



JB Systems USB3.1-RDS CD Player User Manual

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JB Systems USB3.1-RDS CD Player User Manual



DISPOSAL OF THE DEVICE

Dispose of the unit and used batteries in an environment-friendly manner according to your country’s regulations.

OPERATION MANUAL

Thank you for buying this JB Systems® product. To take full advantage of all possibilities, please read these operating instructions very carefully.

FEATURES

- The USB3.1-RDS combines different audio sources in a small 19"/1 housing, perfect for all kinds of fixed installations such as pubs, shops, hotels, restaurants, shopping malls, ...:
- AM / FM radio: with RDS and 18 station presets
- Slot-in CD player: plays both audio CDs and MP3/WMA files (supports CD-R and CD-RW disks)
- USB / SD-card media player: supports USB sticks and SD/SDHC cards up to 64GB
- Support for WMA and MP3-tracks up to 48kHz / 320kbps
- LCD-display shows FM RDS-station names and ID3-tags (title, artist, ...) for MP3 and WMA-tracks
- Different playback modes: normal, random, repeat one/folder/all.
- 2 fixed + 1 combined RCA/cinch output:
- Perfect for use in multi-zone installations: FM radio and media/CD player can operate simultaneously and send different music to their separate outputs!
- For simple installations a combined "tuner & media/CD-player" output with volume control is available.
- The RS-232 input makes remote control by for example "home automation systems" possible.
- 24Vdc emergency backup supply on EuroBlock connector.

BEFORE USE

- Before you start using this unit, please check if there's no transportation damage. Should there be any, do not use the device and consult your dealer first.
- To the ant: To st dey te let our factory in perfect condition as well packaged It is any due necessary by mishandling is not subject to warranty.
- The dealer will not accept responsibility for any resulting defects or problems caused by disregarding this user manual.
- Keep this booklet in a safe place for future consultation. If you sell the fixture, be sure to add this user manual!
- To protect the environment, please try to recycle the packing material as much as possible.

Check the contents

Check that the carton contains the following items:

- USB3.1-RDS player
- Operating instructions
- 1 power cord
- 1 FM antenna
- 4 rubber foot stickers
- 4 rack mount screws

CAUTION

- To reduce the risk of electric shock, do not RISK OF ELECTRIC SHOCK remove the top cover. No user-serviceable parts inside.
- Refer servicing to qualified service personnel only. the or presence of an-insulate dangerous the go latera he proe is intended tre that may be of sufficient magnitude to constitute a risk of electric shock.
- The exclamation point within the equilateral triangle is intended to alert the user to the presence of important operation and maintenance (servicing) instructions in the literature accompanying this appliance.

- This symbol means: indoor use only
- This symbol means: Read instructions
- This symbol means: Safety Class I appliance
- This appliance must be earthed to comply with safety regulations.
- To prevent fire or shock hazards, do not expose this appliance to rain or moisture.
- To avoid condensation to be formed inside, allow the unit to adapt to the surrounding temperatures when bringing it into a warm room after transport.
- Condensation sometimes prevents the unit from working at full performance or may even cause damage.
- This unit is for indoor use only.
- Don't place metal objects or spill liquid inside the unit. No objects filled with liquids, such as vases, shall be placed on this appliance.
- Electric shock or malfunction may result. If a foreign object enters the unit, immediately disconnect the main power.
- No naked flame sources, such as lighted candles, should be placed on the appliance.
- Don't cover any ventilation openings as this may result in overheating.
- Prevent use in dusty environments and clean the unit regularly.
- Keep the unit away from children. Inexperienced persons should not operate this device.
- The maximum safe ambient temperature is 40°C. Don't use this unit at higher ambient temperatures.
- The minimum distance around the apparatus for sufficient ventilation is 5cm.
- Always unplug the unit when it is not used for a longer time or before you start servicing.
- The electrical installation should be carried out by qualified personnel only, according to the regulations for electrical and mechanical safety in your country.
- Check that the available voltage is not higher than the one stated on the rear panel of the unit.
- The socket inlet shall remain operable for disconnection from the mains.
- The power cord should always be in perfect condition. Switch the unit immediately off when the power cord is squashed or damaged.
- It must be replaced by the manufacturer, its service agent or similarly qualified persons to avoid a hazard.
- Never let the power cord come into contact with other cables!
- When the power switch is in the OFF position, this unit is not completely disconnected from the mains!
- To prevent electric shock, do not open the cover. Apart from the mains fuse, there are no user-serviceable parts inside.
- Never repair a fuse or bypass the fuse holder. Always replace a damaged fuse with a fuse of the same type and electrical specifications!
- In the event of serious operating problems, stop using the appliance and contact your dealer immediately.
- Please use the original packing when the device is to be transported.
- Due to safety reasons, it is prohibited to make unauthorized modifications to the unit.

INSTALLATION GUIDELINES

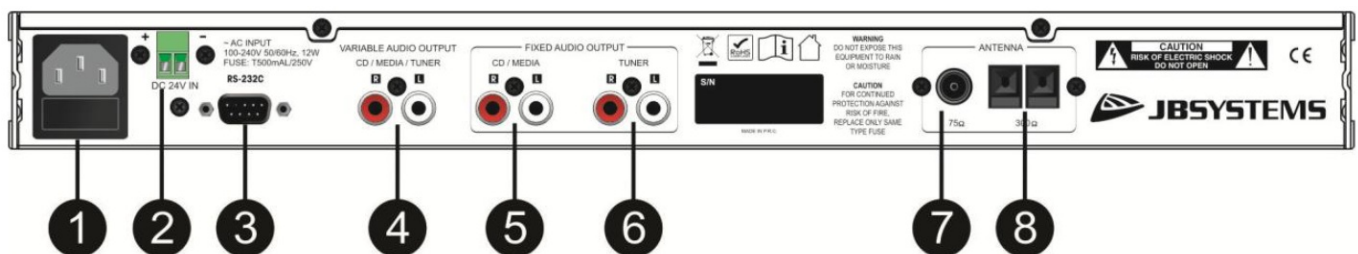
- Placing and using the unit for long periods near heat-generating sources such as amplifiers, spotlights, etc. will affect its performance and may even damage the unit.
- Take care to minimize shocks and vibrations during transport.
- When installed in a booth or flight case, please make sure to have good ventilation to improve heat evacuation of the unit.

- To avoid condensation to be formed inside, allow the unit to adapt to the surrounding temperatures when bringing it into a warm room after transport. Condense sometimes prevents the unit from working at full performance.
- Choose the place where you put your installation very carefully. Avoid the presence of heat sources. Avoid places with vibrations or places that are dusty and humid.
- The player will work normally when installed on a surface with max. 15° inclination.
- Be very careful while handling CDs, do not touch them with wet or dirty hands. Dirty discs must be cleaned with specially designed cloth and cleaning products.
- Do not use CDs that are badly damaged (scratched or deformed) they can damage your appliance.
- To prevent fire or shock hazards do not expose this appliance to rain or moisture.
- To prevent electric shock, do not open the top cover. If a problem occurs, contact your dealer.
- Do not place metal objects or spill liquid inside the player. Electric shock or malfunction may result.
- This player uses the semiconductor laser. To allow you to enjoy music at a stable operation, it is recommended to use this in a room of 5°C – 35°C.
- The compact disc player should not be adjusted or repaired by anyone except properly qualified service personnel.
- This unit may cause interference to radio and television reception.

CLEANING THE PLAYER

Clean by wiping with a polished cloth slightly dipped with water. Avoid getting water inside the unit. Do not use volatile liquids such as benzene or thinner which will damage the unit.

CONNECTING THE UNIT



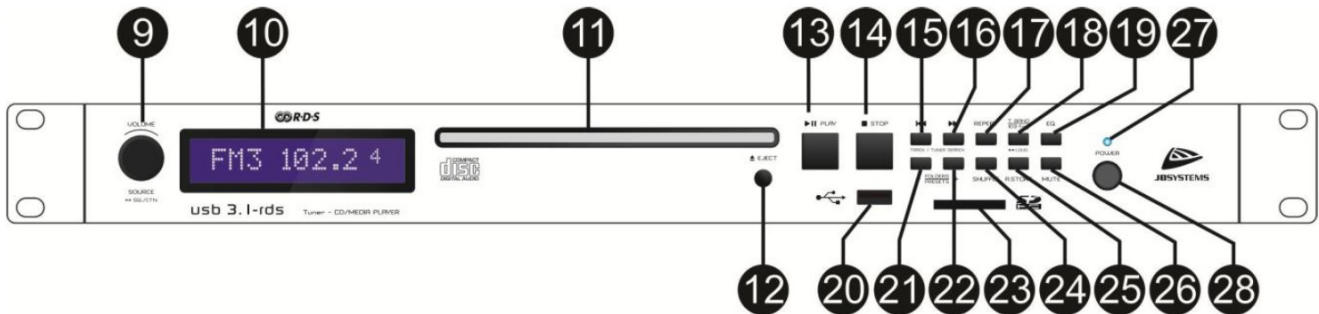
1. MAINS input with IEC socket and integrated fuse holder: connect the supplied main cable here. Never repair a fuse or bypass the fuse holder. Always replace a damaged fuse with a fuse of the same type and with the same electrical specifications (T500mA /250V)
2. DC 24V input connector: can be used to connect your backup power supply (if needed)
3. RS-232 connector: can be used to control the unit via external hardware so the unit can be integrated into automated systems, etc. You can find the list of commands on the last page of this manual.
4. Variable Audio Output: This combined output sends out the audio signal of the CD player, the USB or SD media player and the Tuner
5. Fixed Audio Output CD/MEDIA: This output will only send the audio signal of the CD player and the USB or SD media player. It doesn't include the audio signal of the Tuner. This means you can use 2 sources at the same time (for multi-zone applications) and send the signal of the CD or USB / SD media player to one room or zone, while the audio signal of the tuner can be sent to another room or zone.
6. Fixed Audio Output Tuner: This output will only send the audio signal of the Tuner. It doesn't include the audio signal of the CD player and the USB or SD media player. This means you can use 2 sources at the same time

(for multi-zone applications) and send the signal of the CD or USB / SD media player to one room or zone, while the audio signal of the tuner can be sent to another room or zone.

7. 75 Ohm Antenna connection: can be used to connect the supplied FM antenna (or another FM antenna) 300 Ohm Antenna connection: can be used to connect an AM antenna

CONTROLS AND FUNCTIONS

8. Function rotating/push button: This button has 3 different functions:



9. Turn the button to change the output level of the player Push the button shortly to toggle between the different players: Radio, CD, USB and SD/SDHC Keep the button pressed for about 3 seconds to toggle between the 2 available playback modes:
10. SINGLE PLAY: when you press the play button, only 1 song will be played. The player stops at the end of each track and waits at the beginning of the next track.
11. NORMAL PLAY: the complete CD or USB storage will be played without interruption.
12. LCD Display: Shows all the important information needed during playback. Disc loading slot to load a CD, slide it gently into the slot with the printed side facing up. Halfway the CD will automatically be pulled inside, don't press the CD in the slot with force, this will damage the loading mechanism! Only use standard-size CDs ($\varnothing=12\text{cm}$), and never try to insert a mini CCD with or without an adapter! Eject Button: press this button to eject the inserted CD.
13. PLAY/PAUSE button:
 - In CD, USB or SD/SDHC mode: every time you press the PLAY/PAUSE button the player changes from play to pause or from pause to play.
 - In AM/FM radio mode: keep the button pressed for about 3 seconds to store the current radio station as preset 1 of the selected band.
14. STOP Button :
 - In CD, USB or SD/SDHC mode: Press this button to stop the playback of the current track and return to the very first track on your media support.
 - In AM/FM radio mode: keep the button pressed to store the current radio station as preset 2 of the selected band.
15. PRE Button :
 - In CD, USB or SD/SDHC mode: this button has 2 functions:
 - Press the button shortly to go back to the starting point of the track. If you press several times, you can skip to the previous songs.
 - Keep the button pressed to navigate backwards in the current song
 - In AM/FM radio mode:
 - Press the button shortly to activate the Auto Seek mode. The tuner will search for the next strong radio signal by exploring the frequencies downwards.
 - Keep the button pressed for about 3 seconds: the tuner will go into Manual Seek mode. Each time you

press this same button shortly, the frequency will now decrease by one step. You can use the NEXT button to increase the frequency by one step. If the PRE or NEXT buttons are not used for a while, the tuner will return to its initial Auto Seek mode for your next commands.

16. NEXT Button :

- In CD, USB or SD/SDHC mode: this button has 2 functions:
- Press the button shortly to go to the next track.
- Keep the button pressed to navigate forward in the current song
- In AM/FM radio mode:
- Press the button shortly to activate the Auto Seek mode. The tuner will search for the next strong radio signal by exploring the frequencies upwards.
- Keep the button pressed for about 3 seconds: the tuner will go into Manual Seek mode. Each time you press this same button shortly, the frequency will now increase by one step. You can use the PRE button to decrease the frequency by one step. If the PRE or NEXT buttons are not used for a while, the tuner will return to its initial Auto Seek mode for your next commands.

17. REPEAT Button :

- In CD, USB or SD/SDHC mode: press the button shortly to toggle between the available repeat modes:
- RPT ONE (REPEAT ONE): the same track will be played and repeated continuously
- RPT FOLD (REPEAT FOLDER): all the songs of the current folder will be played and repeated continuously
- RPT ALL (REPEAT ALL): all the tracks on the media support will be played and repeated continuously
- RPT OFF (REPEAT OFF): playback will be stopped when the tracks have been played once.
- In AM/FM radio mode: Keep the button pressed for about 3 seconds to store the current radio station as preset 3 of the selected band

18. T.BAND / ID3 tag Button :

- In CD, USB or SD/SDHC mode: this button has 2 functions:
- Press the button shortly to show the ID3 tag information of the current track on the display.
- Keep the button pressed for about 3 seconds to activate/deactivate the Loudness function.
- In AM/FM radio mode: press the button shortly to toggle between the different radio bands: FM1 > FM2 > FM3 > MW1 > MW2

19. EQ Button: Press the button shortly to toggle between the different equalizer presets: FLAT > CLASSIC > POP > ROCK > OFF.

20. USB connection: this USB connection can be used to connect a USB stick that was formatted in FAT32 with a maximum capacity of 64GB. When a USB Stick is inserted, the playback of the tracks on this USB stick will automatically start.

21. FOLDERS / PRESETS – Button :

- In CD, USB or SD/SDHC mode: press the button shortly to go to the previous folder
- In AM/FM radio mode:
- Press the button shortly to go to the previous radio preset.
- Keep the button pressed for about 3 seconds to store the current radio station as preset 5 of the selected band.

22. FOLDERS / PRESETS + Button :

- In CD, USB or SD/SDHC mode: press the button shortly to go to the next folder
- In AM/FM radio mode:
- Press the button shortly to go to the previous radio preset.

- Keep the button pressed for about 3 seconds to store the current radio station as preset 6 of the selected band.
23. SD/SDHC CARD Slot: When a card is inserted, the playback of the tracks on this card will automatically start.
24. SHUFFLE Button :
- In CD, USB or SD/SDHC mode: press the button shortly to activate or deactivate the random play function
 - In AM/FM radio mode: Keep the button pressed for about 3 seconds to store the current radio station as preset 4 of the selected band
25. A.STORE Button: Press the button shortly to activate the automatic radio scan and storage function. Available radio stations will be automatically stored for all the bands.
26. MUTE Button: Press this button to activate or deactivate the MUTE function. Remark: only the VARIABLE output and the FIXED CD/MP3 output will be muted, not the FIXED TUNER output!
27. Power LED: is ON when the player is switched ON.
28. Power ON/OFF switch: switches the player on and off.

HOW TO USE

The functions are already explained in the previous chapter "Controls and functions". In this chapter we provide you with an overview of some specific functions for each type of player.

AM/FM RADIO

- Push the Function knob (9) shortly to toggle between the different audio sources and select the RADIO function.
- Use the T.BAND button (18) to toggle between the available radio bands FM1>FM2>FM3>MW1>MW2
- Use the PRESETS – button to go to the previous radio preset or use the PRESETS + button (22) to go to the next radio preset of the selected radio band.

How to search for radio stations

- Use the PRE button (15) to search for a radio station with a lower frequency or use the NEXT button (16) to search for a radio station with a higher frequency.
- Press the PRE or NEXT button shortly to activate the auto scan function: the tuner will scan the frequencies until it finds a radio station with sufficient signal.
- You can also search manually. For this, press the PRE or NEXT button for about 3 seconds. You are now in manual mode.
- Each time you will now press the PRE or NEXT button shortly, the frequency will be decreased or increased by one step.

How to store radio channels

There are 2 ways to do this: radio stations can be stored automatically or manually in the preset channels.

Full automatic scanning and storage

- Press the A.STORE button (25) shortly to activate the automatic radio scan and storage function.

- Available radio stations will be automatically stored for all the bands.

Manual scanning and storage

- Use the T.BAND button (18) to toggle between the available radio bands FM1 > FM2 > FM3 > MW1 > MW2
- Use the PRE button (15) to search for a radio station with a lower frequency or use the NEXT button (16) to search for a radio station with a higher frequency. (see previous chapter How to search for radio stations)

Once you have found a radio station you want to store in the presets

- Keep the PLAY/PAUSE button (13) pressed for about 3 seconds to store the current radio station as preset 1 of the selected band.
- Keep the STOP button (14) pressed for about 3 seconds to store the current radio station as preset 2 of the selected band.
- Keep the REPEAT button (17) pressed for about 3 seconds to store the current radio station as preset 3 of the selected band.
- Keep the SHUFFLE button (24) pressed for about 3 seconds to store the current radio station as preset 4 of the selected band
- Keep the FOLDERS/PRESETS – button (21) pressed for about 3 seconds to store the current radio station as preset 5 of the selected band
- Keep the FOLDERS/PRESETS + button (22) pressed for about 3 seconds to store the current radio station as preset 6 of the selected band CD / USB / SD/SDHC Player:

Single play or normal (continuous) play

Keep the button pressed for about 3 seconds to toggle between the 2 available playback modes:

- SINGLE PLAY: when you press the play button, only 1 song will be played. The player stops at the end of each track and waits at the beginning of the next track.
- NORMAL PLAY: the complete CD or Storage device will be played without interruption.
- Navigation:
 - Navigation between folders (if available on your CD):
 - Press the FOLDERS/PRESETS – button (21) shortly to navigate to the previous folder
 - Press the FOLDERS/PRESETS + button (22) shortly to navigate to the next folder.
 - Navigation between tracks:
 - Press the PRE button (15) shortly to go back to the starting point of the track
 - Press the NEXT button (16) shortly to go to the starting point of the next track
 - Navigation in a track:
 - Keep the PRE button (15) pressed to navigate backwards in the current song
 - Keep the NEXT button (16) pressed to navigate forward in the current song
 - Repeat function:
 - Press the REPEAT button (17) shortly to toggle between the available repeat modes:
 - RPT ONE (REPEAT ONE): the same track will be played and repeated continuously
 - RPT FOLD (REPEAT FOLDER): all the songs of the current folder will be played and repeated continuously

- RPT ALL (REPEAT ALL): all the tracks on the media support will be played and repeated continuously
- RPT OFF (REPEAT OFF): playback will be stopped when the tracks have been played once.

Random play

Songs of the full media support will be played at random. Just press the SHUFFLE button (24) to activate or deactivate the random play function.

GENERAL SETTINGS FOR ALL PLAYERS

- The output volume of the mixed output can be adjusted by turning the FUNCTION button (9).
- Loudness can be activated or deactivated by keeping the T.BAND (18) button pressed for about 3 seconds
- Equaliser settings can be adjusted by pressing the EQ button shortly to toggle between the different equalizer presets: FLAT > CLASSIC > POP > ROCK > OFF

SPECIFICATIONS

- Power Supply: AC 110-240V 50/60Hz or DC+24V
- Fuse: T500mA/250V
- Power Consumption: 10W
- Fixed Output level (@ 1kHz,0dB): CD/USB: 1.22 Vrms RADIO: 1.22 Vrms
- Variable Output level (@ 1kHz,0dB): 0 ~ 1.22 Vrms

RADIO FM

- Frequency range: 87.5 ~108.0 MHz
- Channel Step: 50kHz
- Intermediate freq. : 10,7 MHz
- Sensitivity: 2uV @ 30dB S/N
- Signal/noise ratio: >60dB

RADIO AM

- Frequency range: 522 ~1620 kHz
- Channel Step: 9kHz
- Intermediate freq. : 455 kHz
- Sensitivity: 30dB
- Signal/noise ratio: >50dB

AUDIO PLAYER

- Signal/noise ratio: >80dB
- FORMATS: WMA + MP3 formats

MP3 FORMAT

- Possible file extensions: .mp3 ~ .MP3 ~ .mP3 ~ .Mp3
- ISO9660: max. 63 character style
- Joliet: max. 63 character style
- CD-ROM sector format: mode-1 only
- USB file system: FAT 32
- Max. capacity USB memory: 64GB
- Max. Folders on USB memory: 500
- Max. Files on USB memory: 999

MP3 FORMATS PLAYBACK

- MPEG1 Layer3 (ISO/IEC11172-3): mono/stereo sampled at 32 – 44,1 – 48kHz
- Bitrates: 32 – 320 Kbps
- Bitrate modes: CBR (Constant Bitrate), VBR (Variable Bitrate) or Xing
- MPEG2 Layer3 (ISO/IEC13818-3): mono/stereo sampled at 16 – 22,05 – 24kHz
- Bitrates: 32 – 160 Kbps
- Bitrate modes: CBR (Constant Bitrate), VBR (Variable Bitrate) or Xing
- MPEG2,5 Layer3: mono/stereo sampled at 8 – 11,025 – 12kHz
- Bitrates: 32 – 160 Kbps
- Bitrate modes: CBR (Constant Bitrate), VBR (Variable Bitrate) or Xing
- Dimensions: 482(W) x 44(H) x 330 (D) mm
- Weight: 3.82kg

Every information is subject to change without prior notice You can download the latest version of this user manual on our website: www.jb-systems.eu

RS-232 Interface Data Table

RS-232 Interface Data Table							
Model	JB Systems USB3.1-RDS						
Communication	RS232C UART / 9600bps / Data 8bit						
Version	Ver 1.1						
OP Code	Start	Commend	Data 1	Data 2	...	Data n	Stop
	HEX	Binary	Descriptions				
Start	55H	01010101 B	Start communication				
Stop	0AAH	10101010 B	Stop communication				
	01H	00000001 B		On			
			Power				

02H	00000010 B		Off
10H	00010000 B	Function	USB
11H	00010001 B		CD
12H	00010010 B		Radio
30H	00110000 B	Volume Set	Data 1
31H	00110001 B	Volume	Up
32H	00110010 B		Down
40H	01000000 B	EQ	Flat
41H	01000001 B		Rock
42H	01000010 B		Pop
43H	01000011 B		Classic
51H	01010001 B	Treble	Up
52H	01010010 B		Down
53H	01010011 B	Bass	Up
54H	01010100 B		Down
60H	01100000 B	Play	
61H	01100001 B	Pause	
62H	01100010 B	Stop	
70H	01110000 B	Next	
71H	01110001 B	Back	
80H	10000000 B	DIR	Up

Commands	81H	10000001 B		Down			
	90H	10010000 B	Repeate	Off			
	91H	10010001 B		One			
	92H	10010010 B		All/DIR			
	0A0H	10100000 B	Random	Off			
	0A1H	10100001 B		On			
	0B0H	10110000 B	Intro	Off			
	0B1H	10110001 B		All			
	0B2H	10110010 B		DIR			
	0C0H	11000000 B	Freq. Set	Data 1	Data 2	...	Data 5
	0C1H	11000001 B	Radio Fre q.	Up			
	0C2H	11000010 B	Radio Fre q.	Down			
	0C3H	11000011 B	Radio Band	FM			
	0C4H	11000100 B		AM			
	0D0H	11010000 B	Status	Request			
	0D1H	11010001 B	Status	Data 1	Data 2	...	Data 15
	0E0H	11100000 B	Title	Data 1	Data 2	...	Data n
	0E1H	11100001 B	Artist	Data 1	Data 2	...	Data n
	0E2H	11100010 B	Album	Data 1	Data 2	...	Data n
	0E3H	11100011 B	DIR	Data 1	Data 2	...	Data n

Examples

Volume Set	Data 1	00H	01H	02H	03H	...	20H	21H
	Value	MIN	1dB	2dB	3dB	...	32dB	MAX
Freq. Set	Data 1	Data 2	Data 3	Data 4	Data 5	The meaning is radio frequency 87.50Hz		
	00H	08H	07H	05H	00H			
Status Report	Data 1	Data 2	Data 3	Data 4	Data 5	Data 6	Data 7	Data 8
	Power	Function	Volume	EQ	Play	Repeate	Random	Intro
					Pause			
					Stop			
	Data 9	Data 10	Data 11	Data 12	Data 13	Data 14	Data 15	Data 16
	Radio Band	Radio Freq.1	Radio Freq.2	Radio Freq.3	Radio Freq.4	Radio Freq.5	Track No.1	Track No.2
	Data 17							
	Track No.3							

Volume Up	55H	31H	0AAH	Volume level 1dB up			
Play	55H	60H	0AAH	Play CD or MP3 file on the USB port			
Status Report	55H	0D1H	01H	10H	21H	42H	60H
	Start	Status	Power on	USB	Volume max	Pop	Play
	90H	0A0H	0B0H	0C3H	00H	08H	07H
	Repeat of f	Random off	Intro off	FM	Freq.1	Freq.2	Freq.3
	05H	00H	01H	0AAH	01H	0AAH	
	Freq.4	Freq.5	Track No.1	Track No.2	Track No.3	Stop	

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