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The world's finest wireless systems

IEM S4.16

Professional in-ear Wireless Monitoring System
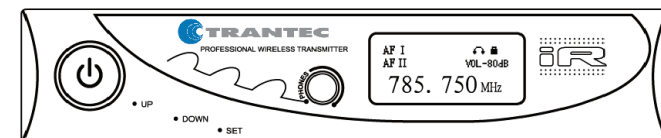
TRANTEC

Thank you for choosing Trantec professional wireless in-ear monitoring system

1. Features

The Trantec IEM S4.16 is designed for live performances and audio broadcast so that the user can maximize the overall monitoring experience without the use of large and complicated monitoring loudspeakers. Also the system can be used in a conference application with multi language translation. The Trantec IEM S4.16 adopts a dynamic processing technique that improves the audio quality and signal to restrain unwanted noise.

2. Product Introduction

The Trantec IEM S4.16-TX is a stereo UHF transmitter and in every 24 MHz there are 16 preset frequencies. The main features are as follows:

a) LCD Panel
b) Standard 19/2 metal mainframe
c) Balanced and unbalanced input jack
d) Optional stereo and mono channels
e) With PLL synthesized technology
f) With compressing and expanding circuitry, S/N is over 90dB
g) Built in limiting circuitry to avoid distortion in case of overload
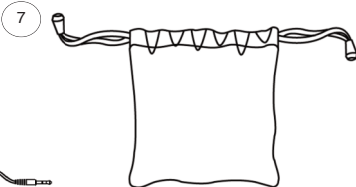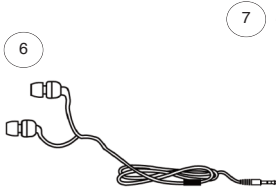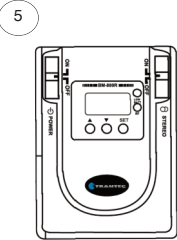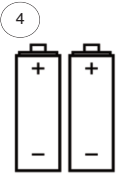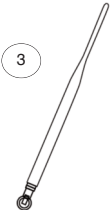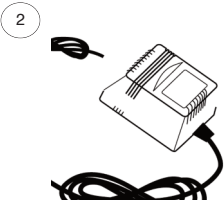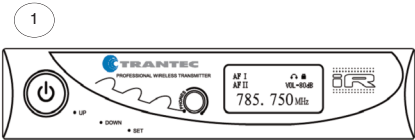h) Phone output monitoring jack

The Trantec IEM S4.16-RX is a stereo receiver complete with 16 preset frequencies in every 24 MHz utilising the most advanced circuitry design and is the ideal choice among professional performers.

Main Features;

- UHF professional stereo receiver
- PLL synthesized technology, 16 optional preset frequencies in its band width of 24 MHz
- Optional stereo and mono channel function
- Power indicator and RF signal
- Compression and expander circuitry with S/N over 90dB
- AA batteries x 2
- Flexible antenna

3. System Components

① IEM S4.16-TX transmitter x 1

② Power supply x 1

③ Antenna x 1

④ 1.5 AA batteries x 2

⑤ IEM S4.16-1RX receiver x 1

⑥ Stereo headphones x 1

⑦ Waterproof bag x 1

4. Function Instructions
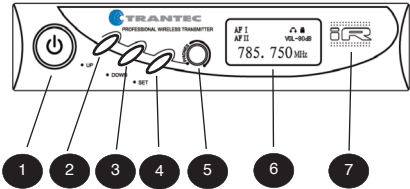
Front Panel   Rear Panel
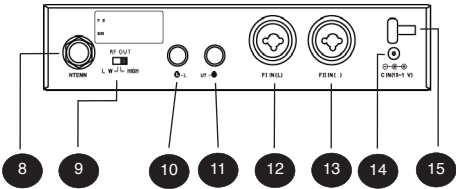
1	Power switch and power indicator
2	Up
3	Down
4	Set
5	Headphone output jack, with stereo monitoring signal
6	LCD
7	Window of infrared data transmission
8	Antenna connector
9	High and Low RF switch
10	Left Channel unbalanced output
11	Right Channel unbalanced output
12	Left Channel input: balanced and unbalanced
13	Right Channel input: balanced and unbalanced
14	DC power input
15	Cable fix

2. IEM S4.16-RX
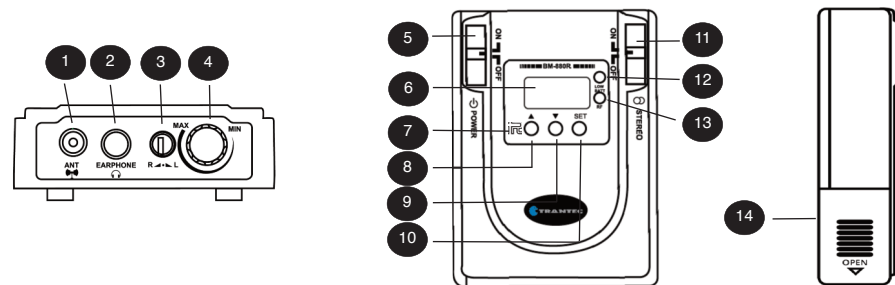
1. 1/4 wave antenna
2. 3.5 stereo monitoring headphone output
3. Left and right hand channel balanced adjusting button allowing the adjustment volume of left and right channels
4. Volume control
5. Power switch
6. LCD
7. Infrared data transmission window
8. UP
9. DOWN
10. SET
11. Optional switch, stereo and mono channels
12. Low power indicator
13. RF signal indicator
14. Battery cover

3. Battery Installation
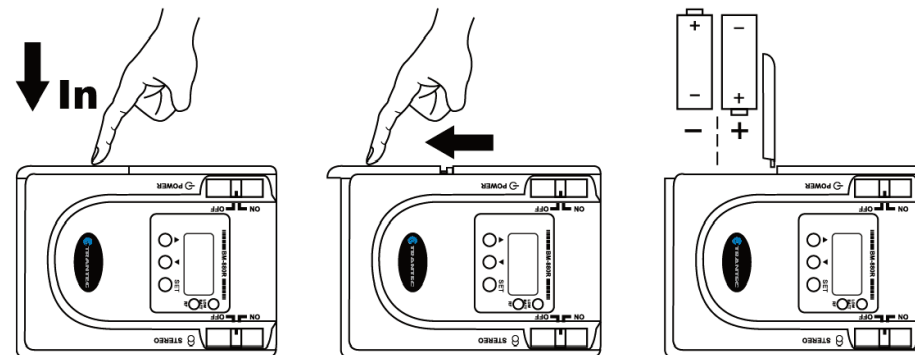
(1) Put the power switch to OFF and press the open side of the battery cover and slide to open cover

(2) Place two pieces of AA batteries (1.5V) with the correct polarity

(3) Close the battery cover

(4) Switch power to ON and the LCD will display showing that the CPU receiver is working and the hardware is initializing and recovering the last working condition before power down.

4. Installation

(1) System Installation

LOOP Applications

Use the Loop OUT L (left) and R (right) outputs to send a copy of the audio signal going into the transmitter to other devices. Shown here are a few examples of the many configurations for the LOOP outputs.

  NOTE: The input level control and the input pad do not affect the level of the LOOP signals.

Stereo for multiple Systems

Use the LOOP OUT connectors to send one stereo signal from the mixing console to multiple IEM 4.16-RX wireless transmitters. This frees up outputs on the mixing console for other uses.

  Connect the first transmitter to the mixer.
  Connect the next transmitter to the first transmitter's LOOP outputs. Form a chain using all transmitters in your installation.
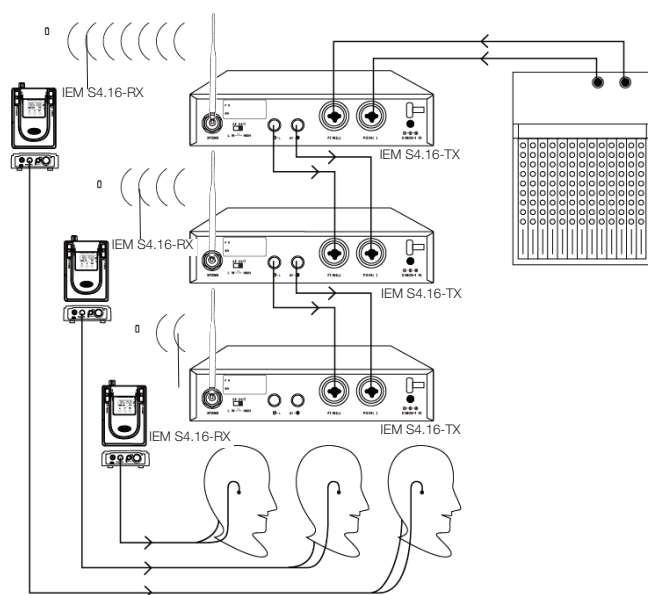
Mix Mode for Multiple Systems

Some performers need to hear more of their own voice or instrument while others want to hear more of the band. With this setup, each performer hears a combination of the whole band and their own instrument and the performer can use the receivers balance control to create the desired mix of the whole band to input 2 of the first transmitter. Connect input 2 of the next transmitter to the LOOP OUT R output of the first transmitter. Continue the chain with all the transmitters. Next, create sole mixes for each performer using the auxiliary outputs of the mixing console. Send these mixes to input 1 of each performers transmitter
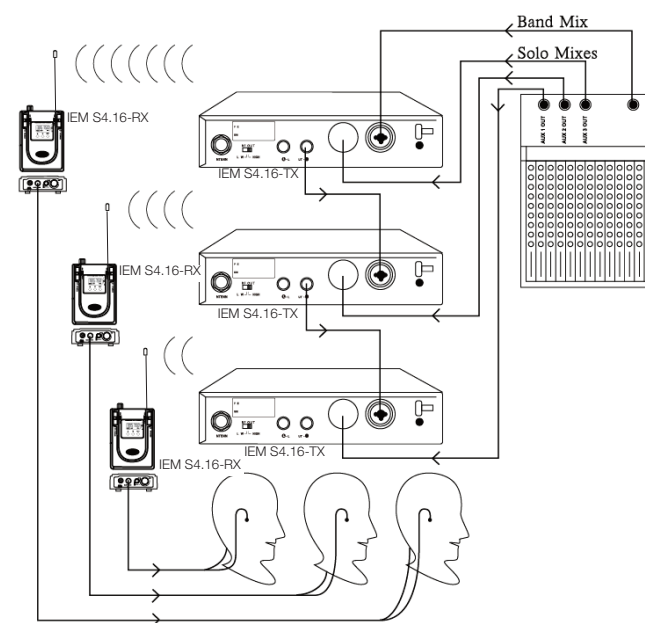
(2) Power Installation

  Connect the output port of the DC12V-15V/800mA to the input of the DC Power of the transmitter.

(3) Turn On Power

  Press the power button and the LCD will illuminate, meanwhile more information will be displayed and will output the transmitting signal once the PLL circuitry is locked

(4) Audio Signal Input

Optional stereo and mono channel input, mono channel input from AF II IN of the right side, you can choose XLR-3 balanced input or 6.3 unbalanced input connector.

(5) Configuring Suitable Audio Input Standard

The strength of the audio input signal will be display on the LCD panel, you can set the strength to show 8 bars and when the strength is over the 8 bars the input signal will be limited even when the signal is stronger. By doing this you can obtain the best S/N ratio and dynamic range by adjusting the input strength to avoid distortion.

(6) Setting Frequency of the Transmitter

a. Press the UP and DOWN button, the system will change the frequency and channel according to the preset menu. When the LCD displays the frequency the channel will also change. When the name appears the system is changing automatically according to the frequency or channel.
b. Press UP and DOWN button to the desired frequency or channel you re quire. The frequency or chanel you have chosen will begin to flash
c. Press SET button and the frequency or channel has been fixed and the CPU will lock the frequency the LCD will stop flashing and will revert to it's orignal status.

Select Frequency Panell	Changing Frequency	Save Frequency

(7) Steps to configure The Stereo Channel and Mono Channel

a. Press SET to scroll through the options until the units dislpays "input mode"

b. Press SET and the LCD will display "stereo", press SET to confirm

c. Press SET and the LCD will display "mono", press SET to confirm

(a) (b) (c)
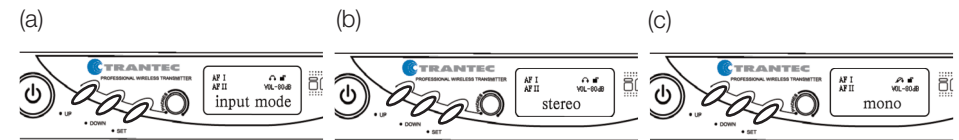
(8) Configuration of Lock Function

a. Press SET to scroll trough the options until the unit displays LOCK

b. Pess DOWN to confirm and the LCD will display LOCK OFF to confirm

c. Press DOWN, the LCD will display LOCK ON, showing that the setting function is locked and you can not modify the functions until you relieve change to release

d. Press SET to confirm your choice

(a) (b) (c)

(d)
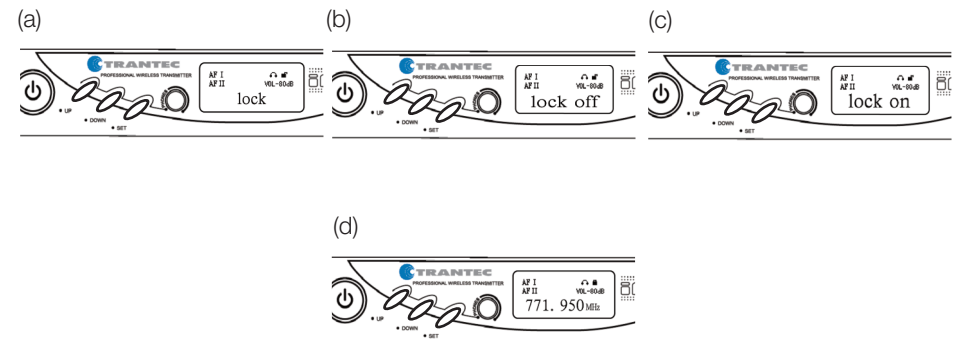
(9) Configuration of Input Sensitivity

a. Press SET to scroll through the options until the unit displays SENSITIVE

b. Press SET and HIGH will be displayed to show that the sensitivity is high

c. Press DOWN, the LCD will display LOW, showing that the input sensitivity is low

d. Press SET to confirm your choice

(a)

(b)

(c)

(10) Configuration of Display

a. Press SET to scroll through th eoptions until the unit displays DISP MODE

b. Pess SETT to confirm and DISP FREQ will be displayed to show frequency

c. Press DOWN, the LCD will display DISP CHAN to show channel

d. Press DOWN, the LCD will display DISP NAME to show name

e. Press SET to confirm your choice

(a)

(b)

(c)

(d)
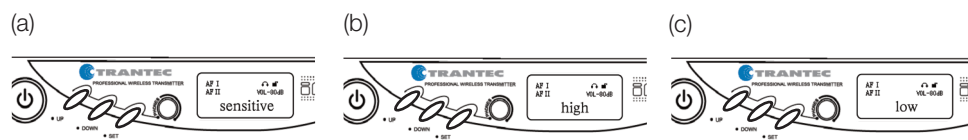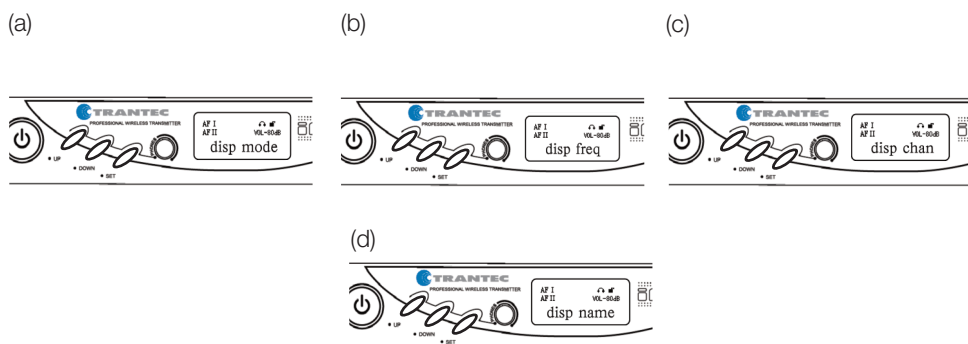

(11) Name Configuration

a. Press SET to scroll through the options until the unit displays RENAME, then press SET to confirm

b. Press DOWN and AAA will be displayed, press DOWN to set letters or numbers

c. Press SET to move to the last setting of character and repeat the operation of b and c to finish the setting of 8 characters

(a)

(b)

(c)
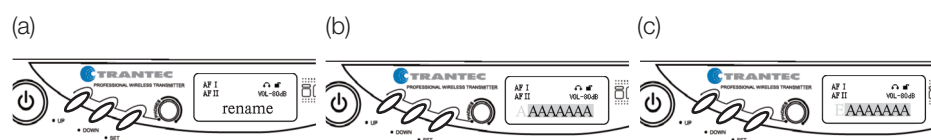
(12) Configure Monitor Volume

a. Press SET to scroll through th eoptions until the unit displays PHONES VOL, it will display -40dB, then press DOWN again, the monitoring output volume will decrease

b. Press SET to confirm your choice

c. Press UP and the monitoring volume will increase

(a)

(b)

(c)
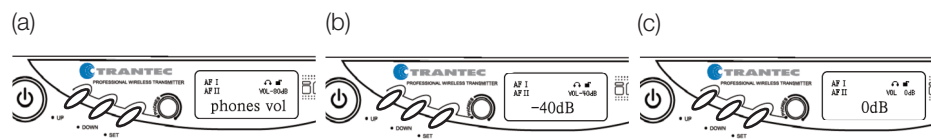
NOTE: to protect your hearing, please adjust the volume to avoid distortion

(13) Receiver LCD

```
CH  008
      BATT
```
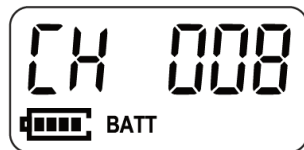
1) All the menus will be displayed here

2) Display of the battery power is divided into 4 bars and when there is only one bar left, it means the battery power is running low and you should change the batteries

(14) Headphone Connection

Insert the stereo monitoring headphone to 3.5mm headphone jack socket, or connect the output to an audio input of another device
        Notice: This 3.5mm jack socket is a stereo output, please make certain that the connection is a stereo jack otherwise it is possible that damage could be caused to the output circuit.

(15) Setting the Receiver Frequency

Press ▲ or ▼ to show changing of the frequency and press SET to confirm

(16) Configuration of Display of the Receiver

a. Press SET and press ▲ dISP
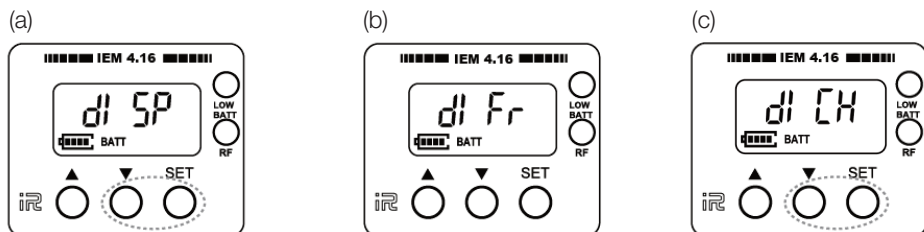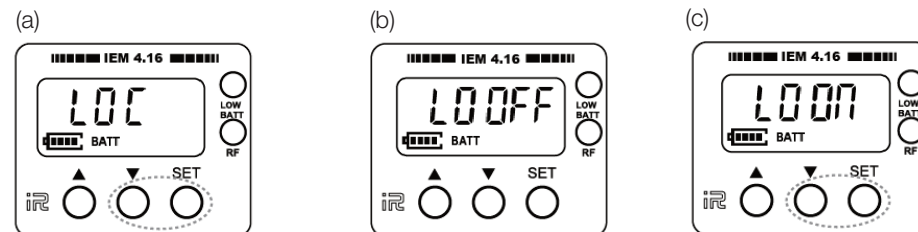b. Press SET to confirm and dIFr will be displayed. Press again to display frequency
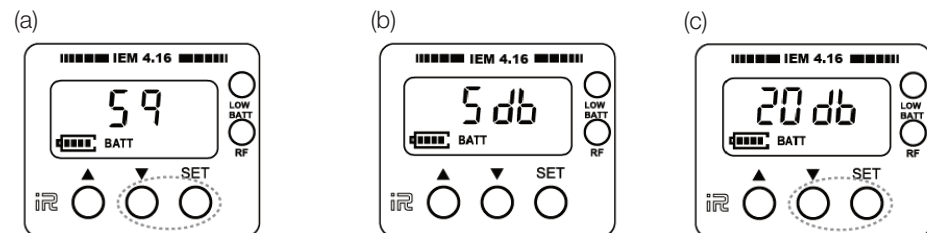c. Press ▼ to show dICH and press SET to display channel

(a)

```
IIIIIIII IEM 4.16 IIIIIIII
   dI SP        LOW
                BATT
   BATT          RF
iR  ▲    ▼....SET
    O    O    O
```

(b)

```
IIIIIIII IEM 4.16 IIIIIIII
   dI Fr        LOW
                BATT
   BATT          RF
iR  ▲    ▼    SET
    O    O    O
```

(c)

```
IIIIIIII IEM 4.16 IIIIIIII
   dI CH        LOW
                BATT
   BATT          RF
iR  ▲    ▼....SET
    O    O    O
```

(17) Setting the Lock Function

a. Press SET and press ▼ to show LOC
b. Press SET to confirm and LCD will display LOOFF meaning the lock function has been relieved to release
c. Press ▼ to show LOON and press SET, the setting function has been locked

(a)

```
IIIIIIII IEM 4.16 IIIIIIII
   LOC         LOW
                BATT
   BATT          RF
iR  ▲    ▼....SET
    O    O    O
```

(b)

```
IIIIIIII IEM 4.16 IIIIIIII
   LOOFF       LOW
                BATT
   BATT          RF
iR  ▲    ▼    SET
    O    O    O
```

(c)

```
IIIIIIII IEM 4.16 IIIIIIII
   LOON        LOW
                BATT
   BATT          RF
iR  ▲    ▼....SET
    O    O    O
```

(18) Configuration of Receiver Signal

a. Press SET to show Sq and press SET to show Sdb
b. Press SET to confirm, LCD will display the former data of SQ such as Sq
c. Press UP or DOWN, the mute level will change and you can choose the level required

(a)

```
IIIIIIII IEM 4.16 IIIIIIII
   Sq          LOW
                BATT
   BATT          RF
iR  ▲    ▼....SET
    O    O    O
```

(b)

```
IIIIIIII IEM 4.16 IIIIIIII
   Sdb         LOW
                BATT
   BATT          RF
iR  ▲    ▼    SET
    O    O    O
```

(c)

```
IIIIIIII IEM 4.16 IIIIIIII
   20db        LOW
                BATT
   BATT          RF
iR  ▲    ▼....SET
    O    O    O
```

(19) Switch for Sound Mode

To choose the current headphone output for stereo or mono channel, it should be consistent with the transmitter
        Notice: when choosing the stereo sound mode, you will have better sound behavior but an increase in S/N when choosing single output mode, the S/N will be larger and will increase distance

6. Notice

(1) When this system is being used together with a wireless microphone system, please avoid the same frequency range to prevent distortion

(2) Please make sure that there are no obstacles between the antenna of the transmitter and the receiver. When used indoors the obstacles will absorb wave form that will shorten the transmission distances

(3)Connect the transmitting signal to the external antenna with coaxial cable, the coaxial cable should be 50Ω, generally 5 meters RG-58

(4) The working life time for the battery depends on the output volume power of the headphone and choosing a headphone with better sensitivity will increase battery life

(5) The voltage of the power supply should exceed 12V and less than 18V while making sure that the output current is over 500mA

(6) Please remove the batteries when not in use over a long period of time.

7. Specification

IEM S4.16-RX

Frequency range	(606.250 - 613.850) (863 - 864.870)
Band width	24MHz
Oscillation	PLL synthesized
Channel separation interval	25KHz
Frequency stability	±0.005% 0°C-50°C
Modulation mode	FM stereo
Max deviation	±68KHz
Frequency response	80Hz -15KZ ± 3DB
Stereo separation	>45dB (at 1KHz)
Output jack	Ø 3.5mm stereo headphone jack
Power	AA battery x 2
Battery life	8 hours (under normal operating conditions)
Antenna	Fixed 1/2
Dimensions	88 (L) x 65 (W) x 32 (H)
Weight	105g

IEM S4.16-TX

Frequency range	(606.250 - 613.850) (863 - 864.870)
Band width	24MHz
Oscillation	PLL synthesized
Channel separation interval	25KHz
Frequency stability	±0.005% 0°C-50°C
Modulation mode	FM stereo
Transmitter output power	low<10mW high<100mW
Spurious rejection	<4nW
Stereo separation	>45dB (at 1KHz)
Maximum deviation range	±40KHz
Frequency response	50-15KHz ±3dB
Audio input	line level x 2 XLR Ø 6.3mm combined jack
Audio output	Ø 6.3mm jack x 2
Dimensions	210 (L) x 206 (W) x 44 (H)
Rating power	5W
Weight	1.1Kg

Headphones

Type	Stereo in-ear
Diameter	Ø 9mm
Sensitivity	104±dB/mwatt 1 KHz
Impedance	16Ω
Frequency response	20Hz - 22KHz
Rating power	2mW
Max power	10mW
Jack	Ø3.5mm