

***avion***

TECHNOLOGY HAPPENS HERE

USER MANUAL

AV-DR-1401

## ITEMS IN YOUR PRODUCT KIT

Be sure that the product package contains the following items:

- Radio Receiver with two (2) remote control
- AC to DC Adapter
- User Manual

DATE OF PURCHASE  
(WITH DEALER'S STAMP)

This product comes with one year warranty valid from date of purchase.

# THANK YOU!

We thank you for choosing Avion's AV-DR-1401 Digital Wireless Radio Receiver. Please read this user manual and instructions carefully before using the radio receiver unit and keep it safely for future reference.

## CARE & PRECAUTIONS

Do not plug in AC adapter while using DRM30 mode.

Keep away from flame sources.

Keep the unit away from water and other liquids. Do not spray or splash water on or near the unit.

Unplug the unit if it is not to be used for a long time.

Disconnect unit from power source during cleaning.

Do not use solvents that may damage unit. Do not spray on the unit.

Use a clean and soft cloth to clean the product.

## WARNING

AC adapter is the main power source. It should not be obstructed during intended use. Never use damaged AC adapter. AC adapter should not be subjected to pulling, twisting or pinching. Do not plug in AC adapter while using DRM30 mode. It might cause network accessibility related errors.

Prolonged exposure to high volumes while using earphone may be harmful.

# CONTENTS

1. Product Specifications
2. About Communication Systems Inc.
3. Introduction to DRM
4. Operating radio for the first time
  - 4.1. Overview about Radio
  - 4.2. Using your radio
    - Turning ON/OFF& Standby Mode
    - Multi-purpose Knob
    - Adjusting the Volume
    - Stereo speaker
    - Headphone
    - Telescopic antenna
    - Micro SD card slot
    - LCD screen
    - DC power input
    - Battery
    - Remote Control
    - Tuning
    - Toggling modes
  - 4.3 Using Remote Control
  - 4.4 Recording
  - 4.5 Auto scan
  - 4.6 Service Mode
  - 4.7 Presets
  - 4.8 Modes
5. Additional Information
  - 5.1 Value added Features
  - 5.2 Upgrading Software
  - 5.3 Troubleshooting
  - 5.4 Warranty
  - 5.5 Feedback

# PRODUCT SPECIFICATIONS

Frequency range	MW: 522–1720 kHz   SW: 2.3–27 MHz   FM: 87.5–108 MHz
DRM bandwidth	4.5kHz, 5kHz, 9kHz, 10kHz, 18kHz
DRM audio	xHE-AAC by Fraunhofer
Audio decode (AM / FM / DRM30)	Mono, Stereo
Text Service	DRM station label / DRM text message
DRM30 AFS	Yes
Station memory (Pre-set)	DRM: 40   AM: 40   FM:40
Tuning	DRM30/ AM (Manual), FM (Scan and Manual)
DRM30 Program Recording	Yes (Instant & Scheduled)
Service Selection	Audio, Text/scrolling messages, Image
Electronic Program Guide (EPG)	Yes
Journaline	Yes
Emergency Alert & Warning	Yes
Slide show	Yes
MP3 playback from Ext. memory	Yes
Recording in MDI / RSCI format	Yes
Schedule Recording based on EPG	Yes

# PRODUCT SPECIFICATIONS

Power input	AC-DC Adapter, 5V 1A
Battery	3.7V @6000mAH, Li-Pol Rechargeable
Battery Back-up	10 Hours
Speakers	3.5" round Stereo speakers, 3 watts (L) +3 watts (R)
Display	3.5" Color LCD screen
Resolution	320 X 240
Micro SD card	Yes
Digital audio out (SPDIF)	Yes
Headphone	3.5 mm stereo jack
Antenna	Ferrite rod antenna / Telescopic antenna
External antenna	50 Ohm for DRM30
Infrared Remote Control	Yes
Keypad	41 keys
Language	English, LCD is Capable of rendering Unicode

## ABOUT AVION® TECHNOLOGIES

Communication Systems Inc. is an Indian Manufacturer, Exporter & Supplier of electronic products. The company manufactures LCD and LED TV Sets, Home Theater Systems, Radios, 3-D Smart TVs, Induction Cookers, Rice Cookers and much more. This wide range of products is marketed under the brand name Avion. Strict adherence to global standards and commitment to offer best possible services to consumers, and compliance with international quality standards helped the company in serving both national and international markets for more than 31 years. In addition to this, Avion possesses modern infrastructural capabilities to design and manufacture high-end products in a cost-effective way.

Apart from serving Indian domestic markets, the company is manufacturing and exporting products to international markets including markets in Egypt, Ethiopia, Uganda, Nigeria, Nepal, Bangladesh and Sri Lanka. All this has been possible due to Avion's modern infrastructure combined with a highly skilled and dedicated team of the employees. The company believes in timely delivery of the premium quality products which provides Avion the cutting edge over the competition.

The logo for Avion Technologies, featuring the word "avion" in a bold, italicized, lowercase sans-serif font. The letters are a light gray color and are set against a background of a repeating diamond-shaped pattern.

## ABOUT DRM

The Digital Radio Mondiale (DRM or, 'world-wide digital radio') Broadcasting system is high quality digital audio broadcasting alternative of the existing analogue radio broadcasting in AM-FM bands. DRM has been initiated by the broadcasters with ample support in the form of participation and guidance from the manufacturers of the transmitters and the receivers. Furthermore, this initiative has been strongly supported and guided by various regulatory bodies. There has been ample of international regulatory support for the transmission in the form of the necessary recommendations given by International Telecommunication Union (for more information on ITU, please visit <http://www.itu.int/en/history/Pages/ITUsHistory.aspx>).

The DRM is capable of providing a wide array of features and facilities which analogue broadcasting system is not capable of, such as text messages, images, slideshow, and Journaline<sup>®</sup>. DRM30 Modes are designed to utilize AM broadcast bands below 30 MHz, while DRM+ Modes utilize 30 MHz to VHF Band III. [DRM+ is currently not available with this Radio Set.]

(For more information on DRM, please visit [www.drm.org](http://www.drm.org))





#### 4.1 Overview about the radio

This AV-DR-1401 Digital Radio receiver is manufactured in accordance with the international quality standards involving high quality components and latest technology. In addition to this, xHE-AAC (Extended High-Efficiency Advanced Audio Coding) technology (licensed by Fraunhofer®) has been implemented in this radio set. It significantly improves the audio quality of music and speech. The combination of high quality audio, low bit rates and audio-specific metadata support makes it the perfect audio broadcasting solution.

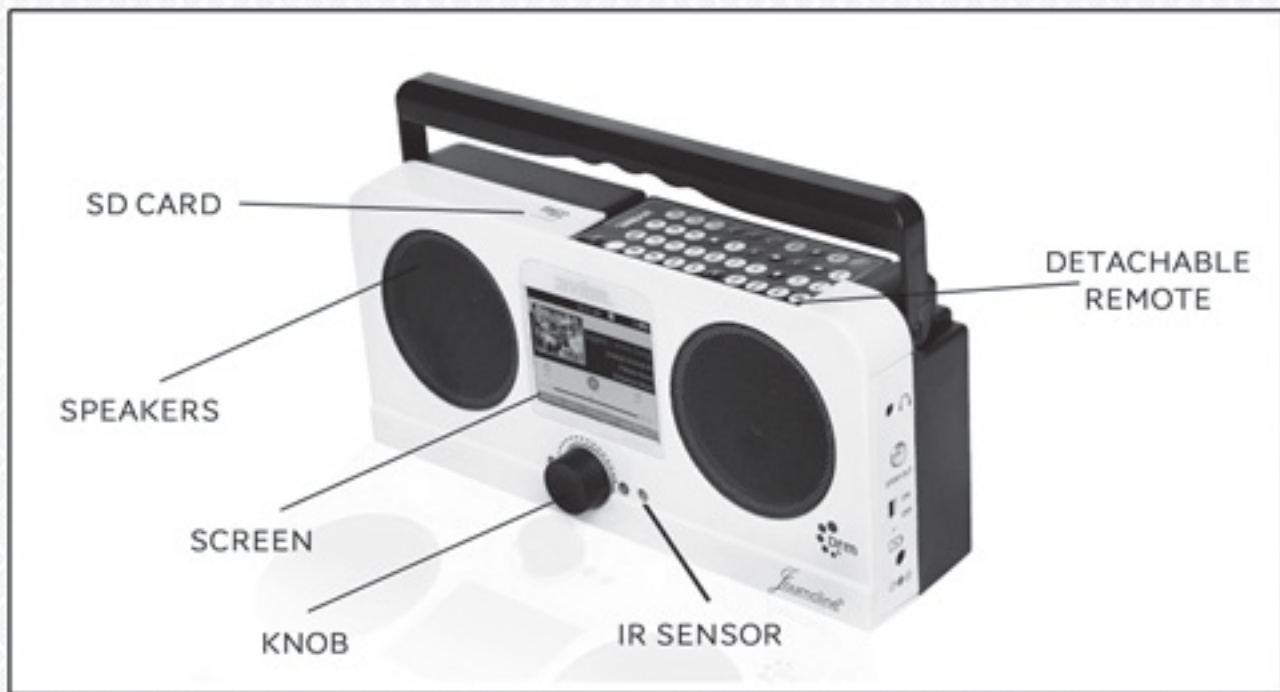


FIGURE 1

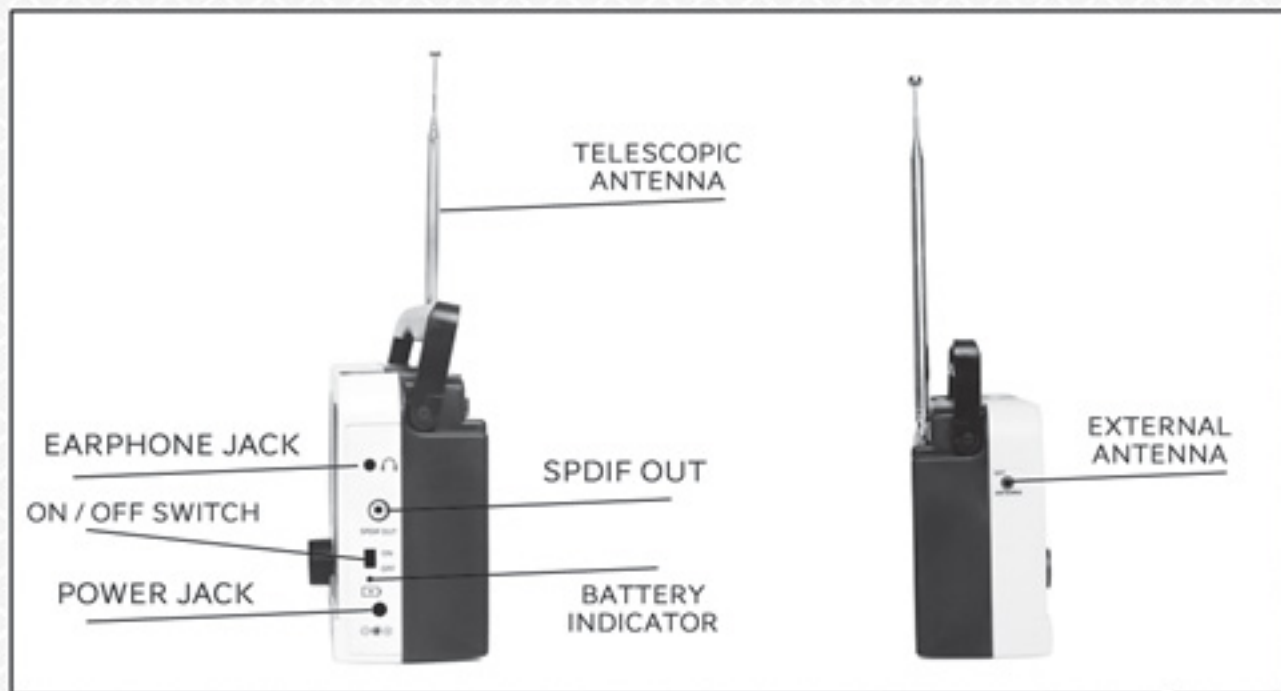


FIGURE 2

FIGURE 3



FIGURE 4

## Turning ON/OFF & Standby mode

Side panel of the radio set contains ON/OFF switch. Once you set the ON/OFF switch at ON position, red light appears beside the multi-purpose knob, which indicates the radio is in standby mode. Then press the POWER icon from remote control (or press the multi-purpose knob) to switch on the radio. You will see the LED turning into green. This means now you can choose to listen from AM, FM, DRM30 and MM mode.

Similarly, when you press the POWER icon again, the radio will turn into stand-by mode. In stand-by mode, the scheduled recording will happen automatically once set in EPG (see scheduled recording under section 4.4 Recording).

When you turn-on your radio for first time, you will have to select a frequency band/channel you want to listen. On switching on the radio set for second time, last played mode will pop-up automatically.

Before turning on your radio unit for first time, please plug-in the AC Adapter into an electrical outlet to charge the battery completely. Once the battery is fully charged, the charging LED will convert into GREEN color (from BLUE) it will show 100%. Using adapter for minimum 5 hours continuously charges the set and creates power backup of about 10-12 hours.

## MULTI PURPOSE KNOB

This knob (as shown in the Figure 1) can be used to adjust the volume (to increase or decrease the volume) or to select the frequency range. You can switch between its functions by gently pressing the multi-purpose knob. On pressing this knob for 2-3 sec it POWER's UP/DOWN the radio itself.

## ADJUSTING THE VOLUME

Volume can be adjusted by rotating the multi-purpose knob. Volume can also be adjusted using remote control. (See Figure 5.)

## STEREO SPEAKER

Radio set contains 3.5" round stereo speakers (with 3 watts left and right, each, speaker) which produce superior crystal clear quality audio, with ability to produce mono and stereo sounds equally well. They provide a great aesthetic experience to the listeners.

## HEADPHONE

The side panel of the radio set includes a 3.5mm stereo audio jack. This audio jack allows users to plug in headphones and listen to the broadcast privately.

## TELESCOPIC ANTENNA

Telescopic antenna facilitates better reception. This is 50 ohm external antenna for DRM30 and FM. Being compact, it can easily be folded when not in use.

## MICRO SD CARD

This Micro SD card slot enables users to plug in their Micro SD cards and listen to the music of their choice. Images on the Micro SD card can also be viewed as a slide show on the LCD screen of this radio set. Micro SD card also used for playing DRM recorded files in DRM mode.

## LCD SCREEN

The 3.5" Color LCD screen enables user to view the menu, information about the modes, text messages (still/scrolling) of Journaline feature, Emergency Warning Alert, and preview of images from Micro SD card etc. The LCD screen has a resolution of 320 x 240 and is capable to render 10 million colors.

## DC POWER INPUT

This radio set works of DC power supply. In countries where mainline current is AC or alternating current, a power adapter is needed for conversion of AC to DC. An AC-DC Adapter (5 V, 2 A) is made available to users with the radio set for same. Using adapter for minimum 5 hours continuously charges the set completely and creates power backup of about 10-12 hours.

## BATTERY

The unit contains one 3.7 V, Li-Pol rechargeable battery. Apart from using mainline current as power supply, the radio set is programmed to work on batteries. The 6000 mAH Li-Pol rechargeable battery gives it a power back-up of 10 hours. For fast charging always put radio in Stand By mode, this way the battery is charged faster.

## REMOTE CONTROL

The set comes with a detachable Infrared remote control which is mounted on top right panel of the radio. You can use it as a keypad embedded on the radio, or can control various functions through it by using its infrared remote controlling feature. This remote control has various operations which are explained in section 4.3 (Using remote control).

## TUNING

You can select the AM/FM/DRM30 mode by pressing MODE button on remote control and can manually tune into any frequency that you want to listen. You can also enter the frequency band of a mode by using remote (number-pad).

You can auto scan the frequencies by pressing SCAN button as well. Auto scan is easy in case of FM due to its narrow frequency range (87.5-108 MHz) but this feature is not suitable for DRM30 and AM mode (for these you have to select frequencies manually or from already used frequencies).

## SWITCHING MODES

Users can view LCD screen for information regarding the mode being played on the top left corner. Modes (AM/ FM/ DRM30/ MM or multimedia) can be changed by pressing the MODE button on the remote of the radio set.

\*(Refer to section 5 for information about modes)

4.3

## USING REMOTE CONTROL

FIGURE 5



**1. POWER BUTTON:** After switching on your radio (keeping it on stand-by mode, flashing red LED) through the ON/OFF switch on the side panel of the radio set, you can turn-on your radio (turning the LED into green) by pressing Power Button button. You can choose to set your radio on stand-by mode by pressing Power Button button again, when you do not want to listen any broadcast but still want to keep you radio set at stand-by mode. For fast charging always put radio in Stand By mode, this way the battery is charged faster.

**2. MODE:** By pressing Mode button again and again, you can toggle between various modes (AM/FM/DRM30/MM or multimedia) and can choose any mode you wish.

**3. SETUP:** This feature enables the user to adjust Display, Clock, setting Alarm, upgrade firmware, and to know about Avion. Press Setup, a screen will appear with tabs namely DRM, Display, Clock, Alarm, Firmware, and About. You can change/adjust the setting by the use of arrow keys and OK button.

**4. MUTE:** You can mute your radio set, by pressing Mute button. Pressing Mute button again will restore the previously set volume.

**5. SCAN:** This means Auto Scan. After selecting a mode, you can auto scan the frequencies for that mode by pressing SCAN button. Auto scan is easy in case of FM due to its narrow frequency range (87.5-108 MHz) but this feature is not suitable for DRM30 mode and AM mode so you have to choose their frequencies by selecting them manually.

**6. DATA/AUDIO:** This feature for activating Journaline service. By pressing this button you can receive content from Journaline service and can listen the audio programs at the same time. When you press it second time, you will be taken back to the screen accompanied with the channel you are currently listening.



**7. BAND:** By pressing BAND, you can select either Medium Wave or Short Wave services. A list will appear when you press this button. This list will be in ascending order and you can select the desired frequencies from MW or SW. You can use saved stations with this button.

**8. SERVICE:** DRM30 technology enables broadcasters to send three audio signals accompanied by one text or visual signal, at max, on one particular frequency. Service mode enables users to toggle between these three audio and one visual signal as per their choice. Service mode can be switched on and off by pressing SERVICE button on the remote control.

**9. BACK:** Pressing BACK button takes you back to the previous screen. This shortcut enables you to access the previous channel easily.

**10. AFS:** This is called Alternate Frequency Switching. If any program is being broadcasted on more than one frequency, then by pressing AFS button, receiver can automatically switch to the frequency which has best signal for that location. If any program is being broadcasted on more than one frequency, then you will see A symbol on your screen which means this feature can be used for that specific program.

**11. EPG:** This is known as Electronic Program Guide. By pressing EPG button, a digital guide to scheduled radio programs opens at the LCD display. The user can then navigate, select, and discover content (through OK/up arrow/down arrow/left arrow/right arrow buttons on the remote control) by time, title, channel, genre, etc. [The EPG structure and transport protocol have been standardized by ETSI.] This service is not available with this radio set.

**12. Arrows and OK:** The user can navigate through these arrow buttons. Once you decide to go to the selected item, just press OK.

**13. PREVIOUS/BACKWARD:** In multimedia mode, press this button to jump to the previous song. If you will press and hold this button while a song is playing, then it will take you to a backward point of the track.

**14. PLAY/PAUSE:** In multimedia mode, press this button to play or pause a song.

**15. NEXT/FAST FORWARD:** In multimedia mode, press this button to jump to the next song. If you will press and hold this button while a song is playing, then it will take you to a forward point of the track.

**16. SHUFFLE:** The function of this button is same to the shuffle button, generally, comes with most music players. In multimedia mode, press this button to shuffle ON/OFF of the songs in the playlist or playing folder you are currently listening, so that you can listen the songs in random order.

**17. FILES/LIST:** This feature enables you to go the files and lists of recorded programs, which were stored in the Micro SD card through instant/scheduled recording. Recorded program can be identified by it's name. When you record any program, it gets stored in the Micro SD card in format that starts with date and time of the program. You can change this name, by inserting your Micro SD card into a PC and by renaming it. When you press this button, it takes you to the files and list of the recorded programs and then you can go up and down through arrow keys and press OK to select a program. Also, on pressing this button, you can clear any wrong frequency that you might have entered by mistake.

**18. STOP:** In multimedia mode, press this button to stop.

**19. VOL+/VOL-:** You can press these buttons to increase (Vol+) or decrease (Vol-) the volume.

**20. REC:** This is the Record button. If you want to record an ongoing program, press this button to start recording it. If you want to record any future broadcast, at first select the program (which you want to record) through EPG, and then press REC. If your radio is on stand-by mode at the time of broadcast, it will be recorded automatically, even if you forget that you chose this option. Recorded program will be stored in the Micro SD card. Recording time depends on the free/available space. File will be stored in .dcp or .mdi format with a name that will start with date and time of the program. You can change this name, by inserting your Micro SD card into a PC and by renaming it. Furthermore, this feature records and stores the complete broadcast (i.e. audio as well as text and/or images etc.).

**21. NUMERIC KEYPAD:** You can enter any specific frequency for a given mode to listen to it. This gives you a manual tuning option.

**22. DELETE/STORE:** If you want to add a channel/frequency as your favorite, then tune to that specific channel/frequency and press DELETE/STORE button (for 3 seconds) and that channel/frequency will be stored as your favorite. If you want to remove any channel/frequency from your favorites' list, select that specific channel/frequency and press this button (for 3 seconds) and that channel/frequency will be removed (deleted) from your favorites' list.

**23. BRIGHTNESS ADJUSTMENT:** This feature enables you to adjust (increase/decrease) the brightness of the screen.

**24. INFO:** Press this button while listening to any channel/frequency, the lower portion of the LCD screen will display the information regarding that channel/frequency.

## 4.4 RECORDING

You can record any broadcasted program through two ways:

(a) Instant Recording: If you wish to record an ongoing program, press this button and recording will start instantaneously. The recording is stored in the memory card inserted on the Micro SD card slot. Once the program is recorded, you can hear it whenever you wish to.

(b) Scheduled Recording: If you want to record any future broadcast, select the program (which you want to record) through EPG, and then press REC. If your radio is on stand-by mode at the time when that program is scheduled to be broadcast, it will be recorded and stored in the memory card inserted on the Micro SD card slot automatically, even if you forget that you chose this option. Once the program is recorded, you can hear it whenever you wish to.

Recorded file (either through instant recording or by scheduled recording) will be stored in .dcp or .mdi format with a name that will start with date and time of the program. You can change this name, by inserting your Micro SD card into a PC and by renaming it. Recording time depends on the free/available space. Furthermore, this feature records and stores the complete broadcast (i.e. audio as well as text and/or images etc.).

## 4.5 AUTO SCAN

Auto Scan feature enables radio set to scan signals of all the radio channels received by it for a selected mode. After selecting a mode, you can auto scan the frequencies for that mode by pressing SCAN button. Auto scan is easy in case of FM due to its short frequency range (87.5-108 MHz) but this feature is not suitable for DRM30 mode and AM mode so you have to choose their frequencies by selecting them manually.

## 4.6 SERVICE MODE

DRM technology enables broadcasters to send three audio signals accompanied by one text or visual signal on one particular frequency. Service mode enables users to toggle between these three audio and one visual signal as per choice. Service mode can be switched on and off by pressing SERVICE button on the remote control.

## 4.7 PRESETS

This unit supports minimum 120 saved stations: minimum 40 for AM, minimum 40 for FM and minimum 40 for DRM30.

**Saving stations:** If you want to add a channel/frequency as your favorite, then tune to that specific channel/frequency and press DELETE/STORE button (for 3 seconds) and that channel/frequency will be stored as your favorite. If you want to remove any channel/frequency from your favorites' list, select that specific channel/frequency and press DELETE/STORE button (for 3 seconds) and that channel/frequency will be removed (deleted) from your favorites' list.

**Using saved stations:** Select a mode (AM/FM/DRM30). Press Band button. Navigate through the list and press OK after selecting the desired station, or press the number of the favorite station from keypad.

## 4.8 MODES

Avion's AV-DR-1401 digital radio receiver allows you to access four different modes:

1. AM MODE: 2.3-27 MHz [Short Wave (SW)] & 522-1720 kHz [Medium Wave (MW)]

2. FM MODE: 87.5 to 108 MHz

3. DRM30 MODE: DRM30 Frequencies: SW: 2.3-27 MHz; MW: 522-1720 kHz; LW: 150-288 kHz

4. MM MODE: The Music and Media mode (use of Micro SD card etc.) has gained popularity in the past few years as the music and media carrying devices like memory cards, flash drives, pen drives etc. have been excessively used by the people. The Avion's AV-DR-1401 digital radio receivers enables the users to play songs and access media or visuals stored in the Micro SD cards (memory cards). You can also store and play your radio recording through this mode.

## 5.1 VALUE ADDED FEATURES

- AM , FM, DRM30 & Multimedia Mode
- Data (such as text messages & images)
- Electronic Program Guide (EPG) is a digital guide to scheduled radio programs
- News Service Journaline (The user is provided with a selection of information topics and sub-topics, from which s/he can interactively select those pieces s/he is currently interested in)
- Program associated data, textual content description or even independent services such as traffic information, weather information & market updates
- AFS (Alternate Frequency Switching) ensures that if any program is being broadcasted on more than one frequency (indicated by A symbol appearing on the screen), and allows the receiver to dynamically select the best signal
- Easier tuning e.g. automatic switching between different transmitters
- Instant Recording and EPG Scheduled Recording feature
- Enhanced and improved sound quality, with xHE-AAC code implementation (the most advanced codec from Fraunhofer )
- Engineering parameters (MER, SDC, QAM, AGC, MODE = A/B/AB/D, RMS, Gain = Auto/Manual)

## 5.2 UPGRADING SOFTWARE

1. Kindly, follow these steps to upgrade the software:
2. Switch on the radio and insert Micro SD card in the Micro SD slot.
3. Go to MM mode by using the MODE key and wait for 2 seconds.
4. Restart (switch off it and then switch on) the radio now.
5. Press SETUP key and go to FIRMWARE.
6. Press OK to YES appeared on the screen.
7. Once the Firmware upgradation proces starts, do not interfere by pressing any key. Kindly wait for at least 1 minute as it is the upgrading time.
8. After finishing this ugrading process, press OK to the EXIT key appeared on the screen.
9. Now change the mode and turn off the radio by pressing POWER key on the remote and then finally turn Mains Off from the side of the radio.
10. Now the radio is upgraded with new firmware with mentioned changes on the [www.avionelectronics.in](http://www.avionelectronics.in) tech support page.
11. Now switch on the radio and here is your new upgraded system with mentioned firmware version in it in the SETUP menu.



## 5.3 TROUBLESHOOTING

### Screen hanging problem

Kindly, restart the radio.

### Screen hanging problem while changing the modes

While changing the Modes, kindly wait for 3 seconds to allow the screen to let itself change into another mode.

### While tuning in DRM for MW band. if signal is not coming properly

Do the following: (i) Press the INFO key and see the display with lots of Engineering parameters displayed at the bottom of the screen. (ii) Now you can see Vol & Gain, and then press UP/DOWN keys to navigate the volume up/down in such a way that the value of gain starts to go down till the point from where the gain again starts increasing. Stop changing GAIN at that point and you may notice that signal becomes right on the track once again.

### Entering frequency in DRM mode, signal locks but audio output is not constant

Adjust the navigation buttons top & down and monitor the values of Volume in the info screen till the point where the GAIN starts increasing and here you will find the best audio output.

For more info & assistance, please visit our website ([www.avionelectronics.in](http://www.avionelectronics.in))  
or email us at [care@avionelectronics.in](mailto:care@avionelectronics.in).

## 5.4 WARRANTY

Keep the receipt as evidence of purchase of the product. Communication Systems Inc. assures the user that the product will remain free from all defects in materials or workmanship in the course of normal consumer usage for one year from the original date of purchase. Only manufacturing and design defaults are covered under this warranty. The barcode must be kept intact to avail the warranty. If the user removes the barcode from the radio receiver set, then they will not be able to get warranty. The warranty is non-transferrable and DOES NOT include damages due to accident, negligence or connection to excessive voltage (lightning, static electricity or power surges) or any modifications or repairs made to the product, not authorized by us or that the case has been removed, or general wear & tear.

**Warranty Registration:** To validate the warranty, the purchaser of the product must register their purchase either through postal mail to us within three months of purchase, or via online registration at <http://www.avionelectronics.in/>.

Our mailing address: 9/50A, Kirti Nagar Industrial Area, New Delhi - 110015, India.

Contact: +91-7053127547



## 5.5 FEEDBACK

If you have further queries, suggestions or need technical support, kindly contact us:

Email: [care@avionelectronics.in](mailto:care@avionelectronics.in)

Website: <http://www.avionelectronics.in/>

Address: 9/50A, Kirti Nagar Industrial Area, New Delhi - 110015, India.

Phone: +917053127547



NewsService  
*Journaline*<sup>®</sup>

[www.avionelectronics.in](http://www.avionelectronics.in)

