environmental Protection**

Do not dispose of this product in the usual household garbage at the end of its lifecycle; hand it over at a collection point for the recycling of electrical and electronic appliances. The symbol on the product, the instructions for use or the packing will inform about the methods for disposal.

The materials are recyclable as mentioned in this marking. By recycling, material recycling or other forms of re-utilization of old appliances, you are making an important contribution to protecting our environment.

Please inquire at the community administration for the authorized disposal location.

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