



Operation and Maintenance Manual

Caterpillar Short Body Radio

L66 1-UP (Machine)
L77 1-UP (Machine)
L88 1-UP (Machine)
H66 1-UP (Machine)
H77 1-UP (Machine)
H88 1-UP (Machine)
L22 1-UP (Machine)
H24 1-UP (Machine)
H22 1-UP (Machine)
H26 1-UP (Machine)
L24 1-UP (Machine)

Important Safety Information

Most accidents that involve product operation, maintenance and repair are caused by failure to observe basic safety rules or precautions. An accident can often be avoided by recognizing potentially hazardous situations before an accident occurs. A person must be alert to potential hazards, including human factors that can affect safety. This person should also have the necessary training, skills and tools to perform these functions properly.

Improper operation, lubrication, maintenance or repair of this product can be dangerous and could result in injury or death.

Do not operate or perform any lubrication, maintenance or repair on this product, until you verify that you are authorized to perform this work, and have read and understood the operation, lubrication, maintenance and repair information.

Safety precautions and warnings are provided in this manual and on the product. If these hazard warnings are not heeded, bodily injury or death could occur to you or to other persons.

The hazards are identified by the "Safety Alert Symbol" and followed by a "Signal Word" such as "DANGER", "WARNING" or "CAUTION". The Safety Alert "WARNING" label is shown below.



The meaning of this safety alert symbol is as follows:

Attention! Become Alert! Your Safety is Involved.

The message that appears under the warning explains the hazard and can be either written or pictorially presented.

A non-exhaustive list of operations that may cause product damage are identified by "NOTICE" labels on the product and in this publication.

Caterpillar cannot anticipate every possible circumstance that might involve a potential hazard. The warnings in this publication and on the product are, therefore, not all inclusive. You must not use this product in any manner different from that considered by this manual without first satisfying yourself that you have considered all safety rules and precautions applicable to the operation of the product in the location of use, including site-specific rules and precautions applicable to the worksite. If a tool, procedure, work method or operating technique that is not specifically recommended by Caterpillar is used, you must satisfy yourself that it is safe for you and for others. You should also ensure that you are authorized to perform this work, and that the product will not be damaged or become unsafe by the operation, lubrication, maintenance or repair procedures that you intend to use.

The information, specifications, and illustrations in this publication are on the basis of information that was available at the time that the publication was written. The specifications, torques, pressures, measurements, adjustments, illustrations, and other items can change at any time. These changes can affect the service that is given to the product. Obtain the complete and most current information before you start any job. Cat dealers have the most current information available.



When replacement parts are required for this product Caterpillar recommends using Cat replacement parts.

Failure to follow this warning may lead to premature failures, product damage, personal injury or death.

In the United States, the maintenance, replacement, or repair of the emission control devices and systems may be performed by any repair establishment or individual of the owner's choosing.

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Foreword

Literature Information

This manual should be stored in the literature holder.

This manual contains safety information, operation instructions, and maintenance recommendations.

Some photographs or illustrations in this publication show detail or attachments that can be different from your product.

Continuing improvement and advancement of product design might have caused changes to your product which are not included in this publication. Read, study, and keep this manual with the product.

Whenever a question arises regarding your product, or this publication, please consult your Cat dealer for the latest available information.

Safety

The safety section lists basic safety precautions. In addition, this section identifies the text and locations of warning signs and labels used on the product.

Operation

The operation section is a reference for the new operator and a refresher for the experienced operator. This section includes a discussion of gauges, switches, product controls, attachment controls, and programming information.

Photographs and illustrations guide the operator through correct procedures of checking, starting, operating, and stopping the product.

Operating techniques outlined in this publication are basic. Skill and techniques develop as the operator gains knowledge of the product and its capabilities.

Maintenance

The maintenance section is a guide to equipment care.

Safety Section

i07214481

General Hazard Information

SMCS Code: 7606

WARNING

Do not operate or work on this equipment unless you have read and understand the instructions and warnings in the Operation and Maintenance Manuals. Failure to follow the instructions or heed the warnings could result in injury or death. Contact your Caterpillar dealer for replacement manuals. Proper care is your responsibility.

Foreword

This document is a supplement to the Operation and Maintenance Manual for the equipment. Permanently attach this document to the Operation and Maintenance Manual for the equipment.

Introduction

This document provides information about the operation of the Caterpillar AM/FM Radio System.

Operation of the equipment and the maintenance of the equipment must not occur unless the instructions and warnings in the Operation and Maintenance Manual for the equipment have been read and the instructions and the warnings are understood. The contents of this document must be understood before the equipment that is equipped with the Caterpillar AM/FM Radio System is operated.

Warnings and Compliance

Thank you for purchasing this product, read the manual carefully before operating, and reserve manual for future reference.

Precaution

- Use only in a 12-volt DC negative- ground electrical system.
- Disconnect the vehicles negative battery terminal while mounting and connecting the unit.
- When replacing the fuse, be sure to use one with an identical amperage rating.
- Using a fuse with a higher amperage rating may cause serious damage to the unit.

- Make sure that pins or obstacles do not get inside the unit, pins and obstacles may cause malfunctions, or create safety hazards such as electrical shock.
- If you have parked the vehicle for a long time in hot or cold weather, wait until the temperature in the vehicle becomes normal before operating the unit.

Before Operation

Do not raise the volume level too high. Keep the volume at a level at which you can hear outside warning sounds (horns sirens, and so on).

Stop the vehicle before performing any complicated operations.

Caution

Do not open the cover and do not repair. Ask your authorized dealer for help.

Note: According to models with different wiring harness to connect the definition of the specific content, refer to the model label.

Note: Specifications and the design are subject to change without notice due to improvements in technology.

Operation and Maintenance Manuals(OMM) are currently available at: www.cat.com/radio-owners-manual

For mobile equipment or equipment that is located in areas where direct internet access is not available while the product is in use, a paper copy of the OMM must be printed and kept with the product.

For more information or for a paper copy of the OMM contact your nearest Cat Dealer: www.cat.com/en_US/support/dealer-locator.html

Product Information Section

Identification Information

i07214484

Regulatory Compliance

SMCS Code: 7606

FCC Information

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.
- Changes or modifications not expressly approved by the party responsible for compliance could void the users 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 receives radio frequencies and can radiate radio frequency energy. Improper installation of the radio and improper use in accordance with the instructions the radio may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment causes harmful interference to radio or television reception, interference 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.

FCC Notice

The following notices are provided.

Modification Statement

Caterpillar has not approved any changes or modifications to this device by the user. Any changes or modifications could void the users authority to operate the equipment.

Radiation Exposure

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Radio Frequency Range

The following Driver Safety System communication device specifications are provided to aid in conducting any related hazard assessment and to ensure compliance with all local regulations:

The radio has been constructed so that it can be operated in Belgium without infringing upon applicable requirements on the use of their radio spectrum.

Table 1

Bluetooth	
Output power	4 dBm (Class 2)
Frequency band	2.4000 GHz - 2.4835 GHz (ISM Band)
Range	10 m (free space)
Standard	Bluetooth 2.0 specification

i07214485

Declaration of Conformity

SMCS Code: 7606

Two Declarations of Conformity are listed below.

Table 2

CATERPILLAR®

EU Declaration of Conformity

This Declaration of Conformity is issued under the sole responsibility of the manufacturer.

The undersigned, representing the manufacturer:

Caterpillar, Inc.

100 N.E. Adams

Peoria, IL 61629

USA

hereby declares that the product, object of this description:

Caterpillar entertainment radios

Brand: Caterpillar

Model: N/A

**Part Number:
525 - 1508**

Antenna: 8E-1118

Is in conformity with the relevant European Union harmonization legislation: Directive 2014/53/EU and Directive 2011/65/EU

Conformity is shown by compliance with the applicable requirements of the following documents:

Conformity Assessment Procedure: _____Annex II, ☒ X _____Annex III, _____Annex IV

2014/53/EU	LVD (Sec 3.1a):	EN 60065:2014
		EN 62479:2010
	EMC (Sec 3.1b):	EN 301 489-1 V2.2.0
		EN 301 489-17 V3.2.0
	RF(Sec3.2)	EN 300 328 V2.1.1
2011/65/EU	RoHS	Final Draft EN 303 345 V1.1.7
		EN 50581:2012

Table 3

Notified Body Name: Siemic Inc.

Notified Body Number: 2200

Examination Certificate #: RE17101308

Product Information Section
Declaration of Conformity

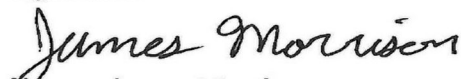
Signature:

Name: James Morrison**Title:** Engineering Manager - 3**Place:** *Mossville, IL USA***Date:** *10/19/2017*

Illustration 1

g06252618

Declaration of Conformity

Table 4

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100 N.E. Adams

Peoria, IL 61629

USA

hereby declares that the product, object of this description:

Caterpillar entertainment radios

Brand: Caterpillar**Model:** N/A

Part Number:
524 - 3711

Antenna: 525-7960

**Is in conformity with the relevant European Union harmonization legislation: Directive 2014/53/
EU and Directive 2011/65/EU**

Conformity is shown by compliance with the applicable requirements of the following documents:

Conformity Assessment Procedure: Annex II, X Annex III, Annex IV

2014/53/EU

LVD (Sec 3.1a):

EN 60065:2014

EN 62479:2010

EMC (Sec 3.1b):

EN 301 489-1 V2.2.0

EN 301 489-17 V3.2.0

RF(Sec3.2)

EN 300 328 V2.1.1

Final Draft EN 303 345 V1.1.7

2011/65/EU

RoHS

EN 50581:2012

Table 5

Notified Body Name: Siemic Inc.**Notified Body Number:** 2200**Examination Certificate #:** RE17101307

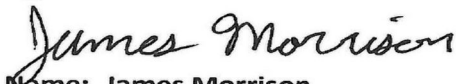
Signature:**Name:** James Morrison**Title:** Engineering Manager - 3**Place:** Mossville, IL USA**Date:** 10/19/2017

Illustration 2

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Operation Section

Operation

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Radio (Entertainment If Equipped)

SMCS Code: 7338

 **CAUTION**

When driving, always keep your eyes on the road and hands on the steering wheel, paying careful attention to normal driving tasks. As always, the driver is responsible for safe vehicle operation. Not keeping your eyes on the road and hands on the wheel while driving could result in injury to you or others.

Introduction

Information included in this owners manual was accurate at the time of publication. Caterpillar, however, reserves the right to change specifications and performance without prior notice. Check with your dealer for details regarding changes that may have occurred since time of printing.

The Radio system is controlled by using the buttons, RSA, or steering wheel controls.

Stereo Receivers

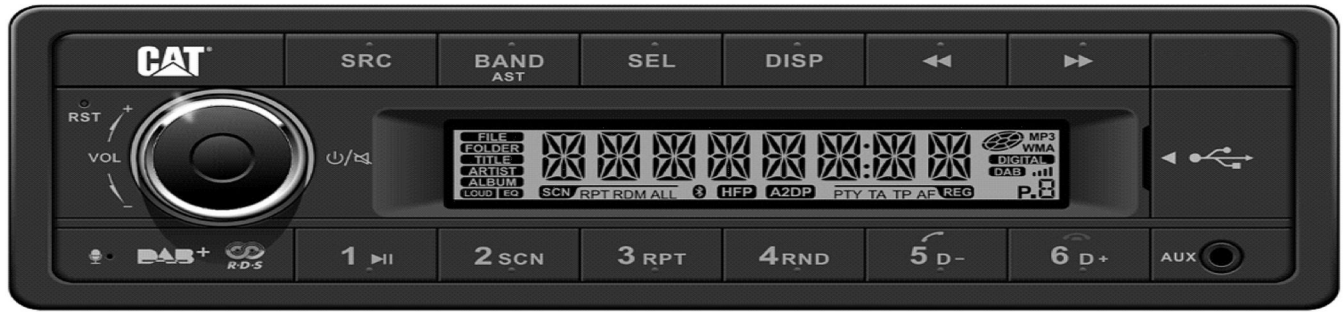


Illustration 3 g06244205

RADIO/USB MP3/USB/DAB+/DAB/Bluetooth Receiver

Radio Pin out

Radio pinout is shown below



Pin No	Note	Pin No	Note
3	Telephone mute low	9	Rear R+
4	Ignition	10	Rear R-
5	Antenna Remote	11	Front R+
6	Illumination	12	Front R-
7	Battery+	13	Front L+
8	Power Ground	14	Front L-
21	SWRC+	15	Rear L+
22	SWRC GND	16	Rear L-
23	Left AUX Input	25	AUX GND
24	AUX Shield GND	26	Right AUX Input
31	Mic+	32	Mic-

General Radio Receiver Functions

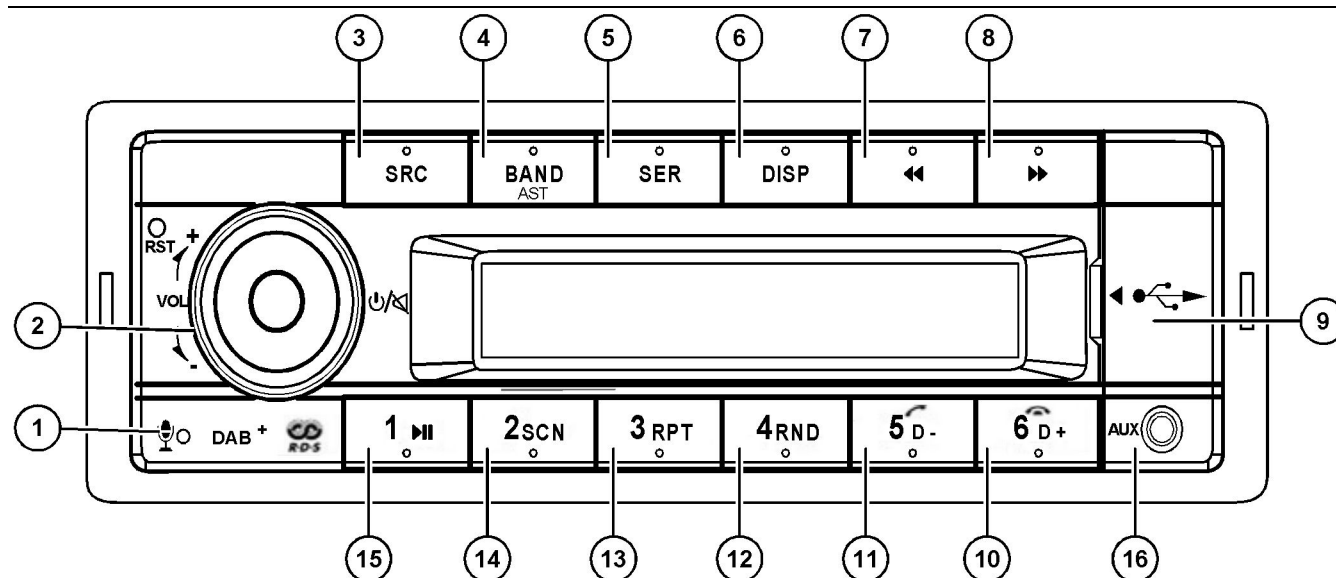


Illustration 5

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- (1) Microphone
- (2) Power ON/ OFF / Mute
- (3) Power button
- (4) Band / AST button
- (5) Source (SRC) Button
- (6) DISP (Display) Play/Pause

- (7) PREV (Previous)
- (8) Next Button
- (9) USB Slot
- (10) MP3 Folder ahead / Phone Hang Up
- (11) MP3 Folder back / Phone Pick Up
- (12) MP3 Random play

- (13) MP3 Repeat play
- (14) Program intro Play (SCAN)
- (15) MP3 / Bluetooth Play / Pause
- (16) Front Auxiliary input

Options

- An AM band with 6 AM presets
- Three FM bands with a total of 18 FM presets
- One weather band with six WX presets

General Operation

Power ON / OFF / Mute

To Switch on the Radio push the Power ON/OFF button. To switch off the Radio, push the Power ON/OFF button for more than 2 sec. The Radio will be muted by pushing the Power ON/OFF button for less than 2 sec.

Ignition Logic

With ignition logic activated (Default setting) the Radio can be switched on and off manually even if the vehicles ignition pin is not connected. To avoid battery discharge, the radio is switched off after 1h without user operation.

System Settings

The system settings menu is entered by long pressing the [DISP] button. To access the available menu entries, push the search buttons [<< / >>]. To select the available options of each menu entry, rotate the [VOL] knob.

Source (SRC) Button

Press the [SRC] button to switch between and select available sources: TUNER->USB->AUX F->AUX R->Bluetooth->DAB (applicable to DAB feature). USB and Bluetooth is only visible in the menu when connected.

Reception Area

This Radio is designed to work in different regions with different frequency ranges. The Reception area can be adjusted via the System Settings menu

The following Areas are available:

- EUROPE
- ASIA
- JAPAN
- North Africa

- United States of America (USA)

Clock Setting

The clock time can be adjusted manually by long pressing the [DISP] button to set the time.

Select [CLOCK] with the search buttons [<< / >>]. Press [SEL] button and rotate [VOL] knob to adjust the minutes.

VOLUME KNOB/OK

To adjust the Volume, rotate the [VOL] knob

Predefined sound effects

The Radio provides different predefined sound effects . Press the [SEL] button to enter the Sound settings menu. Rotate the [VOL] knob to select one of the following options: EQ OFF -> POP -> ROCK -> CLASSIC -> JAZZ -> CUSTOM.

Balance. Fade and Loudness

To adjust Balance, Fader and Loudness press the [SEL] button and then push [<< / >>] button to select BALANCE -> FADER -> LOUDNESS. Rotate the [VOL] knob to adjust Balance, Fade, and Loudness according to your needs.

Manual Sound Adjustment

For manual sound adjustments first select CUSTOM. Push the [SEL] button again and then select BASS or TREBLE with the [<< / >>] button. Rotate the [VOL] knob to adjust BASS and TREBLE according to your needs.

Note: The default setting

AM-FM Radio

To access AM/FM Radio, press the [SRC] button and select Tuner.

Select Band

Press the [BAND] Button to select one of the available Radio Bands. The Radio bands will be changed in the following order: FM1 -> FM2 -> FM3 -> AM1 -> AM2

Note: The AM Band can be deactivated by the user via the system settings menu.

Automatic Tuning

For Automatic tuning press the [<< / >>] button. The Radio will search and select the next receivable station.

When Traffic Announcement is activated ("TA = ON"), only stations that broadcast Traffic announcements will be tuned.

Manual tuning

For manual station selections press the [<< / >>] button for longer than 2 sec. "MANUAL" is shown in the display. Pressing the [<< / >>] button again the frequency will be incrementally increased/decreased.

Manual Storing Favorites

There are 18 FM , 12 AM Favorite banks available. Select the favorite bank where to store the station and tune the station that shall be stored. Push the preset button longer than 2 sec .to store the station

Recall Stored Favorites

To recall a stored favorite, push the preset button corresponding to the stored favorite.

Auto Memory Store

To search for the best receivable stations and store as favorite, press the (BAND/AST] button for 2 sec. The Radio searches the best receivable station and stores those stations.

RDS

Many FM Stations in Europe transmit RDS data (Radio Data System) in addition to audio programs.

With RDS the user has the following benefits:

- The best audible frequency (AF) of a selected station is tuned automatically for best reception quality. To enable automatic selection of best audible frequency, select "AF=ON" in the Settings menu.
- The Radio recognizes Traffic Announcement and can switch to Radio, even if another Audio source is selected. To enable automatic Traffic announcement, select "TA=ON" in the Settings menu.
- Some Stations provide regional specific programs. With the regional (REG) function only those frequencies are followed that broadcast the selected regional program. To follow regional programs, select "REG=ON" in the Settings menu.
- The stations name can be displayed.

Note: For further settings see System Menu.

Program Type (PTY)

Via the RDS System FM stations in many countries transmit the type of program (Program Type , PTY) that is broadcasted.

To search for a desired Program type, push [SRC] for about 2 seconds and select the Program type by rotating the [VOL] knob. The Radio will search for a Radio-Program with the selected Program type when the [SEL] button is pushed. "PTY SEEK" is shown in the Display.

If no station with the selected Program Type can be found, the last tuned station will be selected and "NO PTY" is shown in the Display.

The following program types are available:

- NEWS
- AFFAIRS
- INFO
- SPORTS
- EDUCATE
- DRAMA
- CULTURE
- SCIENCE
- VARIED
- POP-M
- ROCK-M
- EASY-M
- LIGHT-M
- CLASSICS-M
- OTHER-M
- WEATHER
- FINANCE
- CHILDREN
- SOCIAL
- RELIGION
- PHONE IN
- TRAVEL
- LEISURE
- JAZZ
- COUNTRY
- NATIONAL-M
- OLDI ES

- FOLK-M
- DOCUMENT
- TEST
- ALARM

DAB Radio (applicable to DAB feature)

DAB/DAB+ Provides radio programs in digital sound quality.

DAB Radio Selection

To access Digital Audio Broadcast (DAB), press the [SRC] button and select DAB.

DAB Service SCAN

To search for receivable DAB Services, the DAB service SCAN has to be started by pushing [BAND/AST] for 2 sec. "SCAN" is shown in the display.

Tuning a DAB Service

To tune a DAB service, push [<< / >>] to select the next/previous DAB service. "Tuning" is shown on the Display.

Storing DAB Favorites

There are 3 DAB favorite bands available. Press the [BAND] Button to select one of the available DAB Bands. The DAB bands will be changed in the following order:

- DAB1 ->
- DAB2 ->
- DAB3

Push the preset button longer than 2 seconds, to store the station.

Recall Stored Favorites

To recall a stored favorite, push the corresponding preset button.

DAB Service List

To get an overview of receivable DAB services, a DAB Service List can be displayed.

Push [SEL] for 2 sec. to open the DAB Service List. Rotate the [VOL] Button to scroll through the list of receivable stations.

To tune a DAB service, push [SEL]. "Tuning" is shown on the display.

In the case that a Service is temporary not receivable "No Service" will be shown on the display.

Switching between DAB and FM

When the DAB signal quality drops significantly, switch to FM and listen to the service via FM.

Switching between DAB and FM (DABFMLNK) can be disabled via the system settings menu.

USB/MP3/WMA

MP3 is short for MPEG Audio Layer 3 and refers to an audio compression technology standard. This product allows playback of MP3 files. The unit cannot read an MP3 file that has a file extension other than ".mp3". •If you play a non-MP3 file that has the ".mp3" extension, you may hear some noise. In this manual, refer to what are called "MP3 file" and "folder" in PC terminology as "track" and "Album," respectively. Maximum number of directories and files is 65535, including the root directory. Maximum number of files per folder is 1000. The unit may not play tracks in the order of Track numbers. Supports bit rate from 8 to 320 kbps and VBR (Variable Bit Rate).

Note: Supports bit rate from 5 to 384 kbps and VBR (Variable Bit Rate).

USB

USB functions (flash memory type) MP3 music play:

- USB flash memory 2 in 1 support
- FAT 12 / FAT 16 / FAT 32 format supported
- File name: 64 byte / directory (DIR) name: 64 byte / tag name: 30 byte
- Tag (id3 tag ver 2.0) - title/artist/album: 32 byte support.
- USB 1.1 support, USB 2.0 support (For 2.0, speed performance is as USB 1.1)

Note: Not all USB devices are compatible with the unit. USB connector can support maximum work power with 500 mA.

Loading / Removal and Functions of USB Device

Insert a USB device into the USB-slot "Reading" is shown on the Display. MP3 Playback will start immediate afterwards.

Before removing the USB Device switch to another Source by pushing the [SRC] button.

The USB Devices has the following functions:

- **MP3 Playback/Pause** To pause and resume MP3 Playback push button [1>].
- **Next/Previous MP3 Track** To select the next/previous track push the [<>] button.

- **Fast forward/fast rewind** To fast forward/fast rewind the current track push the [<>] button longer than 2 sec.
- **Random Play** To activate random play push the button [4 RND].
- **Repeat** Push the [3 RPT] button to activate repeat Track/repeat directory/repeat all.
- **SCAN** To activate/stop the scan function push the button [2 SCN]. In scan mode all titles are played for 10 sec.

Bluetooth

The Bluetooth allows you to utilize your vehicles built-in audio system for wireless mobile phone or music hands free communication. Some Bluetooth mobile phones have the audio features, and some portable audio players support Bluetooth feature. This system can play audio data stored in a Bluetooth audio device. The vehicle stereo with Bluetooth will be able to retrieve phonebook contacts, received call, dialed call, missed call, incoming calls, outgoing call and listen to music.

Note: Do not leave the microphone on Bluetooth hands free in the places with wind passing such as air outlet of the air conditioner. Leaving the microphone in the aforementioned manner may cause a malfunction.

Note: If left in places subjected to direct sun, high temperature can cause distortion, discoloration which may result in a malfunction.

Note: This system will not operate or may operate improperly with some Bluetooth audio players.

Note: Compatibility of all mobile phones with this unit is not guaranteed.

Note: Audio playback will be set to the same volume level as set during telephone call. The volume level might cause problems, if extreme volume level is set during telephone call.

Hands free Operations

Pairing:

1. Turn on Bluetooth function of your mobile phone.
2. Enter mobile phones Bluetooth setup menu.
3. Search for new Bluetooth devices.
4. Select Bluetooth "Cat Radio" devices from the pairing list on the mobile phone.
5. Enter " 1234 " as the password (The password default setting is " 1234 ").

Note: After pairing successfully, BT and HPF icons will light up. A2DP icon will light up after A2DP connected

Dial Number

Phone dialing, mobile phone dialing, LCD screen displays dialing information.

Unit dialing:

1. Press [SRC] button switch to BT /Audio mode
2. Press [5 D+] to choose the DIAL ON function, press [SEL] button / [<</>>] button and rotate the knob to input dialing numbers.

Transfer Call

You can switch between hands free call and mobile phone call. Press the [5 /] button during call.

Answering a call

You can answer an incoming call by pressing the [5/] button. Press the [6 /] button to reject an incoming call.

Audio Streaming

Audio streaming is a technique for transferring audio data, audio streaming can be processed as a steady, and continuous stream. Users can stream music from external audio players to the stereo wirelessly and listen to the tracks through the speakers. Consult your nearest dealer for more information on the product of wireless audio streaming transmitter offered.

Note: Avoid operating your connected mobile phone while audio streaming, doing so may cause noise or sound choppy on the song playback. Audio streaming may or may not resume after telephone interruption and depends on the mobile phone. The system will always return to Radio mode if audio streaming is disconnected. Be sure to read the chapter "Pairing" before proceeding.

BT /Audio mode (A2DP)

- **Playback/Pause** To pause and resume Playback push button [1>].
- **Next/Previous Track** To select the next/previous track push the [<</>>] button.

Note: Playing order will depend on Bluetooth audio player. When the [<>] button is pressed, some A2DP devices will restart the current track depends on the duration of playback. During music streaming playback, "A2DP and HFP" will be shown on the display. When A2DP device is disconnected, "DISCONN" will be shown on the display Some Bluetooth audio players may not have play / pause synchronized with this unit. Make sure that both device and main unit are in the same play/ pause status in BT /Audio mode.

Dimming

The display and buttons can be dimmed. This radio allows manual or automatic dimming. Select "DIMMING" in the settings menu and select one of the following options:

1. Select "OFF" to disable Dimming.
2. Select "Manual" dimming when the radio is not connected to the vehicles illumination pin.
3. Select "Auto" dimming when the Radio is connected correct to the vehicles illumination-pin.

Brightness adjustment

To adjust your favorite brightness-setting for display- and button brightness select manual mode.

Select Manual dimming to adjust Brightness of Display and Buttons

DAY/ Night Selection

Select DIMMAN and change between day mode and night mode by selecting "DIMDAY" or "DIMNIGHT"

Night Brightness adjustment of display and Buttons

To adjust Night Brightness of the display and buttons, select "DIMNIGHT". Then select, "DIM DISP" and adjust the brightness of the Display accordingly. Then select "DIMNIGHT" and adjust the brightness of the Buttons accordingly.

Day Brightness adjustment of display and Buttons

To adjust Day Brightness of the display and buttons, select "DIMDAY". Then, select "DIM DISP" and adjust the brightness of the Display accordingly. Then, select "DIM KEY" and adjust the brightness of the Buttons accordingly.

Manual Mode

Change between Day and Night Mode by selecting "DIMDAY" or "DIMNIGHT"

Automatic Mode

In automatic mode the display will change automatically between day and night mode when the radio is connected to the vehicles illumination pin.

System Setting Item List

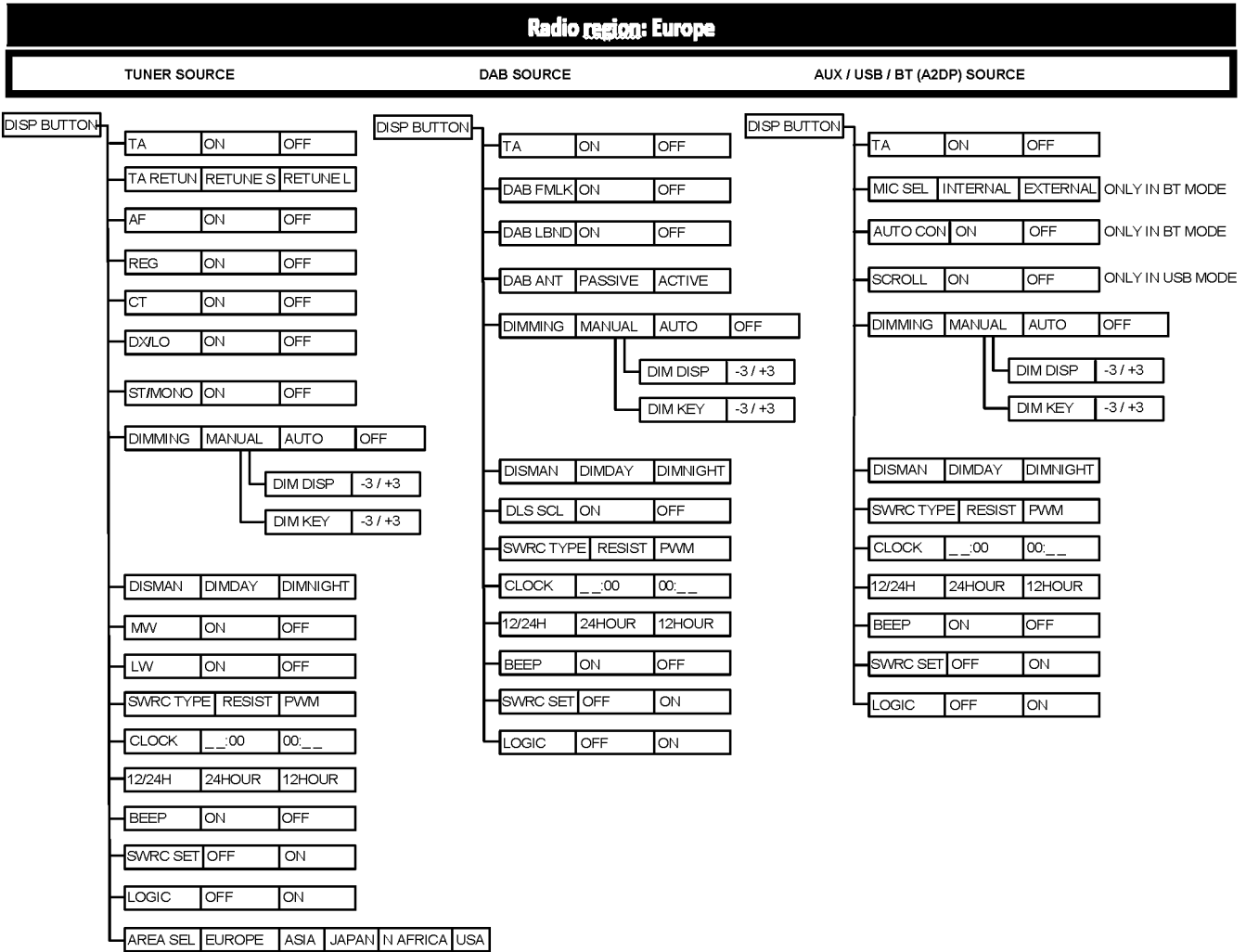


Illustration 6

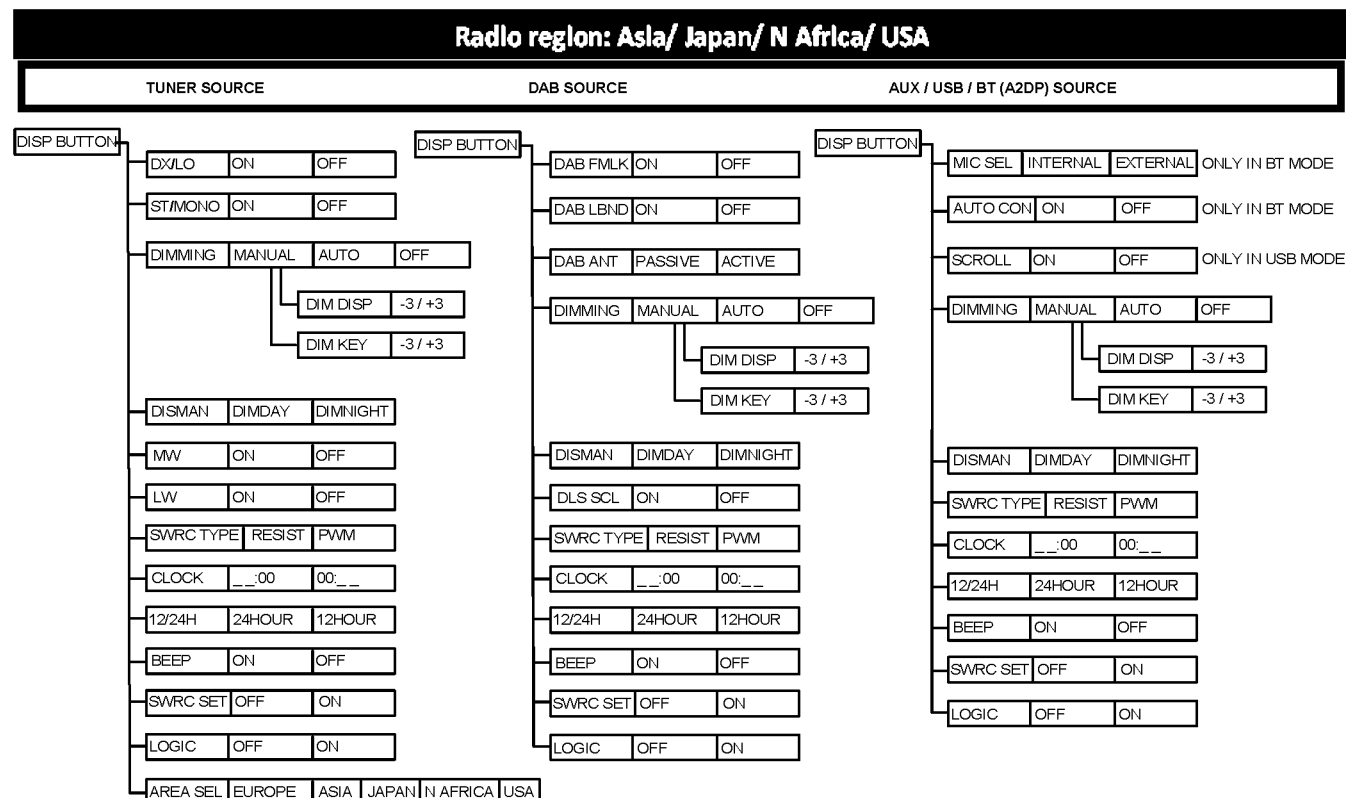


Illustration 7

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AM/FM Tuner Options

The AM/FM tuner has the following options:

- “TA” Enable /Disable automatic switching to FM-tuner mode if there is incoming Traffic announcements.
- “TA Return” Switch back time in the case that Announcement-Signal cannot be detected any more.
- “AF” Enable/Disable automatic selection of best audible frequency in FM-Tuner Mode (RDS).
- “REG” Enable/Disable automatic selection of better audible frequencies that broadcast different regional content.

- “CT” Automatic synchronization of Clock with time received via RDS-Signal.
- “DX/LO” Search Level of AM/FM-Tuner.
- “ST/MONO” Selection of Stereo or Mono output of FM/AM tuner.
- “AREA SEL” To adjust the AM/FM tuner to your region.

DAB Tuner Options

The following features are applicable to DAB feature:

- “DAB FMLINK” Enable /Disable automatic switching to FM-tuner when DAB-Signal drops.
- “DAB LBND” Enable/Disable L-Band Decoding.

- “DAB ANT” Selection of Active or Passive antenna is connected.
- “DLS SCROLL” Enable display of Artist and Song

Bluetooth Options

- “SCROLL” ON: Display ID3 tag information cyclic: Track - Folder -File - Album - Title - Artist - Track.
OFF: Display Track.
- “MIC SEL” Use of integrated Microphone in front panel or external Microphone connected by rear connector.
- “AUTO CON” To disable/enable Bluetooth connection.

Steering Wheel Control Options

The following are the steering wheel control options:

- “SWRC TYPE” Selection of Steering Wheel control type (Resistance / PWM).
- “SWRC SET” To enable/disable steering wheel control.

Dimming Options

The following are the Dimming options:

- “DIMMING” To Select Dimming Mode (OFF, Manual, automatic).
- “DIM DISP” To Adjust Display brightness.
- “DIM KEY” To adjust Button brightness.
- “DIS MAN” To switch between DAY and Night Mode

Other options

- “AM / MW” To enable/disable AM / MW Reception.
- “LW” To enable/disable LW Reception.
- “BEEP” To enable/disable confirmation signal.
- “Logic” To enable/disable ignition logic.
- “Clock” To adjust hours and minutes.
- “12 / 24H” To select 12 / 24 h Clock format.

Electrical Connections

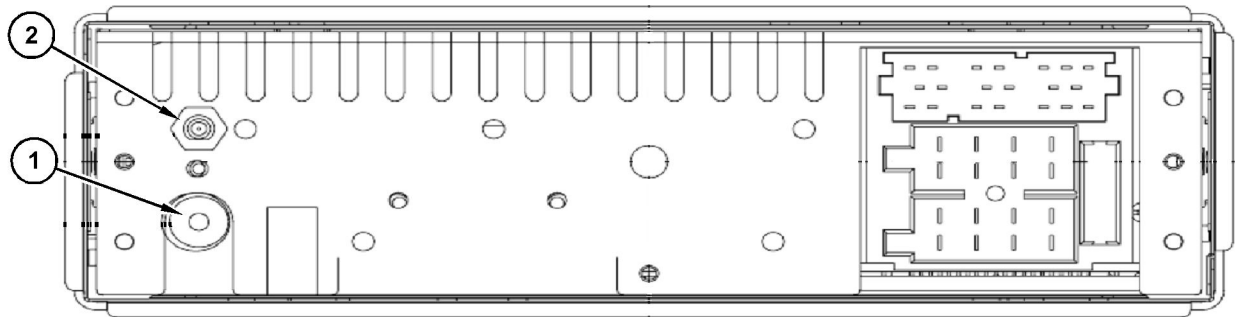


Illustration 8

g06247910

(1)DAB SMB Connector
(2) AM/FM ISO Connector

Tips and Troubleshooting Chart

The following checklist can help you solve some problems which you may encounter when using the unit. Before consulting a service representative, check the connections and follow the instructions in the user manual. Do not use the unit in abnormal condition. Examples of abnormal conditions area as follows, no sound, smoke, or foul smell. The aforementioned examples can cause fire or electric shock. Immediately stop using radio and call the store where your radio was purchased.

Table 6

Problem	Possible Cause	Solution
General		
The unit will not switch on.	vehicle ignition is not on. Cable is not prop- erly connected. Fuse is burnt.	Turn your vehicle key in the ignition. Check cable connection. Replace fuse with a new fuse of the same capacity.
No sound	Volume is set at minimum or the mute func- tion is on.	Check the volume or switch off the mute function.
The unit or screen does not work normally.	The unit system is unstable	Press the RESET button.
Mode Tuner		
Unable to receive stations.	The antenna is not connected properly.	Connect the antenna properly.
Poor quality reception of radio station.	The antenna is not fully extended or broken.	Fully extend the antenna and if broken, re- place with a new one.
Mode USB		
Unable to insert USB device.	The USB device has been inserted the wrong way around.	Insert the other way around.
The USB device cannot be read.	NTFS format is not supported.	Check that the file system is in FAT or FAT32 format. Due to different formats, some mod- els of storage devices or MP3 players may not be read.

Specifications

The following information pertains to specifications of the radio.

General

Power supply :	12-volt DC or a 24-volt DC negative ground according to the right radio variant. (Refer to variants table)
Maximum power output:	41 W x 4 channels (4 Ω) for 12-volt variant
Suitable speaker impedance:	4 Ω
Dimensions (W x D x H):	188 x 114.7 x 58.5 mm
Weight:	0.9Kg

Note: for different bit-rate MP3, ESP time are different;
40 seconds only for bit-rate MP3 file of 128Kbps

FM Stereo Radio

Frequency range:	Refer to AM/FM Tuner table
Usable sensitivity:	< 14 dB μ
Frequency response:	50 Hz – 10 KHz
Stereo separation:	\geq 22dB (1KHz)
Image response ratio:	\geq 40dB
IF response ratio:	\geq 60 dB
Signal/noise ratio:	\geq 50dB

AM/MW) radio

Frequency range:	Refer to AM/FM Tuner table
Usable sensitivity (S/N = 20 dB):	< 35 dB μ

USB Charging:	0.5A 5V
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Illustration 9

g06248106

Table 7

AM/FM tuner	BAND	Received Frequency	Auto Space	Channel Space
American	FM	87.5 - 107.9MHz	200KHz	100KHz
	AM	530 - 1710KHz	10KHz	10KHz
Europe	FM	87.5 - 108.0MHz	100KHz	50KHz
	MW	522 - 1620KHz	9KHz	9KHz
	LW	144 - 288KHz	3KHz	3KHz

(continued)

(Table 7, contd)

AM/FM tuner	BAND	Received Frequency	Auto Space	Channel Space
Asia	FM	87.5 - 108.0MHz	50KHz	50KHz
	AM	522 - 1629KHz	9KHz	9KHz
Japan	FM	76.0 - 95.0MHz	100KHz	100KHz
	AM	522 - 1629KHz	9KHz	9KHz
Latam	FM	76.0 - 107.9MHz	50KHz	50KHz
	AM	530 - 1710KHz	10KHz	10KHz
N Africa	FM	87.5 - 108.0MHz	100KHz	50KHz
	MW	531 - 1602KHz	9KHz	9KHz
	LW	153 - 252KHz	3KHz	3KHz

Table 8

Digital (DAB) Radio			
Frequency range:	DAB Band III: 174.928MHz ~ 239.200 MHz		
	DAB Band L: 1452.960MHz ~ 1490.624 MHz		
Usable sensitivity (RF= 72dBm)	-95dBm		
Frequency response:	20Hz-20KHz		
Stereo separation	≥50dB		
Signal/noise ratio:	≥60dB		
	Item	Min	Max
	Far off selectivity:	42dB	60dB
	Adjacent channel rejection:	35dB	40dB

Note: Specifications and the design are subject to change without notice due to improvements in technology.

Table 9

Bluetooth	
Output power	4 dBm (Class 2)
Frequency band	2.4000 GHz - 2.4835 GHz (ISM Band)
Range	10 m (free space)
Standard	Bluetooth 2.0 specification

Accessories

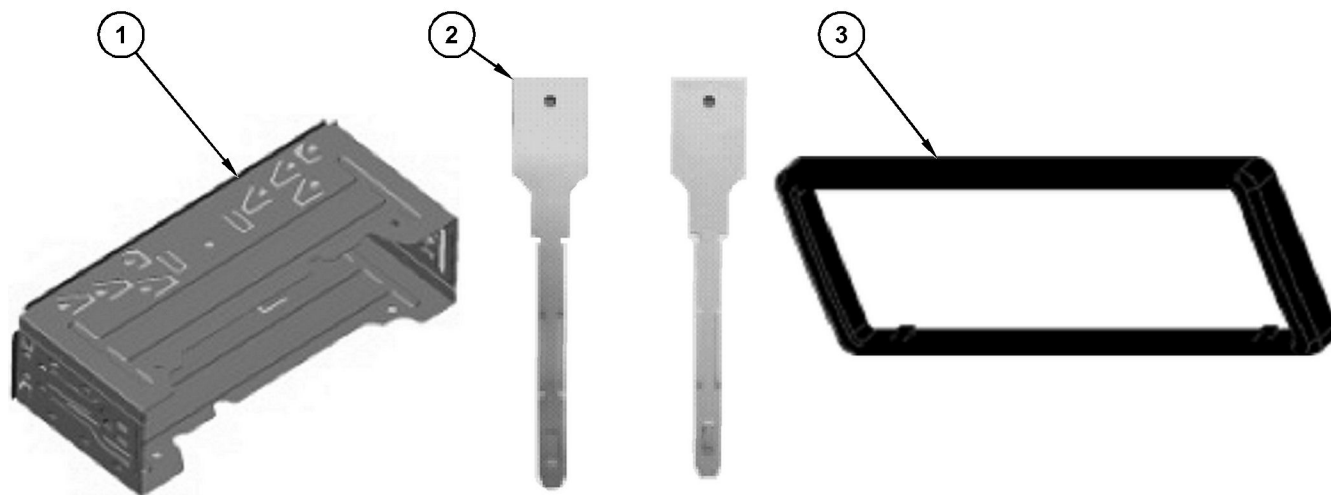


Illustration 10

g06248183

Radio accessories

(1) Metal sleeve

(2) Removal tools

(3) Bezel

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Product and Dealer Information

Note: For product identification plate locations, see the section “Product Identification Information” in the Operation and Maintenance Manual.

Delivery Date: _____

Product Information

Model: _____

Product Identification Number: _____

Engine Serial Number: _____

Transmission Serial Number: _____

Generator Serial Number: _____

Attachment Serial Numbers: _____

Attachment Information: _____

Customer Equipment Number: _____

Dealer Equipment Number: _____

Dealer Information

Name: _____ Branch: _____

Address: _____

	<u>Dealer Contact</u>	<u>Phone Number</u>	<u>Hours</u>
Sales:	_____	_____	_____
Parts:	_____	_____	_____
Service:	_____	_____	_____

