XSJB/XFSB User Manual
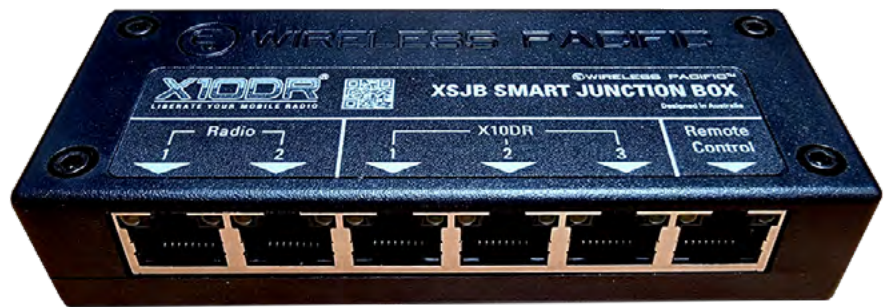
XSJB
Dual Radio Function

features:

- *1-3 X10DR Gateways / XTBM Talkback Mic*
- *Radio Identification marker tone*
- *Handsfree mode supported*
- *Programmable Audio levels*
- *Supports LMR and LTE - PoC operation*
- *Off Net Talkaround not supported*

XFSB
Advanced Firefront™ Functionality

features:

- *as per XSJB plus*
- *Off Net Talkaround supported*
- *XCCP Console Control compatibility*

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Solid Green LED = Radio On
Solid Orange LED = PTT Active
Flashing Orange LED - Emergency triggered

XSJB Operation

The XSJB (V2) allows multiple (max 3) X10DR gateway / XTBM Talkback Mic devices to be connected to 2 separate host radios, PoC Smartphone, satellite link terminal devices, etc.

The X10DR Elite Plus or Pro Plus out of vehicle solutions should be configured to suit your specific user application preferences. Read and understand this user guide before deployment for best operational performance.

A/ DEFAULT HANDSET TRANSMIT CONFIGURATION

When the X10DR side PTT button is pressed the handset will transmit on the radio device connected to the Radio 1 port. When the top centre "Control" grey colored button is pressed the handset LED will change to GREEN and the handset will transmit on the radio device connected to the Radio 2 port.

B/ RECOMMENDED ELITE PLUS HANDSET TRANSMIT CONFIGURATION

We highly recommend use of the **Toggle PTT/TA Mode** programmable Elite Plus handset feature for all situations where control of two radio/wireless devices is implemented. When enabled, the grey colored top Control button *toggles* which radio port the handset's main side PTT button will transmit on, i.e. either Radio 1 or Radio 2. Each time the grey button is momentarily pressed, the handset's LED will toggle between Blue to indicate it is set to transmit on Radio 1 and Green when Radio 2 is selected.

Note 1: Only one X10DR handset user should talk on one radio at anyone time but all can hear both sides of all conversations.

RECEIVE MODE OPERATION

Receive audio from both connected radio/wireless devices is presented to all X10DR / XTBM handset users. To allow users to more easily identify which device's audio is currently being heard, a short, level programmable, identification marker beep is attached to the end of every* received transmission.

Note 2: The radio/wireless device, attached to Radio 2 port, requiring a marker identification tone must have a COR input simultaneously presented to the XSJB whenever audio is received. If neither connected wireless devices can provide a COR status indication, then it is not possible to provide the handset users with the said capability.

* Marker beep only available when attached radio device is able to present a COR (Speaker unmute indication) to the Smart Box.

Liberate Your Mobile Radio™

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XFSB Operation

The XFSB allows multiple (max 3) X10DR gateway / XTBM Talkback Mic devices to be connected to 2 separate host radios, PoC Smartphone, satellite link terminal devices etc.

The X10DR Elite Plus or Pro Plus Out of Vehicle Solutions should be thoughtfully configured to suit your specific user application preferences. Choice of Transmit Configuration and Receive Mode operation is identical to the XSJB Model. Read and understand this user guide before deployment for best operational performance.

OFF NET - DUAL RADIO TALKAROUND OPERATION

The more advanced XFSB Smart Interface model additionally supports off network talkaround operation in addition to providing out of vehicle access to two radio/wireless devices.

To put a handset into Off Net Talkaround mode, press the pre-assigned (per X10DR programming - see later in this document) Off Net talkaround enable/disable button, and a two tone, *upward sounding*, tone sequence will sound in the initiator and all other associated handsets. Thereafter, whenever any handset's PTT button is pressed the transmitting handset will only talk to other handsets connected to the gateways fitted to that vehicle/office deployment. Also, the XFSB can be programmed so that whenever any handset transmits a unique talkaround short beep (volume level programmable) will sound in both that handset and in all other associated handsets. In this manner, all users will importantly know the vehicle's X10DR system is only transmitting locally and not over the host radio network/s.

To disable Off Net Talkaround **any** handset user just needs to press the same pre-assigned button and a '*downward sounding*' dual beep will confirm the system is back to normal "on network" operation. Importantly, these advisory tones iare sounded in all handsets so that all users are aware that all transmissions will be again over the selected host radio network/s.

Consistent with all multi-handset X10DR systems, regardless of the selected transmit operating mode, ALL** received audio, from either host radio/wireless device will always be heard by all X10DR handset users. **See XCCP Operation for exceptions.

XCCP Operation

An XCCP Console Command Post may be connected to the XFSB's Remote Control port. The purpose of the XCCP is to allow in-vehicle 'Commander' control of which gateways and their paired handsets, can access which attached radio/wireless device. This includes the selective ability to allow receive only or transmit/receive access to handsets associated with each of the possible 3 connected gateways.

HANDSFREE - LOCAL OFF NET FULL DUPLEX OPERATION (Elite Plus Models only)

The XSJB and XFSB additionally supports Handsfree, local, off network talkaround (intercom) operation across multiple gateways for all paired Elite Plus handsets. To ensure reliable operation in all environments, we recommend that all handsfree users be equipped with ideally, an audio headset (e.g. WPHFH-X10/WPULH-X10/WPSHD-X10 etc) or, as a minimum, provided an earpiece to be plugged into each associated handset's 3.5mm audio jack to prevent audio feedback loops.

Handsfree activation.

Elite Plus handsets intended for handsfree use must first be pre-activated using the XFPK X10DR programmer. Depending on the system configuration type, the following methods can be used to enable/disable handsfree operation.

Single Radio Deployment - Default PTT button settings

For default configured handsets, quickly double press the top middle grey colored Control button. Unique ascending tones will sound to indicate handsfree has been activated and the LED will change to a magenta/purple color. To disable, press the grey Control button once. Descending tones will sound and the LED will revert to its original color.

Single Radio Deployment - Toggle PTT button setting

For toggle PTT configured handsets, with the side PTT button assigned to talkaround position (LED glowing Green) quickly double press the side PTT button. Ascending tones will sound to indicate handsfree has been activated and the LED will change to a magenta/purple color. To disable, short press the side PTT button once and de-escalating tones will sound and the LED will revert to Green.

Dual Radio Deployment - Default PTT button settings

For default configured handsets, quickly double press the top middle grey colored Control button and unique escalation tones will sound to indicate handsfree has been activated and the LED will change to a magenta/purple color. To disable press the grey Control button once. Descending tones will sound and the LED will revert to its original color.

Dual Radio Deployment - Toggle PTT button setting

For toggle PTT configured handsets, with the side PTT button assigned to Radio 2 position (LED glowing Green) quickly double press the side PTT button and unique ascending tones will sound to indicate handsfree has been activated and the LED will change to a magenta/purple color. To disable, short press the side PTT button once. Descending tones will sound and the LED will revert to Green.

XSJB/XFSB PROGRAMMING INFORMATION

Initial Setup

Download XSJB/XFSB Programmer Software from: https://www.x10dr.com/supports and install on PC.

Connect power to XSJB/XFSB via Radio 1 or 2 connector.

Start XSJB/XFSB programmer (i.e. PC software).

Connect to XSJB/XFSB micro USB port. (Suggest use Gateway XFPK gateway programming cable)

XSJB/XFSB software will auto-detect model type and firmware version.

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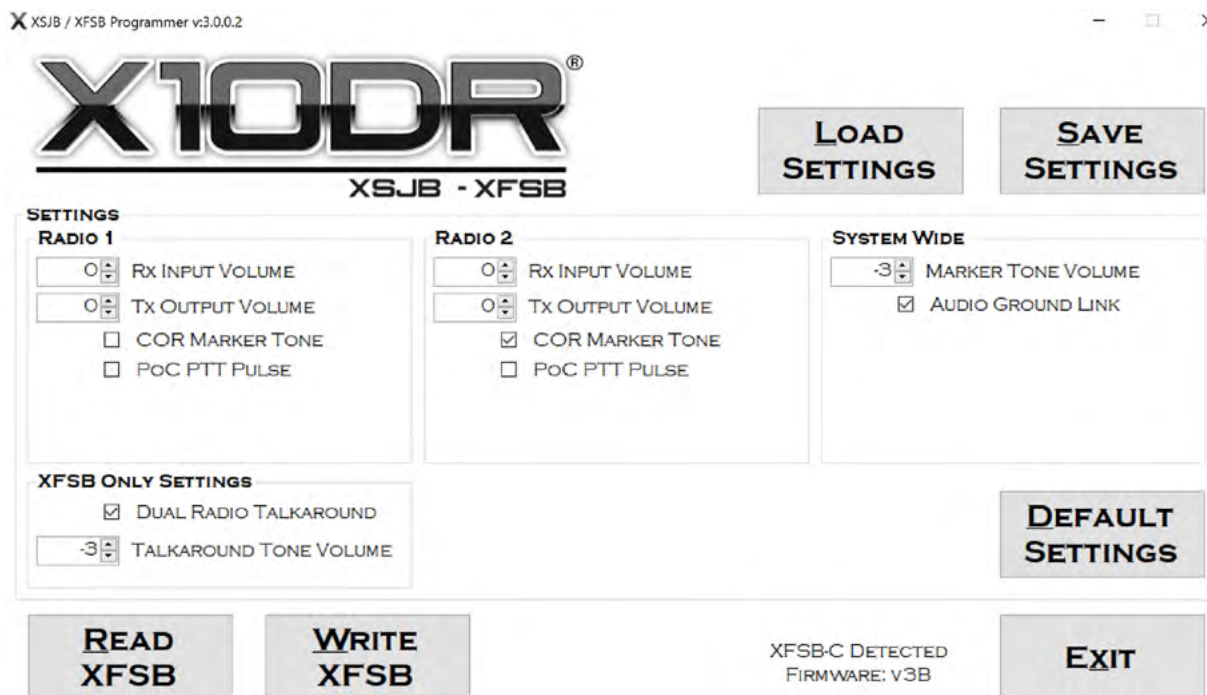
Button/Field Description

"Load Settings" / "Save Settings" - Loads or saves settings from/to the PC hard drive/USB etc for later use.

"Default Settings" - Resets everything back to factory settings.

"Read" - Reads the current settings programmed from the XSJB/XFSB into the software.

"Write" - Writes the currents settings from the software into the XSJB/XFSB.

"Exit" - Closes application.

Rx Input Volume – Sets the audio levels to match the radio/ wireless devices' received (off air) audio into the X10DR speaker.

Tx Output Volume – Sets the audio levels to match the X10DR microphone audio to the attached host radio/wireless devices' transmit (over the air) audio. Can boost or lower the levels.

COR Marker Tone – Adds marker tone to tail of each reception, 1 beep Radio 1 & 2 beeps Radio 2. Note: the devices connected to radio port MUST provide a COR/ Speaker unmute indicate for this feature to be operable.

PoC Pulse PTT – Changes radio port PTT output to 150mS pulse PTT ON / 150mS pulse PTT OFF.

Dual Radio Talkaround – Enables XFSB Dual radio control with Off Network Talkaround.

Talkaround Tone Volume – Sets the volume of the 3 beep Talkaround leading edge PTT tones. Note: For user friendly operation, we suggest that the handsets standard Talkaround PTT key beep be disabled.

Marker Tone Volume – Sets the level of radio identification marker tone at the end of each reception.

Audio Ground Link – When ticked, links DC ground (RJ45 Shield) with Audio Ground (RJ45 Pin 5). When unticked, they are isolated. This can be useful to help residual ground noise effecting audio transmission quality, specifically with TDMA systems, P25 Ph2, TETRA, MotoTrbo, DMR etc.

Pre-Deployment Audio Alignment

To align the XSJB/XFSB you will need a test radio/s on the same channel/s as your host radio/wireless device/s so that you can talk to and monitor the X10DR audio levels.

Start by setting the receive audio volume on the X10DR handset to level 5 by pressing the volume up button 7 times and then press the volume down button three times. Next talk on the test radio and adjust Radio 1 Rx Input Volume to set the receive volume in the X10DR. Compare with loudness of another X10DR Handset transmit audio, if applicable. Levels should be loud, clear and comfortable for outside vehicle listening.

Next talk on the X10DR microphone via Radio 1 and adjust Radio 1 Tx Output level so that it matches the host radio's wired mic levels. Listen on the test radio for clarity and volume.

Repeat the process for Radio 2, adjusting Radio 2 Tx Output Volume for transmit deviation, and Radio 2 Rx Input Volume for receive volume.

Receiver Marker Tone Adjustment

Both Radio ports offers a selectable **marker tone** added at the end of receive to distinguish source of received audio (only available with radio devices which have a COR indicator). Momentarily transmit on the test radio on the same channel as radio port be aligned and notice the beep heard in the X10DR at the end of each transmission. Adjust Marker Tone Volume to set preferred volume. Note: setting the marker tone level too loud may cause user dissatisfaction within a few weeks of usage. The recommended level setting is "just" audible.

Talkaround Tone Adjustment

Enabling **Dual Radio Talkaround** on XFSB models offers a distinct 3 beep confirmation tone at the start of every *off network* Dual Radio Talkaround transmission to distinguish them from *over the network* transmissions. The Talkaround Tone Volume level can be adjusted by the XSJB/XFSB programmer.

To correctly align, activate Dual Radio Talkaround mode. Notice all handsets will hear Talkaround Active alert tones. Now press the PTT button and talk on any handset and notice the Talkaround confirmation beep volume in comparison to the voice audio. Adjust Talkaround Tone Volume to preferred contrasting level.

Note: Setting the Talkaround tone level too loud may cause user dissatisfaction within a few weeks of usage. The recommended level setting is "just" audible. Once completed, disable Off Net Talkaround and again note that the accompanying alert tones are not objectionable. Repeat adjustment as necessary.

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Note: Pro Plus models use default programming as they do not support handsfree and are not recommended for Talkaround use.

Handset / Gateway Programming (X10DR V4 or later firmware required)

For correct and user friendly operation, we recommend the following parameters should be pre-programmed into each Elite Plus handset and gateway connected to the specific dual radio deployment.

Top 1 Top 2

Right 1

Left 1

Left 2

Elite Plus Handset Programming

1/ Handsfree Function ticked.

2/ Toggle PTT/TA Button Assignment ticked.

3/ Talk Around PTT Key Beep unticked.

4/ Aux 1 (used for Talkaround enable/disable).

Assigned to either:

   a/ Short press Top 1 (orange).

   with Emergency set to Long press Top 1 (orange).

   timing 2 -5 seconds to minimize falsing.

   b/ Short Press Right 1 (red) with

   with Power ON Long press Right 1 (red).

   and Power OFF Long press Left 2 (bottom blue).

   c/ Long Press Left 2 (bottom blue) with

   Volume Up short press Left 1 (top blue).

   Volume down short press Left 2 (bottom blue).

Elite Plus Gateway Programming

1/ Function 5 - Handsfree enabled.

   Active High - Pulse 0mSec.

2/ Function 6 - Aux 1.

   Active High - Pulse 50mSec.

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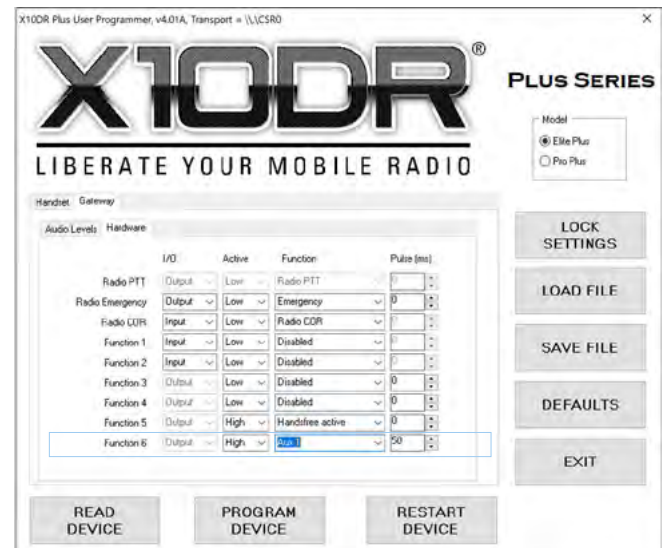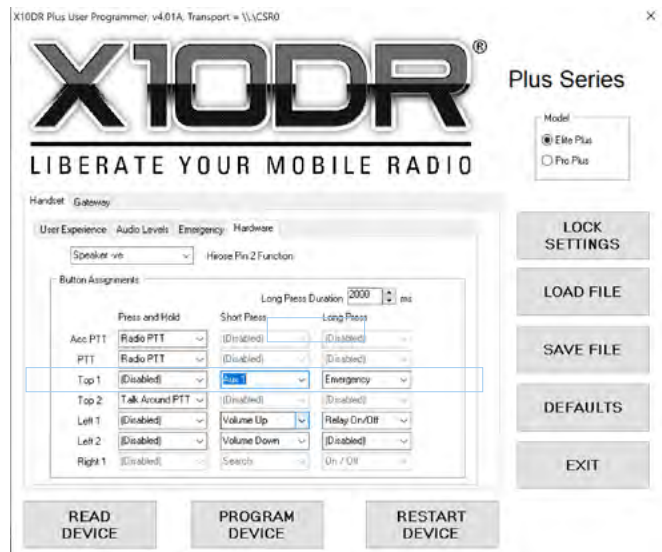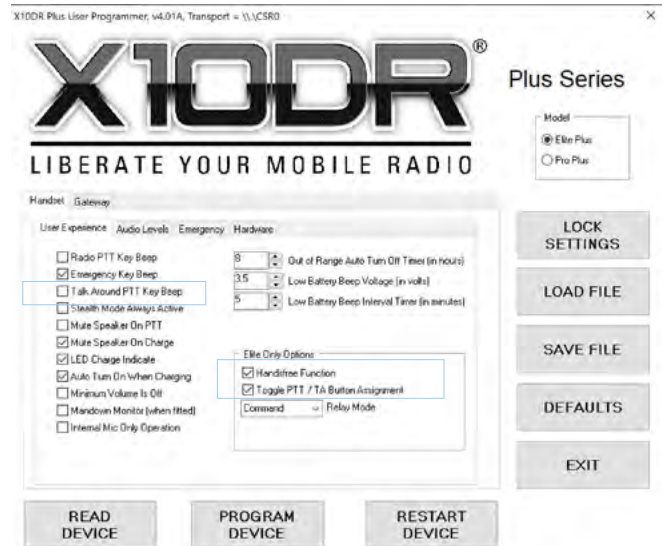
ADDITIONAL INFORMATION

LTE - PTT OVER CELLULAR - POC SUPPORT - IMPORTANT OPERATIONAL REQUIREMENT

The XSJB/XFSB programmer allows radio ports 1 & 2 to be configured to individually provide a traditional PTT switched ground output for the duration of the PTT period or alternatively, when used for mainstream typical PoC operation where the PTT output needs to be pulsed (150mSec duration) to key the PoC smartphone device followed by a second pulse to dekey the device.

Special care **must be taken** in the choice of LTE - PoC application/Smartphone combination deployed. The combination chosen **MUST ALWAYS** ensure that the PTT function has ultimate priority, such that, the PoC device will always enter transmit mode when an initial PTT pulse is presented and immediately dekey the transmit function when a following pulse is presented. Any PoC combination that does not provide this level of dependability is **not recommended for professional mission/business critical use**.

TDMA/Non TDMA Radios

Whilst the XSJB/XFSB provide three X10DR ports, normally only one X10DR gateway may be connected if either of the attached host radios use TDMA technology. To connect two or more X10DR gateways devices with host TDMA radios, the host radio devices should connect via XJB-DCI junction box or a XCA-DCI In-line 15W DC isolation adaptor so as to avoid unwanted TDMA noise passing from the host mobile radios/wireless devices. Non-TDMA installations do not have this configuration requirement and if desired multiple X10DR gateway devices can be connected to XSJB/XFSB units "X10DR" ports 1, 2 & 3.