SOUNDTUBE® Lead. Or follow.

WLL-TR-1p | Install Instructions For:

WLL-TR-1p (WLL-TX1 transmitter and WLL-RX1p receiver/amp).

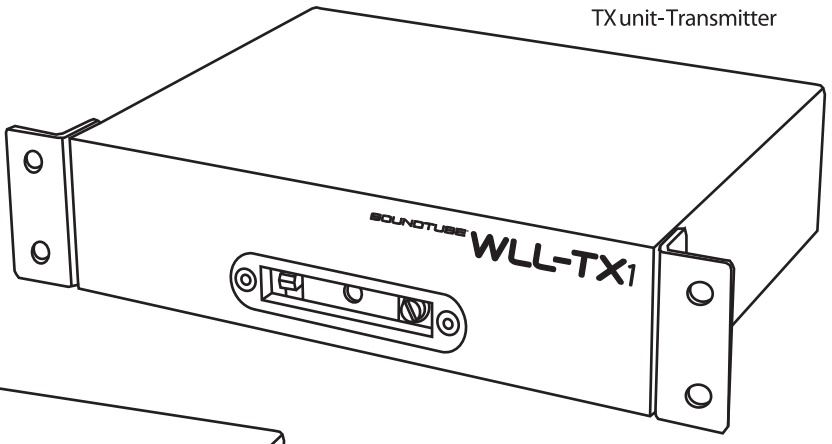
Transmitter Box Contents

1- WLL-TX1 wireless transmitter
1- 5v 1.2A power supply
2- Half rack mount adapters
2- Antenna

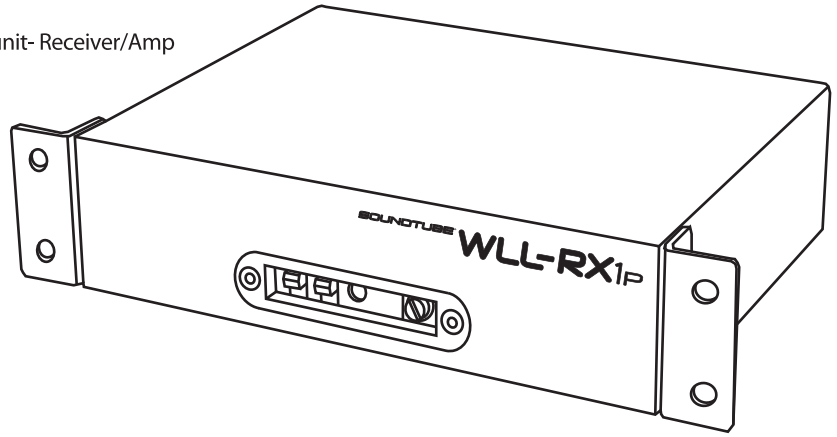
Receiver Box Contents

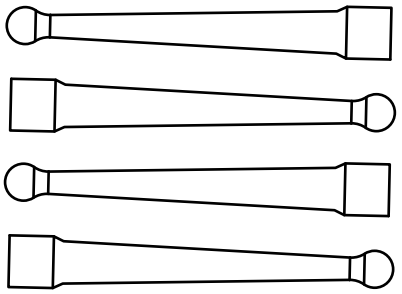
1- WLL-RX1p wireless receiver/amp unit
1- 32VDC 3.75A power supply
2- Half rack mount adapters
2- Antenna
2- Two-pin Euro-block connectors

TX unit-Transmitter



RX unit- Receiver/Amp

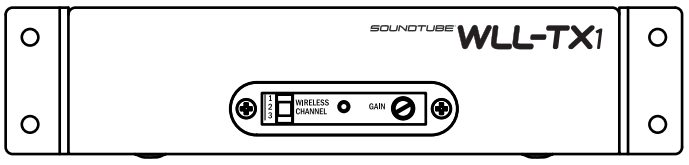




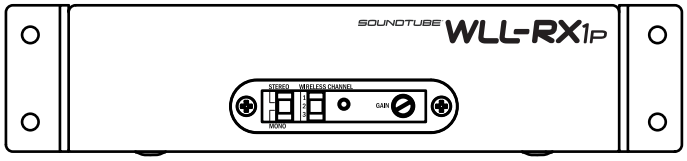
Antenna (4)

Front

TX unit-Transmitter

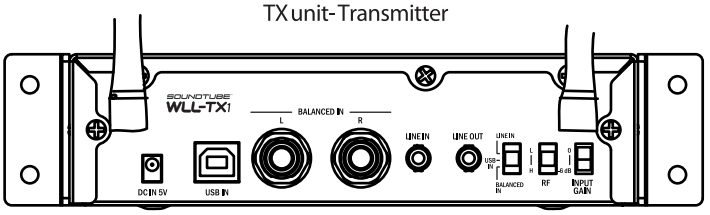


RX unit- Receiver/Amp

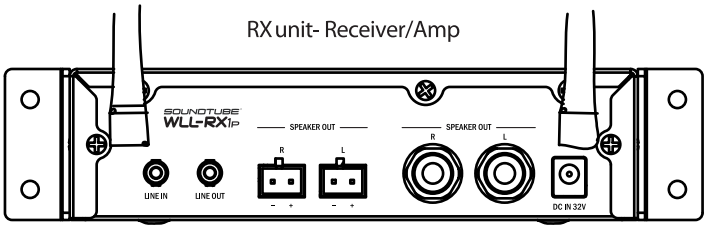


Rear

TX unit-Transmitter



RX unit- Receiver/Amp



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 PN INS-WLL-TR-1p Rev01.27.12

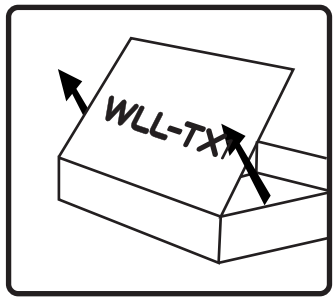
Warning

SoundTube products must be installed by a professional audio installer/contractor. For safety and for optimum audio performance, installer must follow all directions issued by SoundTube Entertainment.

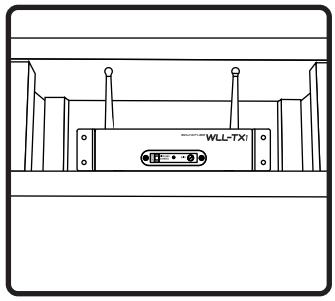
WLL-TR-1p | Install Instructions For:

WLL-TR-1p (WLL-TX1 transmitter and WLL-RX1p receiver/amp).

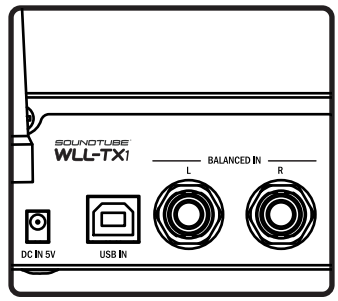
WLL-TX1 Install Instructions



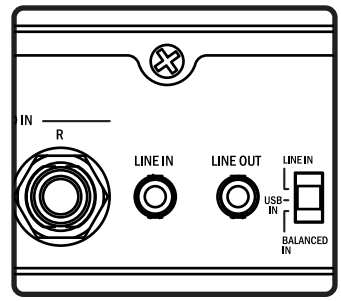
1. Remove unit from box.



2. Determine location for placement of WLL-TX1. The WLL-TX1 may be installed in an equipment rack (half rack adapter required) or on a shelf.

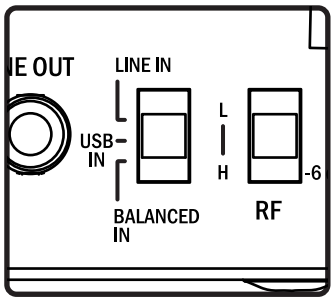


3. Connect desired input source to rear panel. You may use balanced (1/4" TRS) connectors, unbalanced mini or USB. Multiple sources may be connected but only the source selected on the input switch (step 5) will be sent to the transmitter. When connecting through the USB input do not connect an input to the balanced or line in.

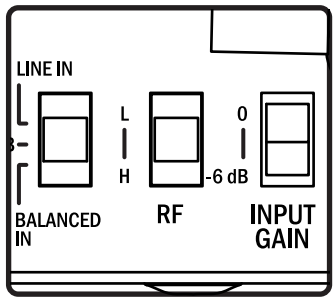


4. If desired, the variable LINE OUT mini jack can be connected to an external device such as an ADA hearing assistance system.

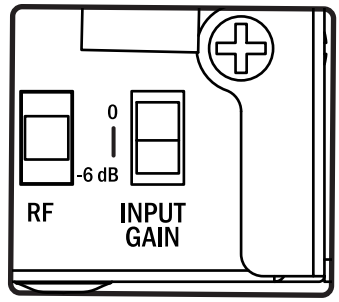
Installation Notes: 2a: an installation that puts the WLL-TX1 in line-of-sight with the WLL-RX1(p) will provide the best results. 2b: Do not install transmitter more than 230 feet (70 meters line of site or 50 meters indoors) from the desired receiver location(s). 3a: If using the USB input, the WLL-TX1 will appear as an audio device on your computer's control panel.



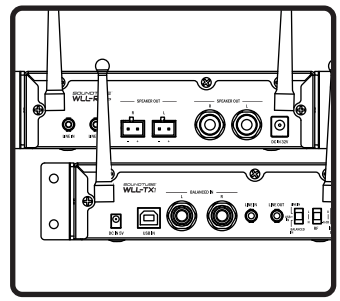
5. Set input switch to match the desired input source.



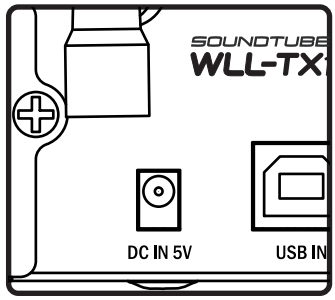
6. Set RF power switch. Two options are available, High (H) and Low (L). The High setting is recommended for maximum distance. The low setting is for installations where 2 or more TX-1's are on the same channel within 60-70 ft of each other.



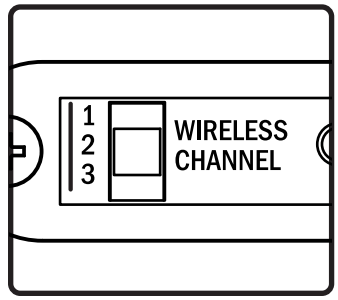
7. Set INPUT sensitivity switch at 0 dB for normal use. If using a high output source, set the switch to -6dB.



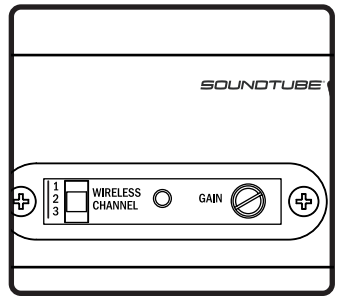
8. For best results, Transmitter and Receiver antennas should face the same direction (either vertically or horizontally).



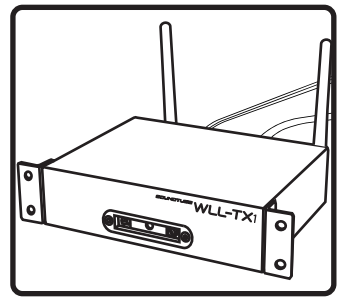
9. Connect power supply to DC IN 5V connector.



10. On front panel, select transmit channel 1, 2 or 3. NOTE: the WLL-RX1(p) unit(s) must be set on the same channel.



11. After installation of WLL-RX1(p) unit(s), apply power to WLL-TX1. Adjust front panel gain knob as needed. The gain control will adjust the level of both the input audio and the LINE OUT feed.



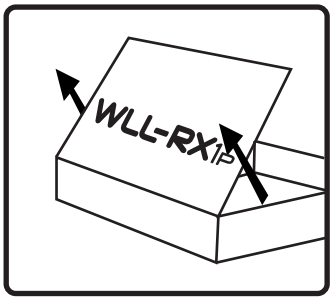
12. Done!

(The LED on the front panel will be red when power is applied to the TX unit. It will turn blue when the TX unit is in communication with the RX).

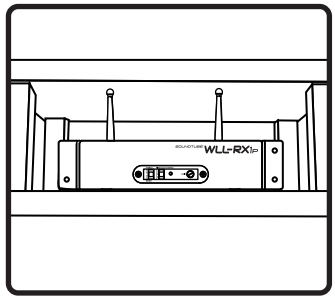
WLL-TR-1p | Install Instructions For:

WLL-TR-1p (WLL-TX1 transmitter and WLL-RX1p receiver/amp).

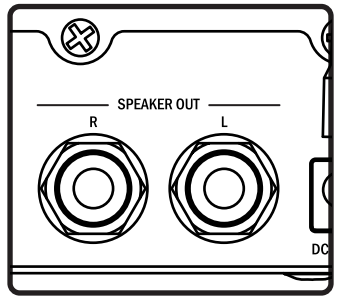
WLL-RX1p Install Instructions



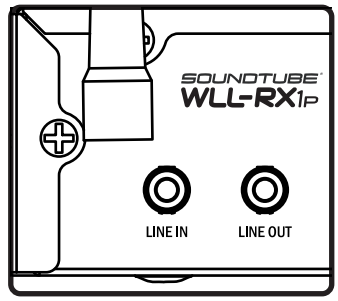
1. Remove unit from box.



2. Determine location for placement of WLL-RX1p. The WLL-RX1p may be installed in an equipment rack (half rack adapter required) or on a shelf. The antennas may be remoted using a wifi antenna cable (not included; available through third party vendors).

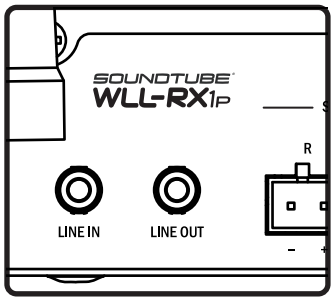


3. Connect 4 ohm or 8 ohm speakers to the L and R channel output leads using the Euroblock connectors and push into place in the appropriate SPEAKER OUT locations. Alternatively, speakers may be connected via ¼" plugs at the L and R "SPEAKER OUT" jacks to the right of the Euroblock connectors. Do not connect both. Be certain to check for the correct connection polarity.

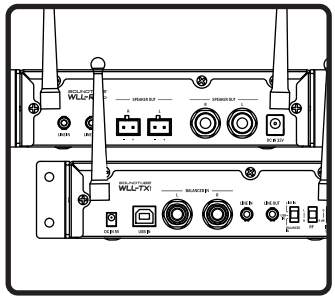


4. If desired, a direct audio source can be connected to the WLL-RX1p via the mini "LINE IN" jack. Note: If an audio source is connected to this input, it will interrupt any RF feed being sent via the WLL-TX1.

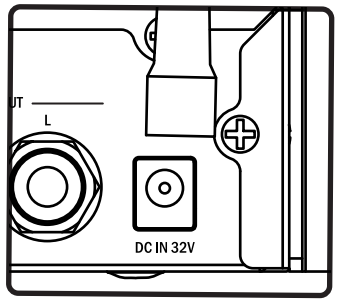
Installation Notes: 2a: an installation that puts the WLL-TX1 in line-of-sight with the WLL-RX1(p) will provide the best results. 2b: Do not install transmitter more than 230 feet (70 meters line of site or 50 meters indoors) from the desired receiver location(s). 3a: Unit output is 50 watts per channel.



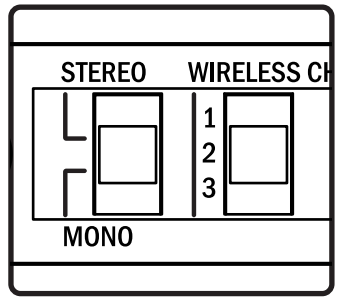
5. If desired, a fixed LINE OUT audio signal is provided by the stereo mini jack for operating a device such as an ADA hearing assistance system.



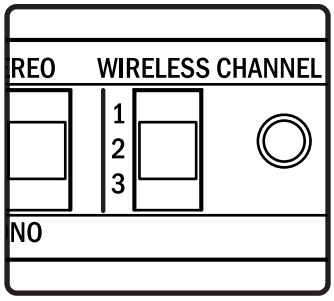
6. For best results, Transmitter and Receiver antennas should face the same direction (either vertically or horizontally).



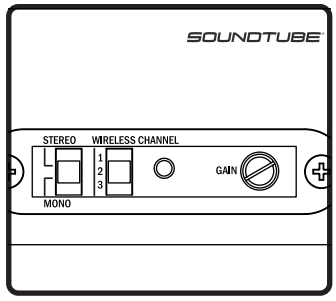
7. Connect the power supply to the DC IN 32V power connector.



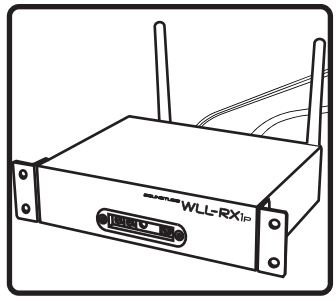
8. Select either the Stereo or Mono operation mode via the selector switch on the front panel.



9. Select the receiving channel 1, 2 or 3 on the front panel. NOTE: the WLL-TX1 must be set on the same channel.



10. Apply power to unit. Adjust front panel gain control as needed.



11. Done!

Note: If the signal appearing at the receiver is intermittent or noisy, (a) make sure the transmitter's RF Gain switch is on High; (b) change the location of the transmitter and/or receiver for line-of-sight position with one another; (c) place the antennas in a line-of-sight position using an antenna extension cable (available from third party vendors).

WLL-TR-1p | Install Instructions For:

WLL-TR-1p (WLL-TX1 transmitter and WLL-RX1p receiver/amp).

Transmitter Interference: If the WLL-TX1 causes interference with other wireless devices in the area, try the following: (a) select a different channel setting on both the transmitter and receiver (step 10); (b) change RF Gain switch to Low setting (step 7); (c) alter antenna positions on both transmitter and receiver (antenna positions should match each other).

If using two WLL-TX1 units separate them by at least 2 ft. If using 3, separate them by at least 5 ft. When using more then 3 transmitters, the RF switch should be set to low if the systems are within 60-70 ft. of each other.. If they have problems establishing a link with the WLL-RX1 move the WLL-TX1's further apart. The transmitting signals can interfere with each other if they are too close together.

FCC Notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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 generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which 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:
(1) Reorient or relocate the receiving antenna. (2) Increase the separation between the equipment and receiver. (3) Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. (4) Consult the dealer or an experienced radio/TV technician for help.

To satisfy FCC RF exposure requirements, a separation distance of 20 cm or more should be maintained between this device and persons during device operation. To ensure compliance, operations at closer than this distance is not recommended. The antenna used for this transmitter must not be co-located in conjunction with any other antenna or transmitter.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Pour satisfaire aux exigences de la FCC d'exposition aux radiofréquences, une distance de séparation de 20 cm ou plus doit être maintenue entre cet appareil et des personnes lors de fonctionnement du dispositif. Pour assurer la conformité des opérations au plus près que cette distance n'est pas recommandée. L'antenne utilisée pour ce transmetteur ne doit pas être co-localisés en conjonction avec toute autre antenne ou transmetteur.

Cet appareil est conforme à la Partie 15 des règlements de la FCC. L'opération est soumise aux deux conditions suivantes: (1) cet appareil ne peut causer d'interférences nuisibles, et (2) cet appareil doit accepter toute interférence reçe, y compris les interférences qui peuvent provoquer un fonctionnement indésirable.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

MPE Notice

To satisfy FCC RF exposure requirements, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation. To ensure compliance, operations at closer than this distance is not recommended.

Les antennes installées doivent être situées de facon à ce que la population ne puisse y être exposée à une distance de moin de 20 cm. Installer les antennes de facon à ce que le personnel ne puisse approcher à 20 cm ou moins de la position centrale de l' antenne. La FCC des états-Unis stipule que cet appareil doit être en tout temps éloigné d'au moins 20 cm des personnes pendant son functionnement.

WLL-TR-1p | Install Instructions For:

WLL-TR-1p (WLL-TX1 transmitter and WLL-RX1p receiver/amp).

IC Notice

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Only for detachable antennas: This radio transmitter (identify the device by certification number, or model number if Category II) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Le présent émetteur radio (identifier le dispositif par son numéro de certification ou son numéro de modèle s'il fait partie du matériel de catégorie I) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.
Gain d'antenne: 2.0dBi maximal
Type d'antenne: 50 Ω BNC, monopole antenne

For Module only:
Information for the OEMs and Integrators- This device is intended for OEM integrators only. Please see the full Grant of Equipment document for restrictions. This device must be operated and used with a locally approved access point.
Label Information to the End User by the OEM or Integrator- If the FCC ID of this module is not visible when it is installed inside another device, the the outside of the dvice into which the module is installed must be labeled with "Contains FCC ID: SU3RM2400A" in a visible area.

WLL Operational Description

WLL are the wireless audio transmitter and receiver with amplifier. The transmitter units with one 3.5 JACK, one RCA analog audio input and one USB input source. The WLL system include the wireless audio transceiver module is an uncompressed wireless digital audio transceiver operating in the 2.4GHz ISM band. The wireless audio link supports up to 4 uncompressed high quality and low latency stereo audio channels in various network topologies. A unique set of protocols and algorithms provides extreme wireless robustness, capable of dealing with multiple interference sources as present in the 2.4 GHz band. In addition, a wireless bi-directional data channel is available (e.g. to control the volume of the receiver from the transmitter).

The wireless module communication has 3 channels, whose center frequencies are CH1: 2412MHz, CH2: 2438MHz, CH3: 2464MHz respectively. Each frequency's bandwidth is 22MHz. Transmitter is used for the Central Unit and with external antennas through the use of 2 I-PEX coaxial RF connectors (for TX and RX diversity).Two antennas are not used in the same time. Two antennas are dynamic switching by the diversity switch according to the signal strength the transceiver will automatic select is which antenna.

The Clock and synthesizer frequencies

The main crystal is connect to the radio IC crystal oscillator. This in turn buffers this 22MHz crystal and feeds it to the BB.

The RF oscillator runs at 4/3 times the programmed RF output frequency. In standard configurations, the transceiver module runs at the following frequencies:

2.4GHz band: The RF oscillator runs at 4/3 times the programmed RF output frequency.

Channel	RF frequency(In MHz)	VCO frequency(in MHz)
1	2412	3216
2	2438	3250.67
2	2464	3285.33