

USER MANUAL

2.4GHz Audio Wireless Transmitter and Receiver

FCC INFORMATION (for US customers)

1. **IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT!** This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modifications not expressly approved by the InSeat Solutions, LLC may void your authority, granted by the FCC, to use the product.
2. **IMPORTANT:** When connecting this product to accessories and/ or another product use only high quality shielded cables. Cable(s) supplied with this product MUST be used. Follow all installation instructions. Failure to follow instructions could void your FCC authorization to use this product in the USA.
3. **NOTE:** This product has been tested and found to comply with the requirements listed in FCC Regulations, Part 15 for Class "B" digital devices. Compliance with these requirements provides a reasonable level of assurance that your use of this product in a residential environment will not result in harmful interference with other electronic devices.

This equipment generates/uses radio frequencies and, if not installed and used according to the instructions found in the users manual, may cause interference harmful to the operation of other electronic devices.

Compliance with FCC regulations does not guarantee that interference will not occur in all installations. If this product is found to be the source of interference, which can be determined by turning the unit "OFF" and "ON", please try to eliminate the problem by using one of the following measures.

Relocate either this product or the device that is being affected by the interference.

Utilize power outlets that are on different branch (circuit breaker or fuse) circuits or install AC line filter(s).

In the case of radio or TV interference, relocate/reorient the antenna, if the antenna lead-in is 300ohm ribbon lead, change the lead-in to coaxial type cable.

If these corrective measurements do not produce satisfactory results, please contact the local retailer authorized to distribute this type of product. If you cannot locate the appropriate retailer, please contact the InSeat Solutions, LLC.

The above statements apply ONLY to those products distributed by the InSeat Solutions, LLC.

CAUTION: READ THIS BEFORE OPERATING THIS UNIT

- To assure the finest performance, please read this manual carefully. Keep it in a safe place for future reference.
- Do not expose this unit to sudden temperature changes from cold to hot, and do not locate this unit in an environment with high humidity (i.e. a room with a humidifier) to prevent condensation inside this unit, which may cause an electrical shock, damage to this unit.
- Avoid installing this unit where foreign object may fall onto this unit and/or this unit may be exposed to liquid dripping or splashing. On the top of this unit, do not place:
 - Other components, as they may cause damage and/or discoloration on the surface of this unit.
 - Burning objects (i.e. candles), as they may cause fire, damage to this unit, and/or personal injury.
 - Containers with liquid in them, as they may fall and liquid may cause electrical shock to the user and/or damage to this unit.
- Do not plug in this unit to a wall outlet until all connections are complete.
- Do not use force on switches, knobs and/or cords.
- When disconnecting the power cord from the wall outlet, grasp the plug; do not pull the cords.
- Do not clean this unit with chemical solvents; this might damage the finish. Use a clean, dry cloth.
- Only voltage specified on this unit must be used. Using this unit with a higher voltage than specified is dangerous and may cause fire, damage to this unit, and/or personal injury. The InSeat Solutions, LLC will not be held responsible for any damage resulting from use of this unit with a voltage other than specified.
- To prevent damage by lightning, disconnect the power cord from the wall outlet during an electrical storm.
- Do not attempt to modify or fix this unit. Contact qualified the InSeat Solutions, LLC service personnel when any service is needed. This cabinet should never be opened for any reasons.
- When not planning to use this unit for long periods of time (i.e. vacation), disconnect the AC power plug from the wall outlet.
- Be sure to read the "TROUBLESHOOTING" section on common operating errors before concluding that this unit is faulty.

This unit is not disconnected from the AC power source as long as it is connected to the wall outlet, even if this unit itself is turned off. This state is called standby mode. In this state, this unit is designed to consume a very small quantity of power.

WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.



FEATURES

- Non-compression for high sound quality with delay time 0.5ms.
- Digital audio with 44.1K sampling rate and 16-bit resolution.
- FSK digital modulation/demodulation.
- 20Hz ~ 20 KHz (-1dB) audio frequency response
- 92dB audio dynamic range
- Power-on function to prevent pop noise
- Improving performance in fading environment by antenna diversity
- Embedded antenna for cost-effect and quick development
- Avoiding reception errors by employing forward error correction (FEC)
- Muting function when suffering interference or at poor receiving conditions
- Operating at 2.4GHz ISM band with 8 selectable channels
- Low power consumption for portable application
- Proper RF output power 10dBm to reduce interfering to other devices operating at the same frequency band
- -87dBm receiving sensitivity, 45dB channel rejection and 25dB image rejection
- Application distance up to 30 meters (L.O.S.) with perfect reception

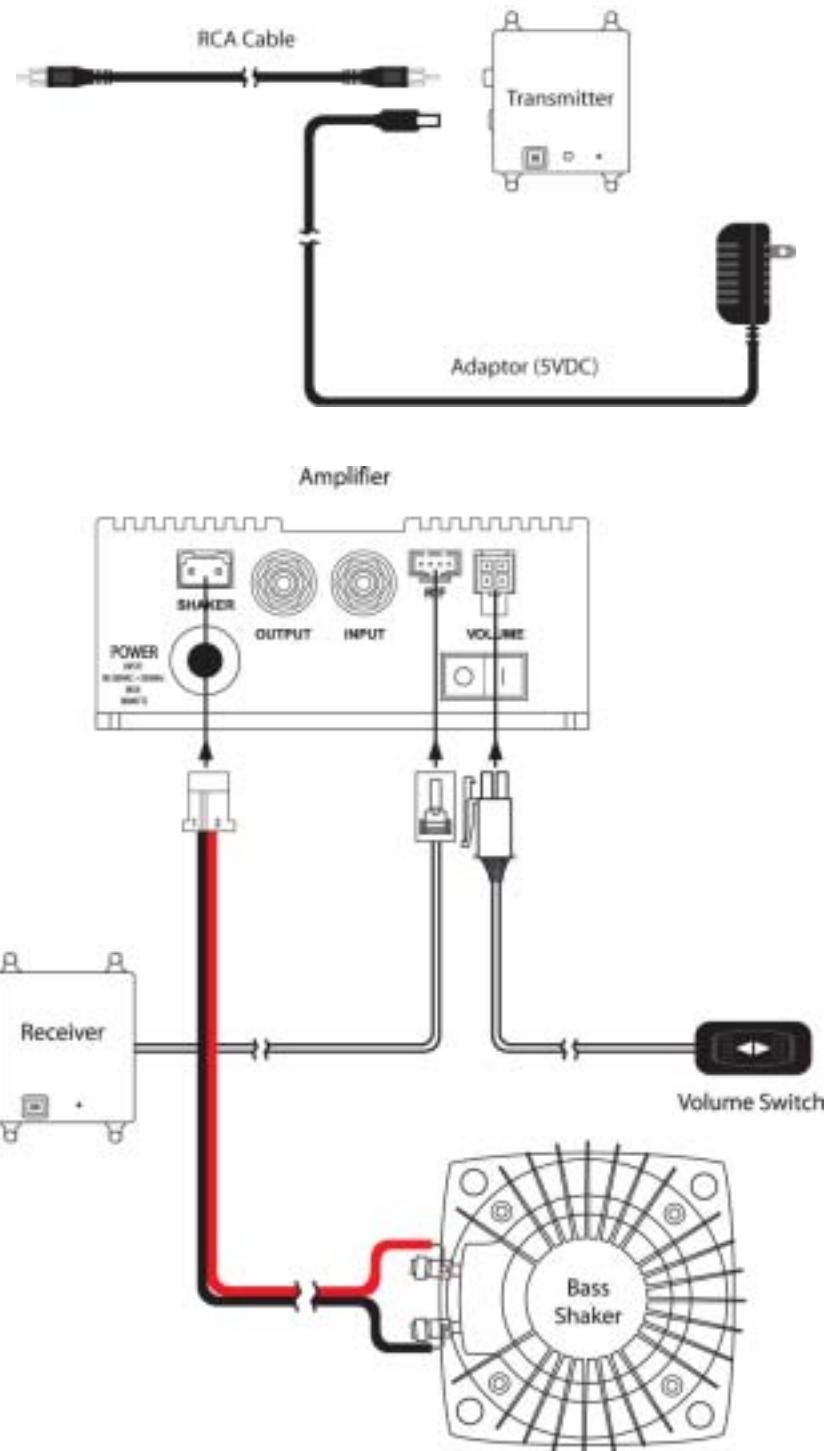
SPECIFICATIONS

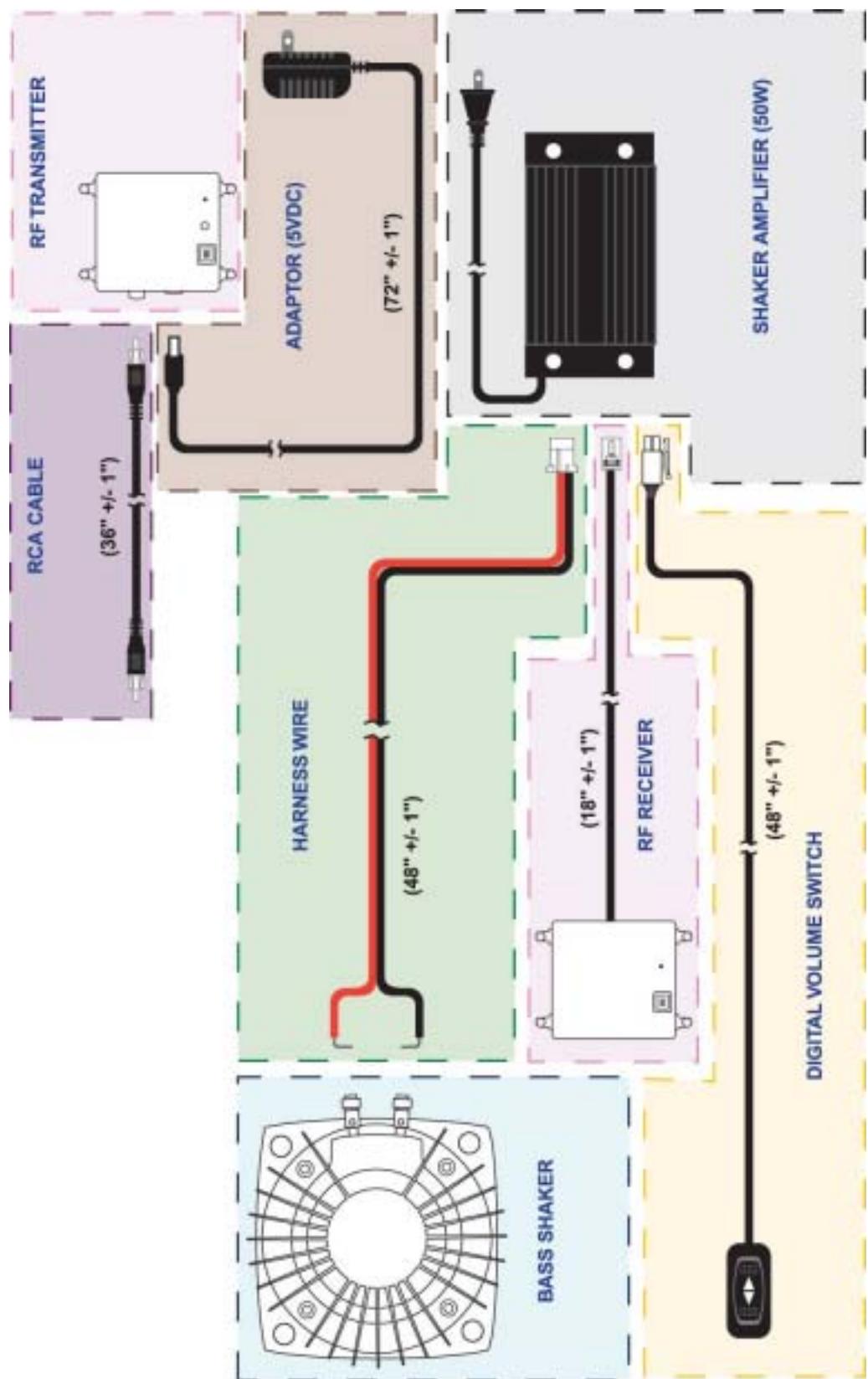
Model No.	AMP-TR24-T	AMP-RC24
Description	Transmitter Module	Receiver Module
Supply Voltage	3.6 ~ 5 VDC	3.9 ~ 5 VDC
Current Consumption	93mA (Typical)	65mA (Typical)
Operating Temperature	-10 ~ +60 (degree Celsius)	-10 ~ +60 (degree Celsius)
Frequency Range	2400 ~ 2483.5 MHz	2400 ~ 2483.5 MHz
Modulation	FSK (Modulation Index 0.5)	
Channel Number	8	8
Channel Spacing	9 MHz	9 MHz
Channel Frequency	2410, 2419 ~ 2473 MHz	2410, 2419 ~ 2473 MHz
Frequency Stability	±100 KHz	±100 KHz
TX Power	EIRP +10dBm	
Input Impedance	>10K Ohm	
Input Level	4Vp-p (Max)	
RX Sensitivity		-85 dBm (Typical)
Adjacent Channel Rejection		>45dB @ +/-5MHz offset the central frequency
Image Rejection		>25dB @ the image frequency
Output Impedance		<1K Ohm
Output Level		3.4Vp-p (Typical)
Response	20 ~ 20 KHz, -1dB	
Dynamic Range		92dB (Typical)
Separation		80dB (Typical)
SN Ratio		87dB (Typical)
THD	0.1% (Typical)	

RF Channel Setting

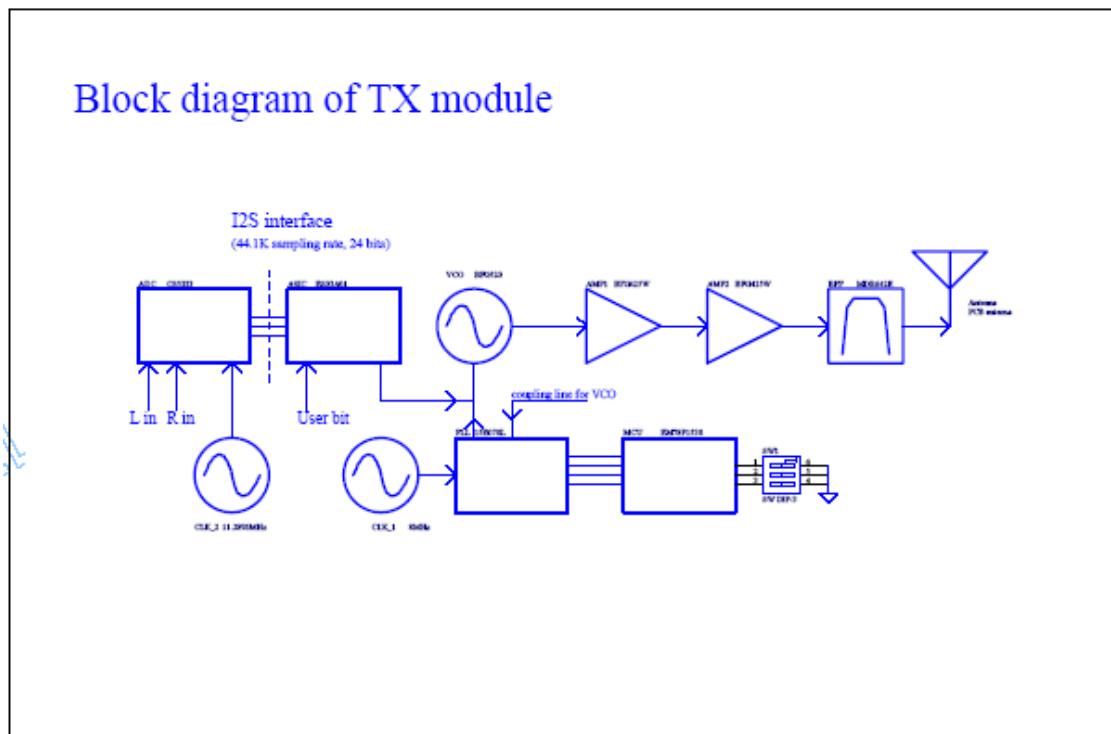
Channel	SW0	SW1	SW2
7	On	On	On
6	Off	On	On
5	On	Off	On
4	Off	Off	On
3	On	On	Off
2	Off	On	Off
1	On	Off	Off
0	Off	Off	Off

Connection



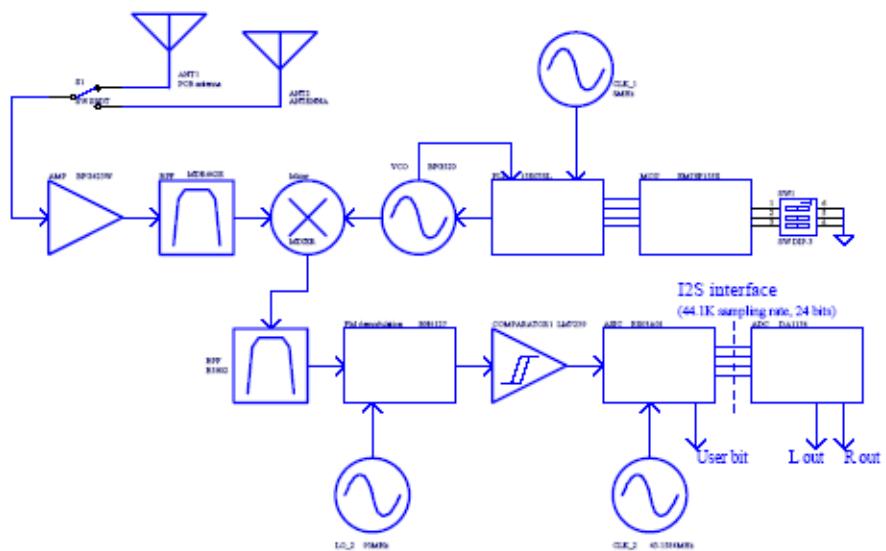


Block Diagram of Tx Module



Block Diagram of RX Module

Block diagram of RX module



ONE-YEAR LIMITED WARRANTY

WARRANTY SERVICE OR REPAIR SERVICE AFTER EXPIRATION OF WARRANTY

If you experience problems with your product, please contact your retailer. If the problem still persists, call the InSeat Solutions, LLC™ Customer Service. Hours of operation are Monday through Friday, 9 a.m. to 4 p.m., PST (times subject to change). If the problem cannot be solved over the telephone, you will be referred by the InSeat Solutions, LLC™ to the nearest factory service center. In some instances, it may be necessary for you to ship the complete product, freight prepaid and insured for loss or damage, to the nearest service location. In order for the InSeat Solutions, LLC™ to accept a return, it must have a Return Merchandise Authorization (RMA) number issued by the InSeat Solutions, LLC™ Customer Service representative.

RETURN PROCEDURE

1. Mark the shipping box clearly with the RMA number.
2. Be sure to include all original packaging and contents.
3. Include a copy of your invoice and a brief description of why the product is being returned.
4. Insure all shipments for your protection.
5. Return the product to the address given to you by the Customer Service representative.

WARRANTY LIMITATIONS

This warranty shall not apply if this product: 1) is used with products other than described herein, unless sold or licensed by the InSeat Solutions, LLC™; 2) is used for commercial purposes (including rental); 3) is modified or tampered with; 4) is damaged by negligence, accident, unreasonable use or by other causes unrelated to defective materials or workmanship; or 5) has had the serial number altered, defaced or removed.

REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE SONSUMER. The InSeat Solutions, LLC™ SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESSED OR IMPLIED WARRANTY ON THIS PRODUCT. EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ON THIS PRODUCT IS LIMITED IN DURATION TO THE DURATION OF THIS WARRANTY.

This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state. This warranty is valid only in the United States.

NOTE:

THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV
INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS
EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER AUTHORITY
TO OPERATE THE EQUIPMENT.