

Elite Plus Application Notes

Jan 1st 2024

X10DR Elite Plus Handset



X10DR Elite Plus Gateway



XRTG Elite Plus Gateway



base view

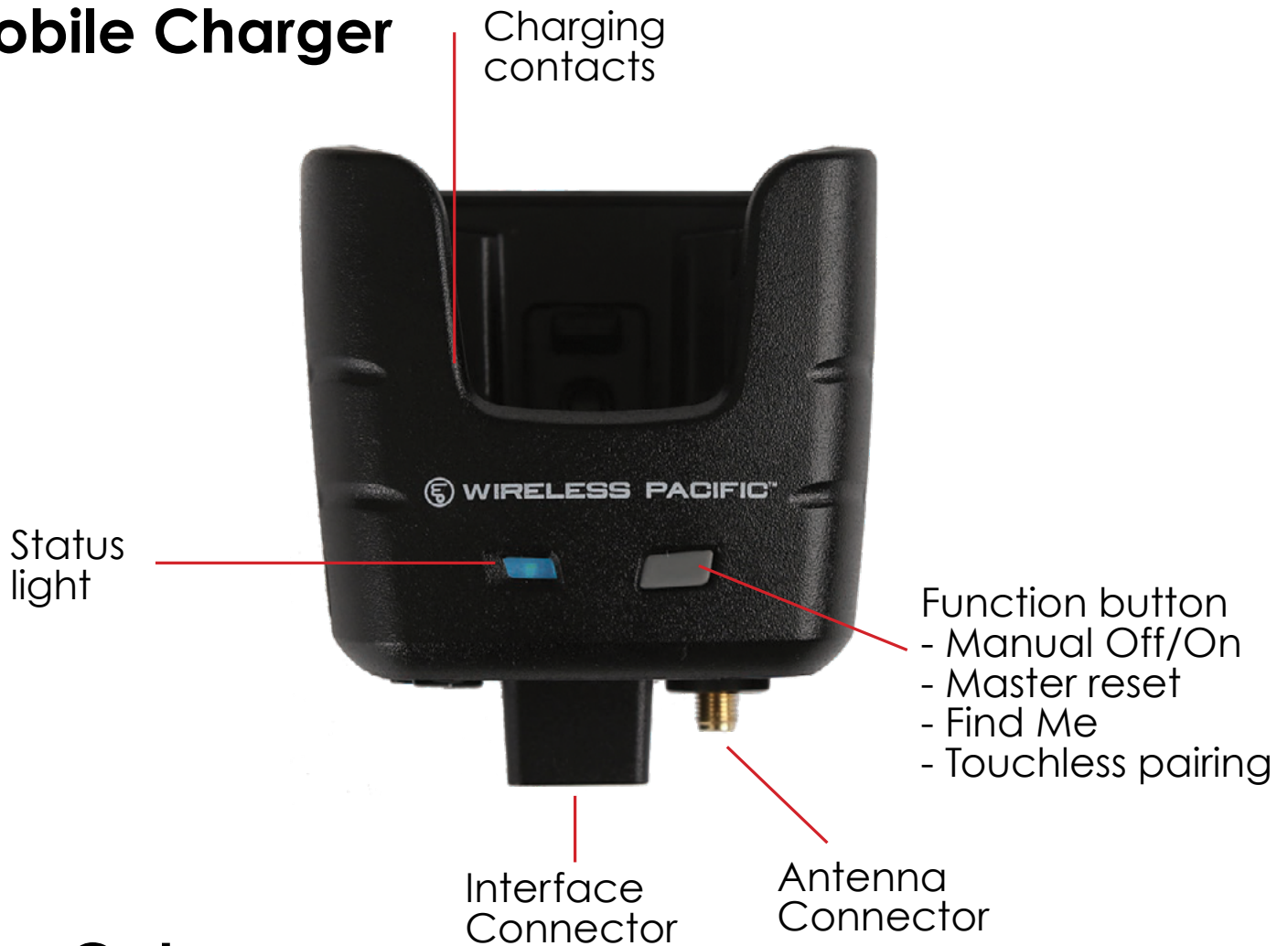


XIVG Elite Plus Gateway

Plus Secure Wireless Handset



Plus Gateway Mobile Charger



Plus Gateway base view



XRTG Plus Gateway



XIVG Gateway

Use with X SMA2 Antenna when more limited coverage is required in a vehicle or in office/warehouse applications where maximum range is required.

SMA external antenna port

Interface port

Status light



USB programming port

Function button
- Manual Off/On
- Master reset
- Find Me
- Touchless pairing

	Page
Handset Parts	2
Gateway Parts	3
Antennas	6
Index	5
Interface Cables	7
After Hours charging	8
TDMA DC isolation solutions	9
XDIA, XJB, XSJB & XFSB Overview	10
1 Single Elite Handset / one Gateway	11
2 Dual Elite Handset / one Gateway	12
3 Triple Elite Handset / three Gateway	13
4 Four Elite Handset / two Gateway	14
5 Single Elite with Public Address	15
6 Single Elite with dual mobiles	16
7 Dual Elite HS / one GW with dual mobiles	17
8 Four Elite HS / two GW with dual mobiles	18
9 Single Elite Mandown with 1/2 mobiles	19
10 Single Elite Motorcycle with 1 mobile	20
11 Single Elite Motorcycle with 2 mobiles	21
12 Four Elite HS / 2 GW Office application	22
13 Triple Elite HS with XRTG in Warehouse	23
14 Triple Elite HS with three XRTG in Sports Arena	24
15 Six Elite handsets and three XRTG gateways	25
16 Three Elite HS no Gateway "Portable APP"	26
17 Two Elite HS/one GW - Advanced Emergency	27
18 Handsfree triple Elite Handset / one Gateway	28
19 Handsfree four Elite HS / two GW one mobile	29
20 Handsfree six Elite HS / three GW one mobile	30
21 Handsfree four Elite HS / two GW dual mobile	31
Third handset use deployment information	32



XMPA

Multipolarity roof/rack mount antenna kit



XMCAK

1/4 wave rack mount antenna kit



XMMA

Magnetic mount vehicle antenna kit

Use of an external antenna with careful placement is critical if dependable coverage range is to be achieved around the vehicle. To ensure the user experiences a consistent predictable coverage “bubble”, the antenna should be ideally installed on a vehicle so that it has an unobstructed view in all areas where the user may walk.

On some installations however, it may make sense to mount the antenna on a front bull bar if, for example, the user typically would generally try to park the vehicle in the direction of where they intend to mostly communicate. By the same token, if the rear of the vehicle would normally face the users work area, then it may make sense to mount the antenna in a location overseeing the rear of the vehicle. Each vehicle may have its own natural obstacles to deal with, whether they be light bars, ladder racks, storage tubes, etc but as a general rule, the installer should always endeavour to mount the antenna where the user could visually see the XMPA/XMCAK/XMMA antenna from the area they would expect to communicate from. If there is any particular directivity anticipated due to the antenna’s placement, sharing that anticipated coverage bias with the user will help them establish a clearer understanding of where they should get good reception and where it may be less than perfect when they park their vehicle.

The X10DR Elite and Pro Plus models are usually supplied with a XMPA **multi-polarity antenna** so that the best possible coverage in all overall operating environments can be experienced to each user. Multi-polarity antennas generally provide superior coverage in non ‘line of sight’ coverage situations, especially when talking into concrete walled buildings or around building corners or other physical obstacles to line of sight communications.

Where X10DR installations require use of multiple antennas, endeavour to keep the antennas ideally at least 1 meter (39”) apart for best performance. The installer should also pay careful attention to the mounting locations of all antennas to make sure that each user have as similar coverage experience as is practically possible.



XSMA2 antenna (shorter range - internal use)

In some installations only limited coverage may be required around a vehicle, for example: a pump attendant on fire appliance or when an X10DR is used for mobility for fixed radio console operators in a control room. In those situations it may be more practical to alternatively, simply screw on a XSMA2 antenna directly to the base of the X10DR or XIVG gateway unit.

XIC/XEC Series

Interface Cables Use with radio specific XCA series adaptors



The X10DR gateway device connects to the mobile radio's rear accessory port by way of a supplied 1.5m (5') XIC interface cable and a separately ordered radio model specific XCA series adaptor.

XIC-0.15/ XIC-0.4 / XIC-0.5 are short interface cables intended to connect between interface boxes and devices.

XCA adaptors are available for most popular mobile radios while adaptors for other models or for unique equipment interfaces can be supplied by custom order.

For remote mounted mobiles, XEC-4.5 extension cables are 4.5 meters (15') in length are available to facilitate mounting the mobile radio in the vehicles trunk. Multiple XEC-4.5 cables can be connected for long installation runs although the number of X10DRs connected to the cable run must be considered with regard to possible DC voltage drops. Additionally, remote mount cables, 6m(20') /10m (33') /25m (83') are available when a single cable is preferred.

Note: The XRTG Plus series use a white flat interface cable.

Installations requiring custom requested specific length cables - available on special order - MOQ 200 pieces.



XCA-***

Radio Specific Cable Adaptor

*** refer price pages for currently available models

XPB-C14 “After hours” Power Backup Box for “isolated” vehicle battery installations 10-16 Volt DC input-7.5VDC output

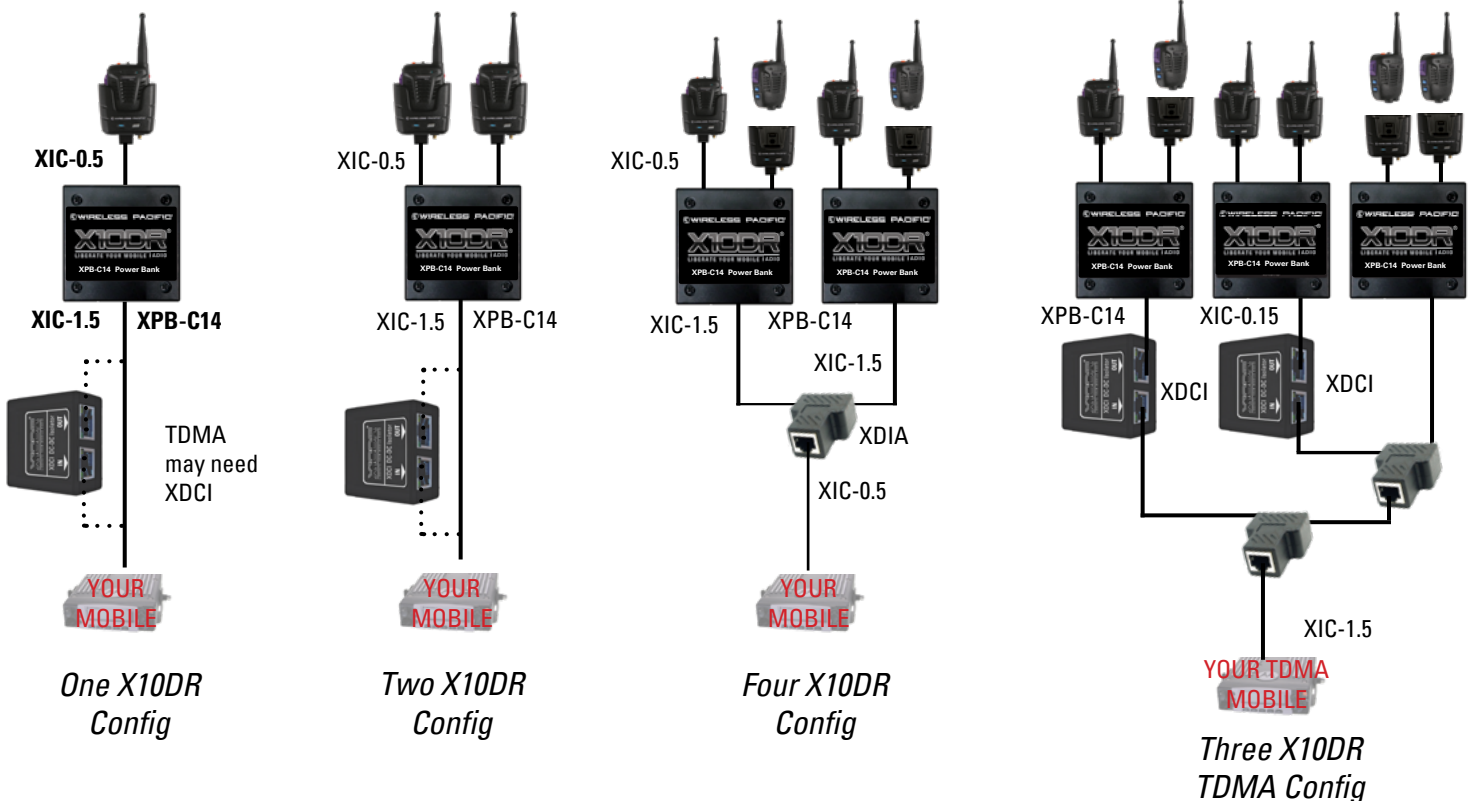


Operational regulations in some agencies require that vehicles have their batteries isolated and disconnected from auxiliary electronic devices at night or whenever the vehicle is being garaged. In such installations, DC power will not be subsequently available for re-charging X10DR Wireless Mics that only are returned to the charging cradle at the end of the work day.

For such installation Wireless Pacific created the XPB-C14 Power Bank. The power bank is fitted in line with the standard XIC interface cable that connects the X10DR Gateway Cradle to the host mobile radio. Unless fully charged the power bank re-charges whenever the vehicle’s power is available ensuring it is always fully charged and available, should the vehicles’ battery be isolated from the X10DR device. When a vehicle’s DC power is removed, the XPB Power Backup Box instantly provides enough reserve DC power to fully re-charge one or two X10DR 80% discharged handsets while the vehicle is garaged. When the vehicle battery is reconnected the XPB automatically re-charges while powering the attached X10DR devices. The XPB-C14 can also provide two X10DR gateway’s to be connected to the one mobile radio (Handsfree N/A). Connection to a TDMA radio may also require use of XDCI DC-DC isolation junction box if the system suffers from audio noise generated by the TDMA host radio.

Suggested configurations are shown below:

Ordering: 1 x XPB-C14 for every two X10DR connected
1 x XIC-*** per XPB-C14 ordered



* AC Plug - US/EU/AU
** to suit radio model
*** Choose XIC length to suit

XDCI Multi interface unit with DC isolation 9-16 Volt DC input-12VDC output

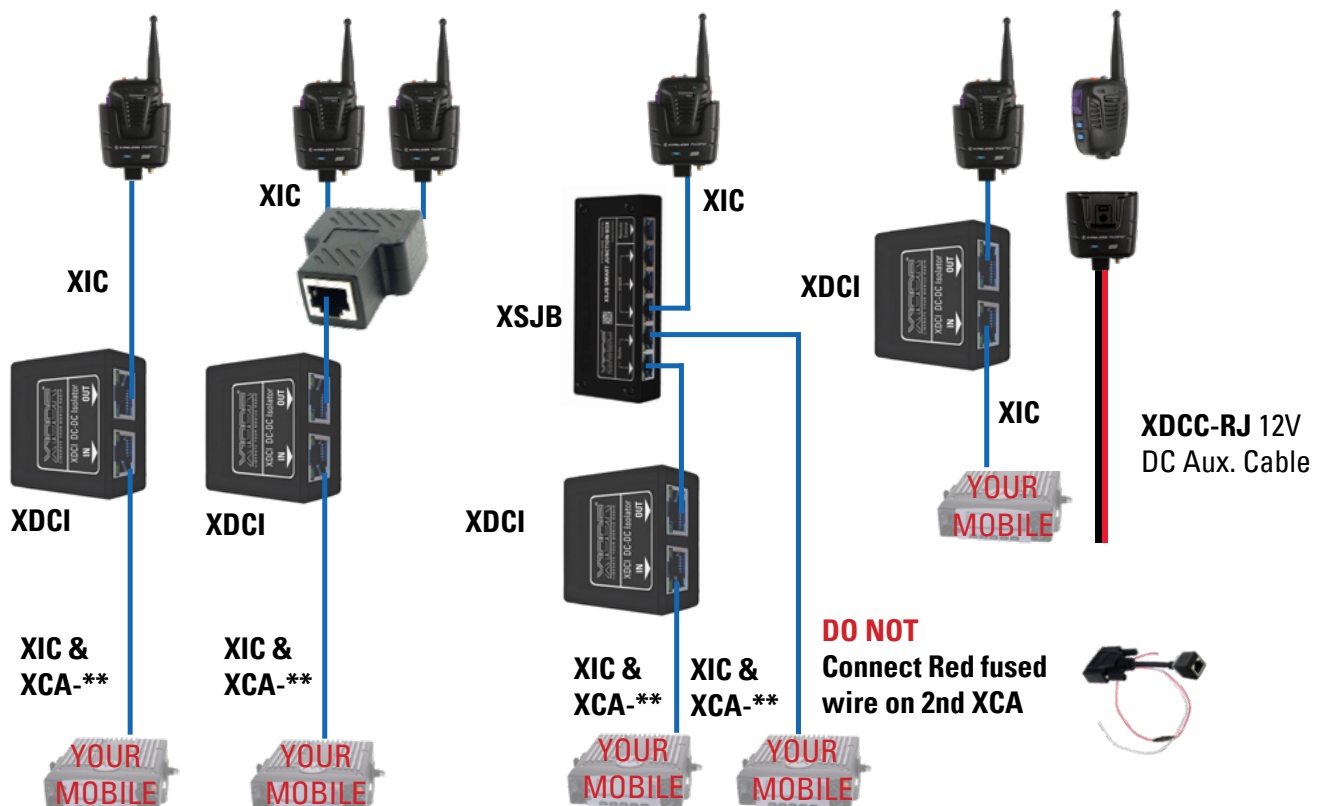


Connecting modern day digital devices requires careful attention to device **grounding**. Installers should pay special attention to ensuring good grounds are achieved to all antenna mounts and power supplies of all electronic devices. The necessity for good grounding becomes especially important where the quantity of devices sharing a common power supply expands in complexity. Refer to the X10DR Plus Installation Guide for further information.

Modern radios incorporating TDMA digital modulation are especially susceptible to creating “ground noise” especially in higher power circuits. Unfortunately, these unwanted ground noises can sometimes be superimposed onto sensitive audio circuits resulting in an annoying buzz being audible in voice transmissions. Experience tells us also the amount of noise heard can be dependent not only on the number of devices connected but by the manufacturer or even by production run of various equipment.

The XDCI has been designed to significantly reduce the levels of these TDMA ground noises and provides 12V isolated DC outputs to connect up to three X10DR Gateways.

We recommend use of our XDCI Junction box rather than the standard XDIA interface devices when interfacing multiple X10DRs to ALL TDMA radios. TDMA radios include all TETRA, DMR, MotoTrbo and P25 Phase II radios. Note: The XDCI provides DC isolated 12 volts to operate the X10DR devices and connects in series with the XIC interface cable running to the Gateway base. Suggested configurations are shown below.



Smart and Standard Junction Boxes

Multi RJ45 based interface units



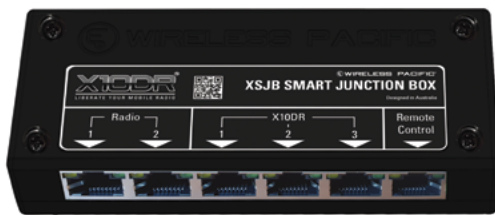
XDIA Dual Interface Adaptor

- Dual X10DR non TDMA radios
- Simple Dual splitter



XJB Junction Box

- 6 way interface unit
- Up to six RJ45 X10DR devices



XSJB Smart Junction Box

Provides for dual radio control with single or dual gateway connectivity. The Control port provides external access to the Refer to XSJB installation instructions for further details.

Dual radio transmit is achieved by pressing normal handset PTT for radio 1 and pressing the top "Control" (normally used for Talkaround) button for radio 2 transmit. All received audios are mixed and sent to handset/s. If desired, radio 2 receptions can have a short audio beep attached to end of

Radio 1 Radio 2 X10DR Ports 1/2/3 Control Port
each reception so that users can be sure on which radio the reception occurred. The audio level adjustments allow you to set transmit and receive volume levels to each radio as well as the audio level of the radio 2 audio tag. XSJB also also handsfree operation between multiple Elite Plus Gateways. Note: "Off network "talkaround is not available when dual radio control is required when using the XSJB. Users however still hear both sides of all conversations. If you also require talkaround, use the XFSB advanced Firefront model.



XFSB FireFront Smart Box

Provides three ports for single or dual radio control PLUS Talkaround for one, two or three gateways. Dual radio transmit is achieved by pressing normal handset PTT for radio 1 and pressing the top "Control" (normally used for talkaround) button for radio 2 transmit or use Toggle PTT button function to use the top grey button to select which radio the side PTT button transmits over. All received audios are mixed and sent to handset/s. Radio 2 receptions

Radio 1 Radio 2 X10DR Ports 1/2/3 Control Port
can include a short audio beep attached to end of each reception so that users can be sure on which radio the reception occurred. The audio level adjustments allow you to set transmit and receive volume levels to each radio as well as the audio level of the radio 2 audio tag. XFSB also also handsfree operation between multiple Elite Plus Gateways. "Off network" talkaround is also available when dual radio control is required via use of Aux 1 being assigned to short press of either the Orange or Red buttons by programming both XFSB and Handset device.



The X10DR is connected to the one mobile radio. The user can hear all radio communications as well transmit over the network using the highly textured PTT button. All radio system tones or those emanating from the host mobile will generally be heard by the X10DR user via its duplex audio capability regardless of whether the user is transmitting or not from the X10DR Secure Mic. These tones may include but are not limited to: transmit timer alerts, channel busy tones, talk permit tones, failsoft trunk tones, radio out of range tones, ruthless pre-emption transmissions, etc.

Note: Refer to interface cable, TDMA and antenna application notes before ordering.

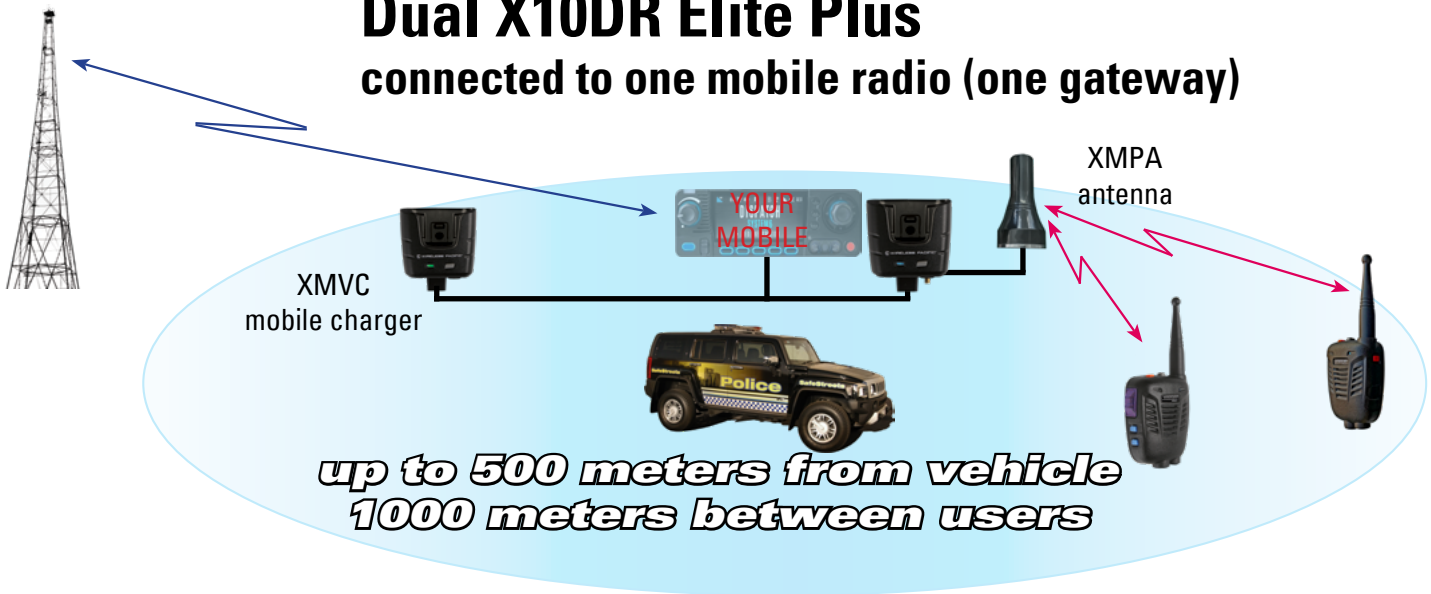
Ordering: 1 x X10DR-EX2 Elite Plus
1 x XCA -** Adaptors ** to suit radio model



XIC-1.5 interface cable with
radio specific XCA adaptor



Dual X10DR Elite Plus connected to one mobile radio (one gateway)



The Unique design of the Elite Plus allows two X10DR's to be connected via **one** gateway to the host mobile radio. Both units can hear each others communications as well as all conversations over the radio network.

This unique capability not only significantly reduces the overall cost of a dual vehicle fit up but also allows the use of a single XMPA antenna to provide optimum coverage around the vehicle. Note all communications between the two Secure Mics occurs via the single shared gateway unit. In some situations the maximum range maybe slightly reduced when configured for Dual Mic operation. Should this be of any concern then separate gateways can be considered (See Application Note 3).

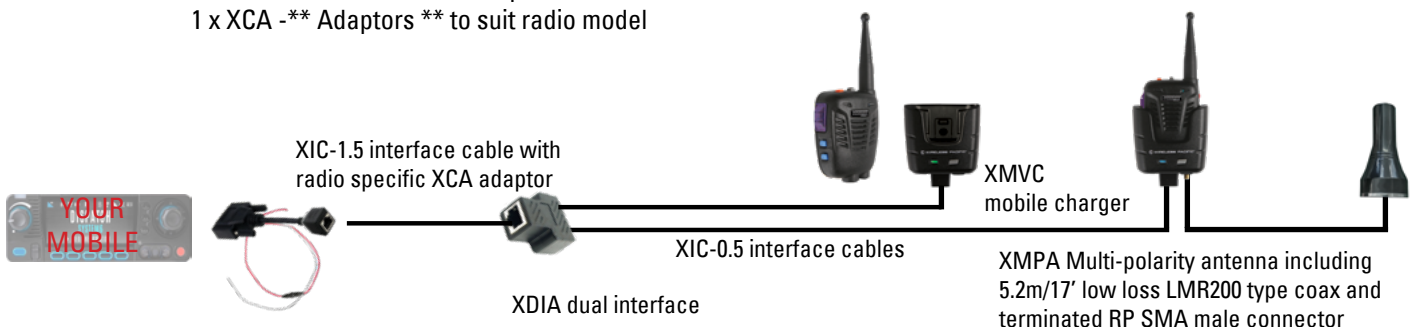
To talk locally off net (talkaround), users simply press the talkaround PTT to communicate amongst each other. **All** host mobile radio communication will instantly be heard by both users even if they are transmitting in talkaround mode, so as to ensure no network transmission is ever missed

Normally, a XDIA dual interface adaptor is used to connect to the host radio via the XIC/XCA series interface cable/adaptor. The XDIA then allows both the single X10DRMD gateway and a X10DRMC mobile charger (required for charging 2nd Elite Mic) to be connected by way of short 50cm (20") XIC-0.5 interface cables for simple installation.

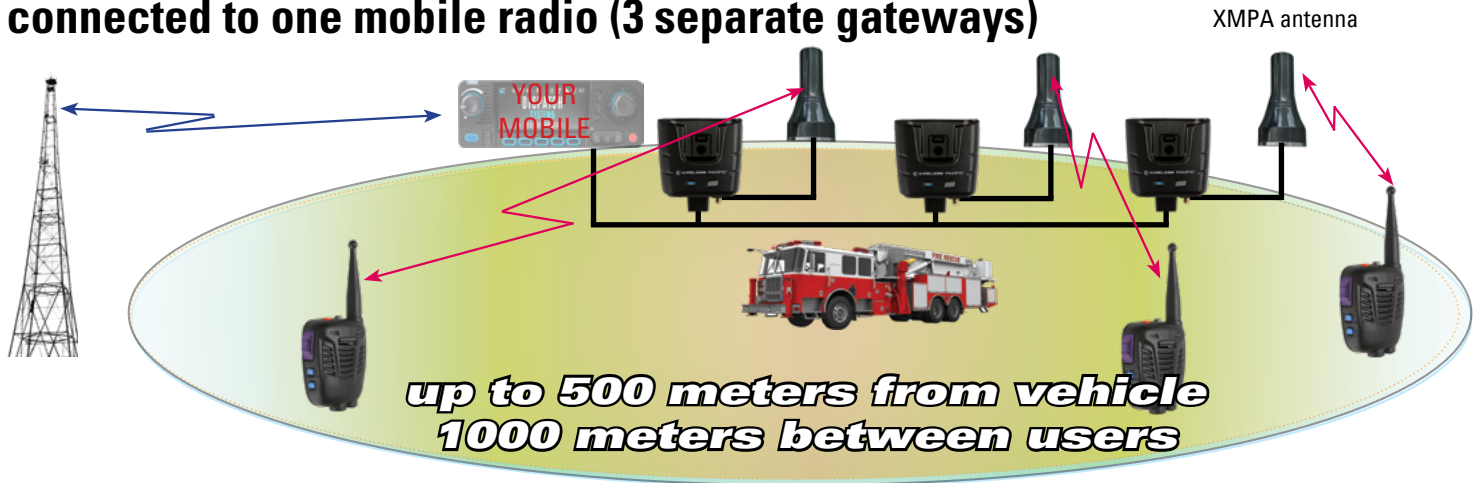
The XEX2 2nd Mic Option can be ordered either when purchasing an X10DR-EX2 Elite Secure Microphone or at a later date. To enable the dual mic functionality the Gateway must be first programmed with dual mic using a XFPK field programming kit. Both Elite mics should be then be individually paired as per the standard procedure.

Note: Refer to Interface cable and Antenna Application notes before ordering.

- Ordering:**
- 1 x X10DR-EX2 Elite Plus
 - 1 X XEX2 Dual Elite Plus Mic option
 - 1 x XCA -** Adaptors ** to suit radio model



Multiple X10DR Elite Plus connected to one mobile radio (3 separate gateways)



The smart design of the X10DR allows up to six or more X10DR's to be connected via **one** host mobile radio. All units can hear each others communications as well as all conversations over the radio network.

This multiple unit capability provides all users with full access to the radio network as well as local "off net" talkaround capability. Note all communications between the Elite mics occurs via their specific paired gateway unit.

To talk locally off net (talkaround), users simply press the talkaround PTT to communicate amongst each other. **All** host mobile radio communication will instantly be heard by all users even if they are transmitting in talkaround mode, so as to ensure no network transmission is ever missed.

Special Note: For installations incorporating the use of TDMA radios such as MotoTrbo, DMR or TETRA radios, we recommend the alternate use of the XDCI isolation box so as to minimize the possibility of TDMA switching noise being transposed by the radio over the X10DR units.

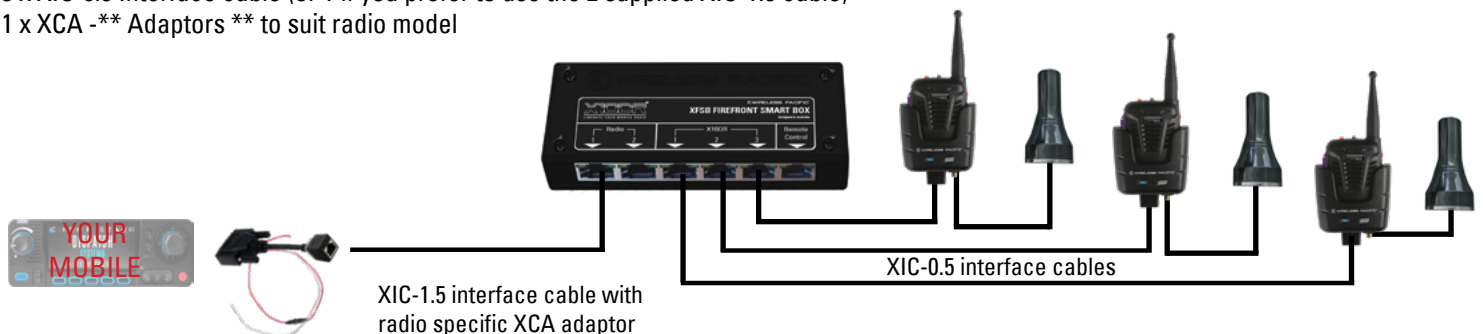
All other functions remain the same.

Note: Refer to interface cable, TDMA and antenna application notes before ordering.

Ordering:

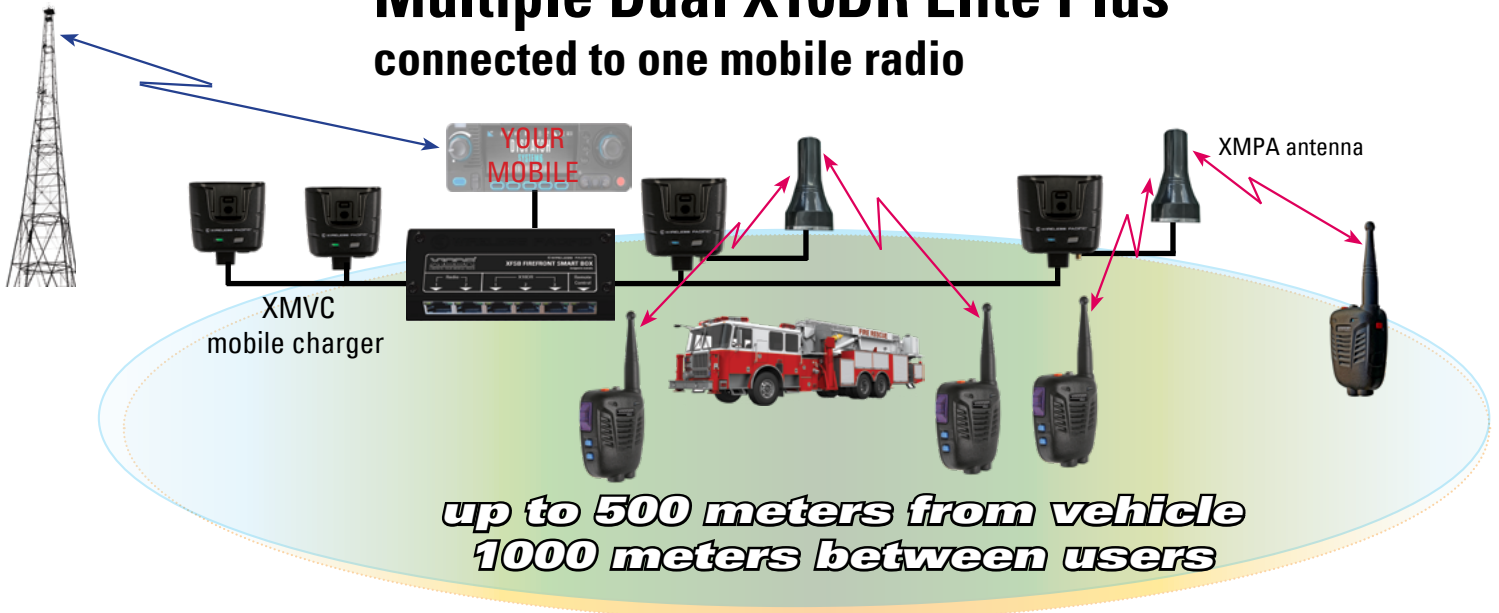
- 3 x X10DR-EX2 Elite Plus
- 1 x XSJB Smart Junction Box
- 3 x XIC-0.5 Interface cable (or 1 if you prefer to use the 2 supplied XIC-1.5 cable)
- 1 x XCA -** Adaptors ** to suit radio model

XMPA Multi-polarity antenna including 5.2m/17' low loss LMR200 type coax and terminated RP SMA male connector



XJB Junction Box

Multiple Dual X10DR Elite Plus connected to one mobile radio



The X10DR Elite’s smart design allows up to six or more X10DR’s to be connected via **one** host mobile radio with limited Gateway units by utilizing Elite’s Dual Mic capability (Please refer Application Note 2). All units can hear each others communications as well as all conversations over the radio network. This multiple unit capability provides all users with full access to the radio network as well as local “off net” talkaround capability. Note all communications between the Elite mics occurs via their specific paired gateway unit.

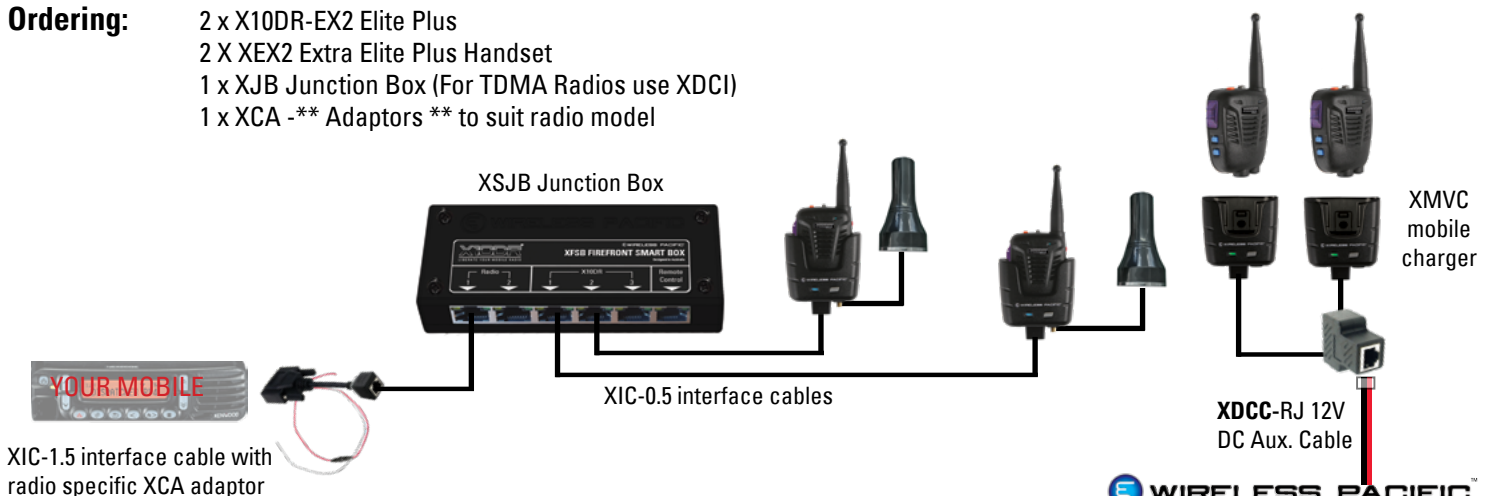
To talk locally off net (talkaround), users simply press the talkaround PTT to communicate amongst each other. **All** host mobile radio communication will instantly be heard by all users even if they are transmitting in talkaround mode, so as to ensure no network transmission is ever missed. Normally, a XJB junction box is used to connect to the host radio via the XIC/XCA series interface cable/adaptor. The XJB then allows each X10DRMD gateway and a XMVC mobile charger (required for charging 2nd Elite mic) to be connected by way of short 50cm (20”) XIC-0.5 interface cables for simple installation.

The XEX2 Multi Mic option can be order either when purchasing an X10DR-EX2 Elite Secure Microphone or at a later date. To enable the dual mic functionality each gateway must be first programmed with Multi mic using a XFPK field programming kit. Each Elite mic should be then be individually paired as per the standard procedure.

All other functions remain the same.

Note: Refer to interface cable, TDMA and antenna application notes before ordering.

- Ordering:**
- 2 x X10DR-EX2 Elite Plus
 - 2 X XEX2 Extra Elite Plus Handset
 - 1 x XJB Junction Box (For TDMA Radios use XDCI)
 - 1 x XCA -** Adaptors ** to suit radio model



X10DR Elite Plus with Public Address connected to one mobile radio



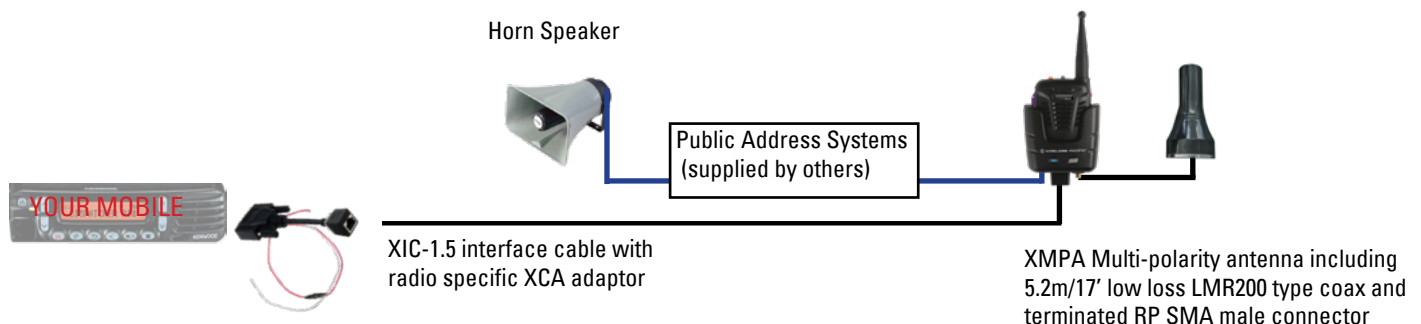
The X10DR is connected to the one mobile radio. The user can hear all communications as well transmit over the network using the highly textured PTT button. All radio system tones or those emanating from the host mobile will generally be heard by the X10DR user via its duplex audio capability regardless of whether the user is transmitting or not from the X10DR Secure Mic. These tones may include but are not limited to: transmit timer alerts, channel busy tones, talk permit tones, failsoft trunk tones, radio out of range tones, ruthless pre-emption transmissions, etc.

If multiple X10DRs have been installed in the vehicle, the other users hear all public address announcements as local talkaround audio. If local talkaround is required between users, the public address system must be turned off (set to minimum volume) to maintain audible privacy.

Note: Public address mode needs to be activated by programming the gateway with the XFPK field programmer.

Note: Refer to interface cable and antenna application notes before ordering.

Ordering:
 1 x X10DR-EX2 Elite Plus
 1 x XCA -** Adaptors ** to suit radio model



X10DR Elite Plus connected to dual mobile radios



The XSJB smart junction box can be used to allow 2 mobile radios to be connected to the one X10DR unit. The user simply presses the PTT button to talk on radio one and uses the Elite mic's Control button as PTT for radio two. A unique marker tone with a pre-adjustable volume level is attached to the tail of each secondary radio reception to inform the user which radio's audio they have just heard. Should either user press their emergency button, both radio's emergency can be triggered.

The XSJB connects to the two host radios via radio model specific XCA series cable adaptors using XIC interface cables. The X10DR connects to the XSJB also via a XIC interface cable.

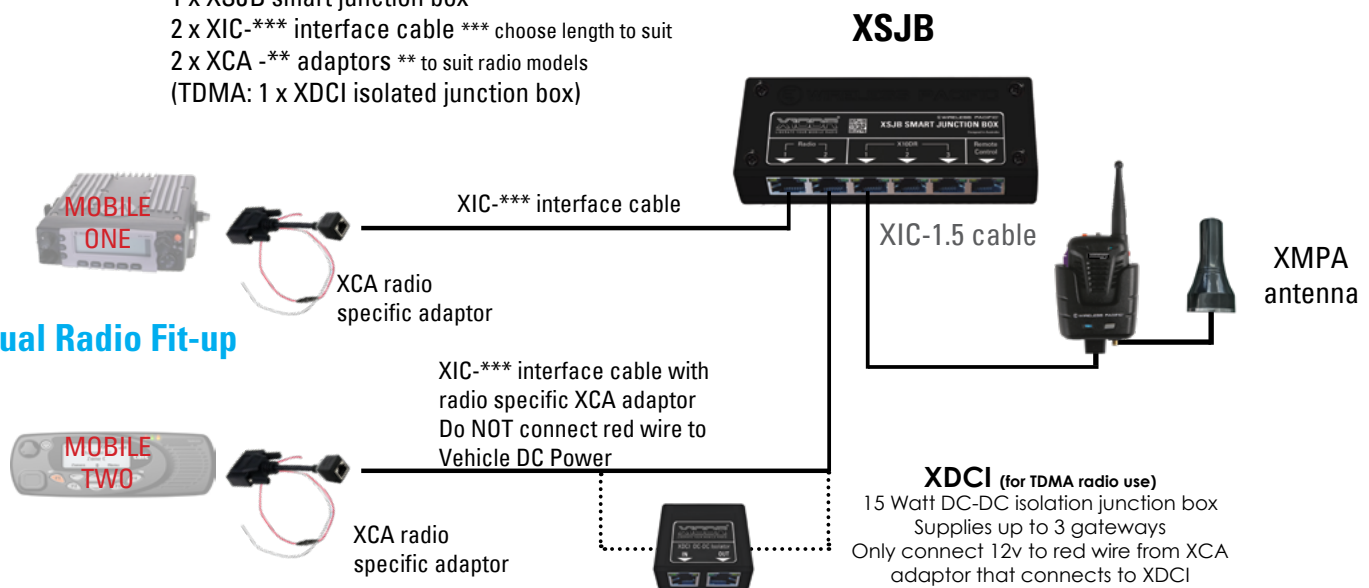
All other functions remain the same.

Note: Refer to interface cable and antenna application notes before ordering.

TDMA Radios: You may require use of a XDCI DC-DC isolation box to prevent TDMA ground noise impacting audio. (TDMA = TETRA, DMR & MotoTrbo, P25 PH 2)

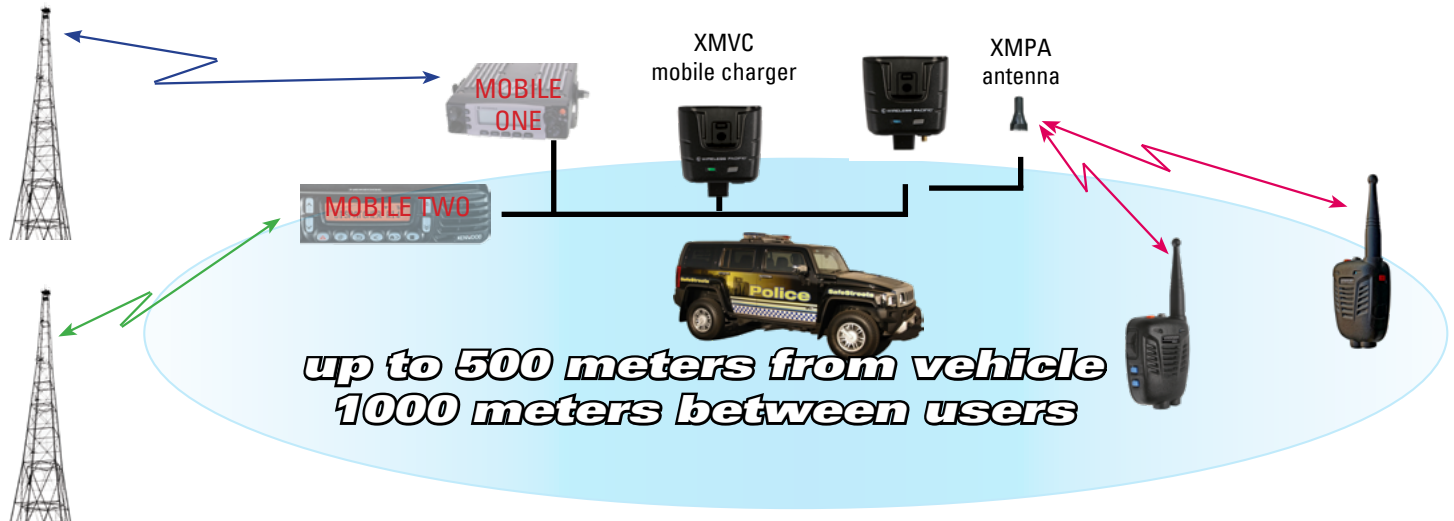
- Ordering:**
- 1 x X10DR-EX2 Elite Plus
 - 1 x XSJB smart junction box
 - 2 x XIC-*** interface cable *** choose length to suit
 - 2 x XCA -** adaptors ** to suit radio models
 - (TDMA: 1 x XDCI isolated junction box)

Dual Radio Fit-up



*Config for TDMA radios - dependent on radio's performance - may not be required

X10DR Elite Plus with Dual Mics connected to two mobile radios



The XSJB smart junction box can be used to allow 2 mobile radios to be connected to two X10DR Elite Plus mics. Each user simply presses the PTT button to talk on radio one and uses the Elite mic's Control button as PTT for radio two. A unique marker tone with a pre-adjustable volume level is attached to the tail of each secondary radio reception to inform the user which radio's audio they have just heard.

Users should use common radio protocol and should not attempt to talk on the second radio when the first user is already talking on radio one. (Doing so would cause both radios to transmit with the audio from both microphones mixed being sent over the air). Should either user press their emergency button, both radio's emergency can be triggered. "Off-net" local talkaround is not available in this configuration but both users hear all communications as usual.

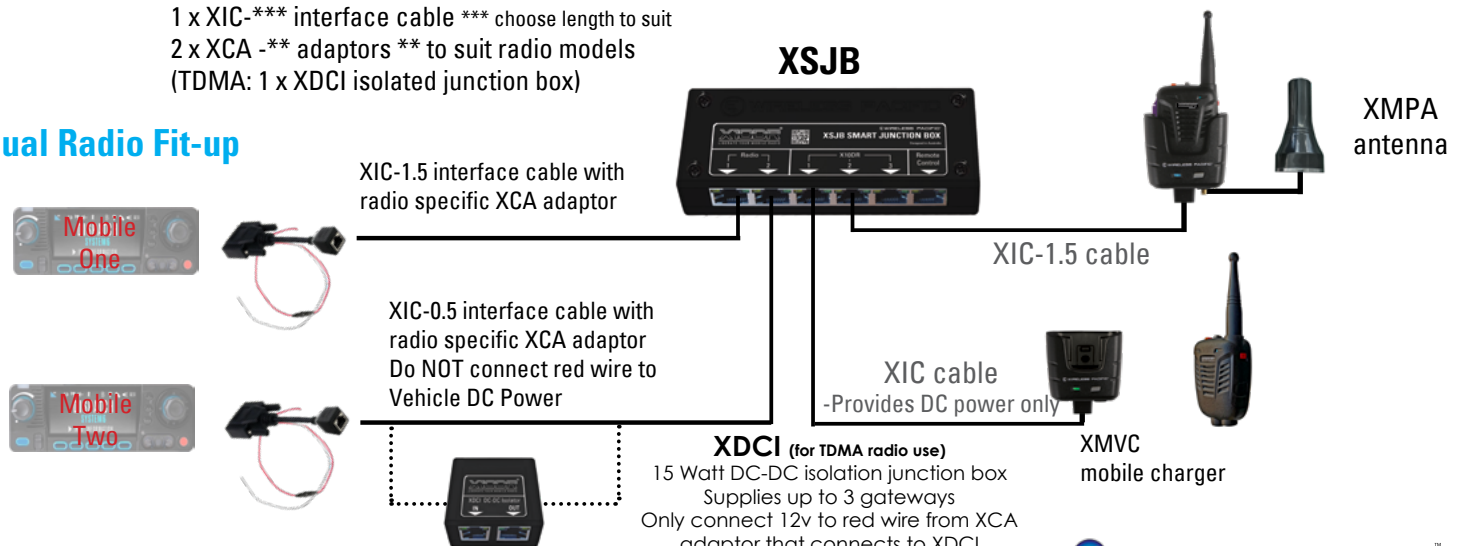
The XSJB connects to the two host radios via radio model specific XCA series cable adaptors using XIC interface cables. The X10DR connects to the XSJB via a XIC-0.5 interface cable.

Note: Refer to interface cable and antenna application notes before ordering.

TDMA Radios: You may require use of a XDCI DC-DC isolation box to prevent TDMA ground noise impacting audio. (TDMA = TETRA, DMR & MotoTrbo, P25 PH 2)

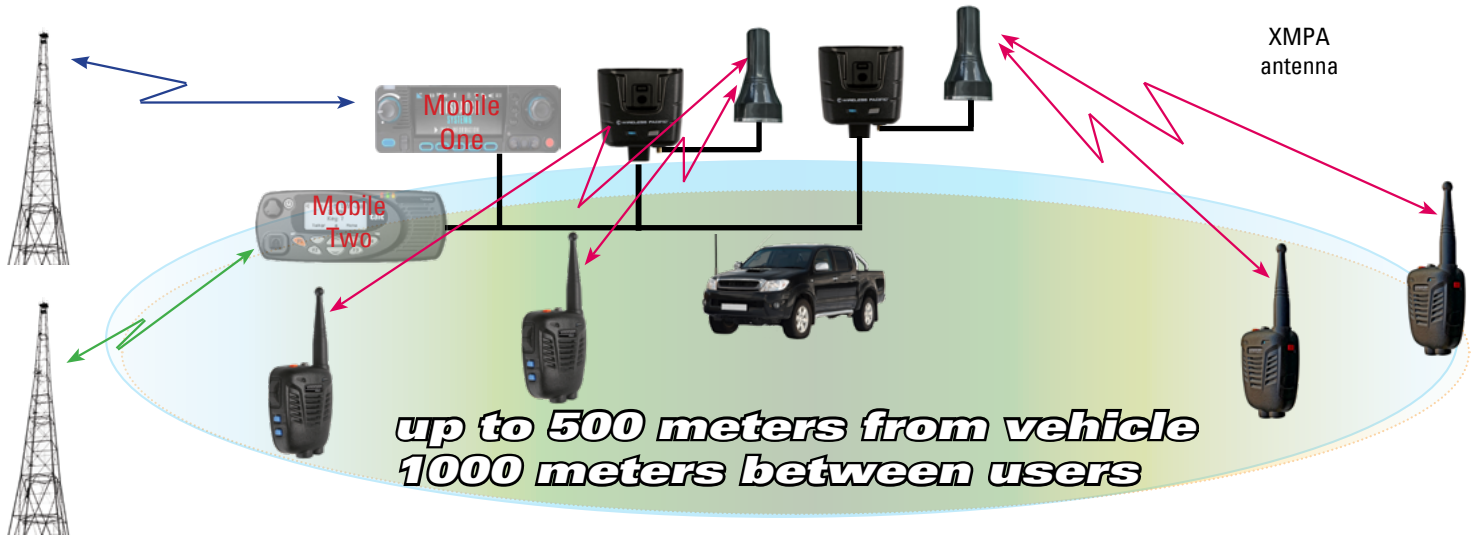
- Ordering:**
- 1 x X10DR-EX2 Elite Plus
 - 1 X XEX2 Extra Elite Plus Handset
 - 1 x XSJB smart junction box
 - 1 x XIC-*** interface cable *** choose length to suit
 - 2 x XCA -** adaptors ** to suit radio models
 - (TDMA: 1 x XDCI isolated junction box)

Dual Radio Fit-up



*Config for TDMA radios - dependent on radio's performance - may not be required

X10DR Elite Plus with Multiple Dual Mics connected to two mobile radios



The XSJB Smart junction box can be used to allow 2 mobile radios to be connected to multiple X10DR Elite mics. Each user simply presses the PTT button to talk on radio one and uses the Elite mic's Control button as PTT for radio two. A unique marker tone with a pre-adjustable volume level is attached to the tail of each secondary radio reception to inform the user which radio's audio they have just heard. Users should use common radio protocol and should not attempt to talk on the second radio when the first user is already talking on radio one. (Doing so would cause both radios to transmit with the audio from both microphones mixed being sent over the air). Should either user press their emergency button, both radio's emergency can be triggered. "Off-net" local talkaround is not available in this configuration but all users hear all communications as usual.

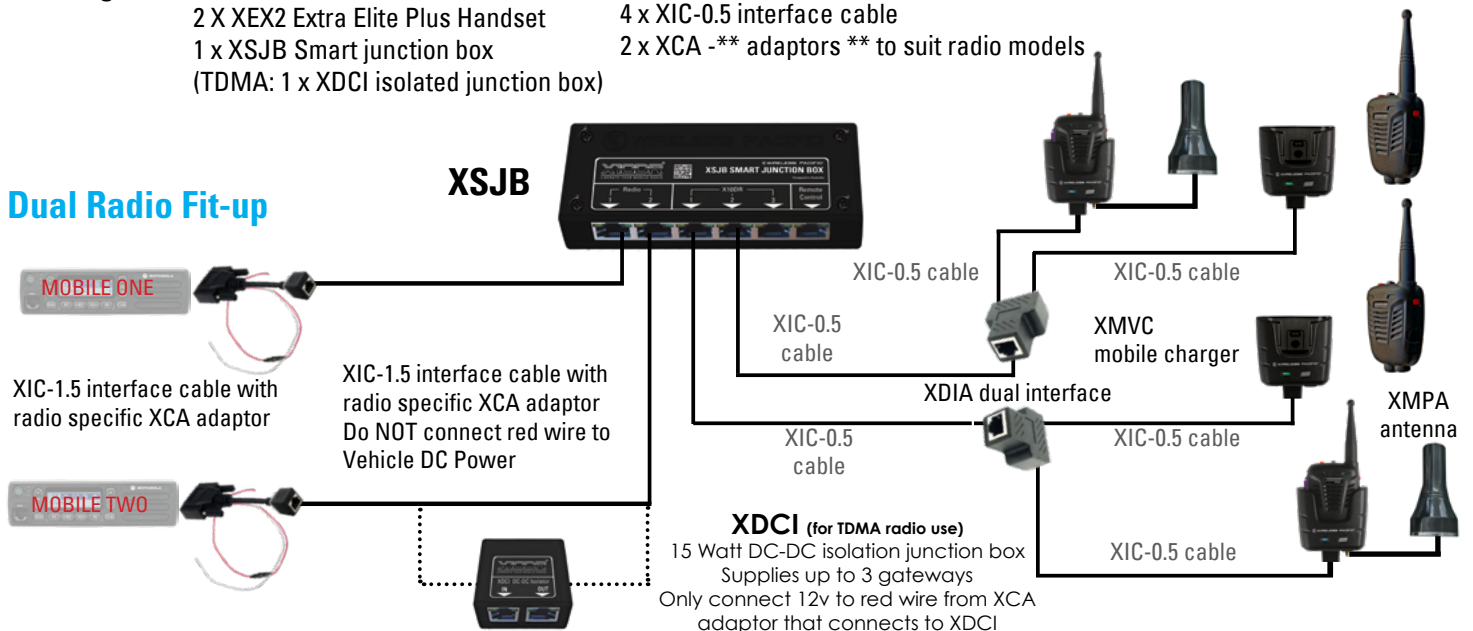
The XSJB connects to the two host radios via radio model specific XCA series cable adaptors using XIC interface cables. The X10DRs connect to the XSJB via XIC-0.5 interface cables.

TDMA Radios: You may require use of a XDICI DC-DC isolation box to prevent TDMA ground noise impacting audio.

(TDMA = TETRA, DMR & MotoTrbo, P25 PH 2)

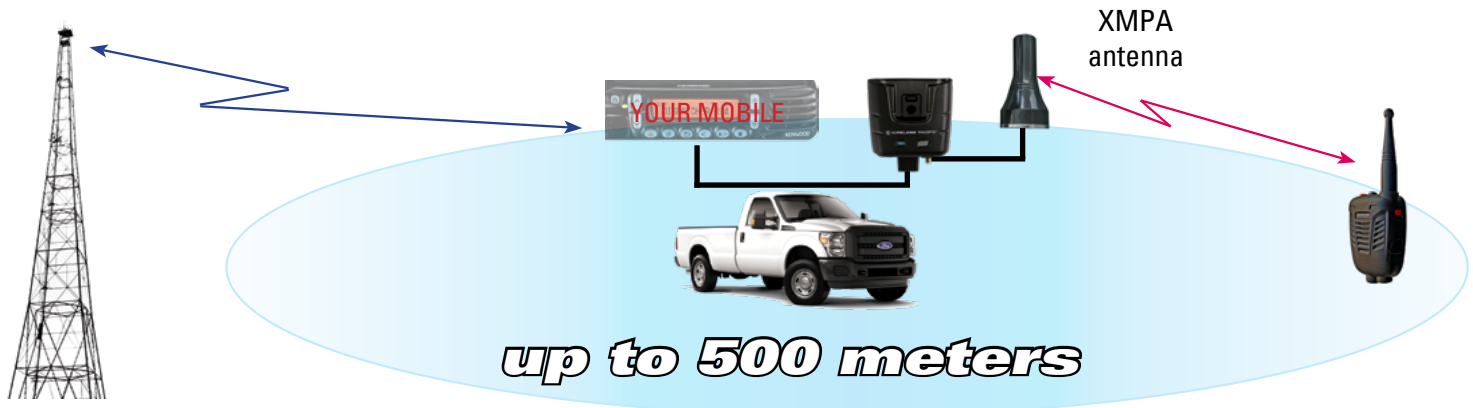
- Ordering:**
- 2 x X10DR-EX2 Elite Plus
 - 2 X XEX2 Extra Elite Plus Handset
 - 1 x XSJB Smart junction box
 - (TDMA: 1 x XDICI isolated junction box)
 - 2 x XDIA Dual Interface adaptor
 - 4 x XIC-0.5 interface cable
 - 2 x XCA -** adaptors ** to suit radio models

Dual Radio Fit-up



*Config for TDMA radios - dependent on radio's performance - may not be required

X10DR Elite Plus with Mandown connected to one / two mobile radios



The XMD Mandown Biometric Monitor user safety feature is factory fitted. The function turns on automatically whenever you remove the handset from its cradle or charger. If there is no user movement or transmit activity for 2 minutes, quickening alert tones will sound for 30 seconds. If there is still no user activity, the radio's emergency input will be triggered. Mandown is disabled when the handset is placed into any charger/gateway.

To temporarily disable Mandown operation, either power up the handset or remove it from its charger while pressing the top grey Control button until a 4 beep "pause" confirmation sounds. A gentle reminder beep will sound every 2 minutes until re-enabled. To re-enable Mandown, either power off/on the handset or place the handset into a charger and then remove.

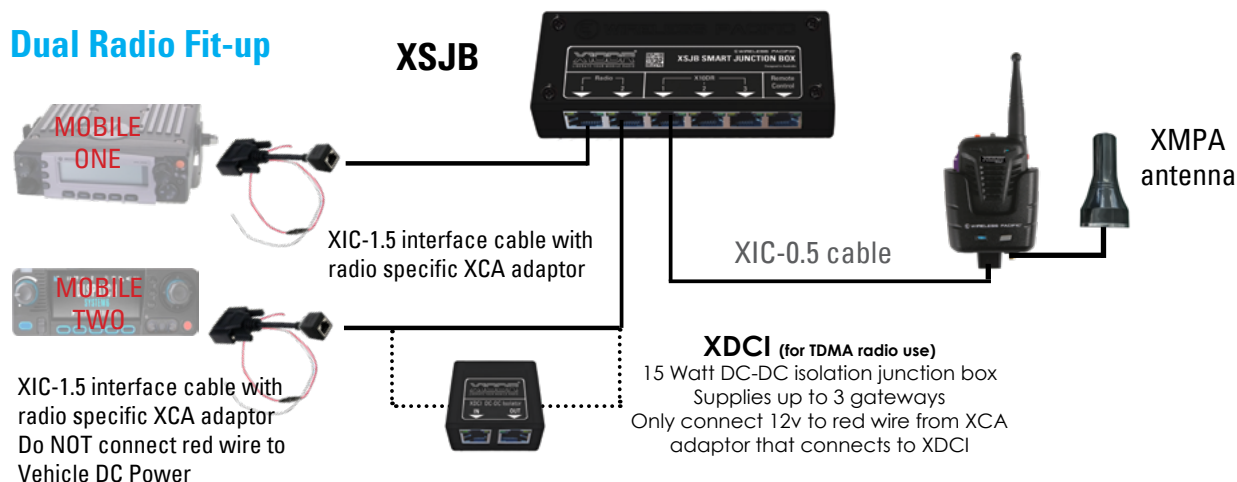
TDMA Radios: You may require use of a XDCI DC-DC isolation box to prevent TDMA ground noise impacting audio.

(TDMA = TETRA, DMR & MotoTrbo, P25 PH 2)

Ordering: 1 x X10DR-EX2 Elite Plus X10DR
 (single radio) 1 x XMD Mandown Monitor
 1 x XIC-0.5 interface cable
 1 x XCA -** adaptors ** to suit radio model
 (TDMA: 1 x XDCI isolated junction box)

Ordering: 1 x X10DR-EX2 Elite Plus X10DR
 (dual radios) 1 x XMD Mandown Monitor
 1 x XSJB smart junction box
 1 x XIC-0.5 interface cable
 1 x XIC-1.5 interface cable
 2 x XCA -** adaptors ** to suit radio models
 (TDMA: 1 x XDCI isolated junction box)

Dual Radio Fit-up



*Config for TDMA radios - dependent on radio's performance - may not be required

X10DR Elite Plus - Motorcycle connected to one mobile radio



One of X10DR key design criteria was to ensure motorcycle users would be able to enjoy the full benefit of the secure wireless microphone whether on, or off the bike. When on the bike, the officer needs only press the traditional handle bar PTT button to talk through the helmet's microphone connected to the X10DR Elite mic which then wirelessly connects to the gateway connected to the mobile radio mounted on the bike. When the rider leaves the bike, they can choose to leave their helmet on and press the Elite mic's side PTT button to talk, or for greater convenience, use an XIPB in line PTT Button. Nothing to un-plug! Alternatively, the officer can unplug their helmet, remove, and use the Elite mic like a traditional remote speaker microphone. No longer will an officer need to return to their bike to do a license check, whilst staying in complete radio contact when at their most vulnerability. Importantly they can stay ready to mount the bike and make pursuit if they need to at any time. Use of an optional XIPB also provides a 80-90% audio mute button so that when off the bike, the rider can choose to greatly reduce radio speaker audio in their helmet while talking with a member of the public.

All radio system tones or those emanating from the host mobile will generally be heard by the X10DR user via its duplex audio capability regardless of whether the user is transmitting or not from the X10DR Secure Mic. These tones may include but are not limited to: transmit timer alerts, channel busy tones, talk permit tones, failsoft trunk tones, radio out of range tones, ruthless pre-emption transmissions, etc Customer supplied handle bar PTT is connected to the white remote PTT wire coming from each XCA adaptor. Two types of Helmet kits are available: XMCH-O for open face helmets and XMCH-C for closed face helmets. Use XFPK field programmer to set optimum mic sensitivity once headset kit is fitted to helmet. All other functions remain the same.

Ordering:
(Closed face) 1 x X10DR-EX2 Elite Plus
1 x XMCH-C Closed helmet headset kit
1 x XIPB Inline PTT Button (optional)
1 x XCA -** adaptors ** to suit radio model

Ordering:
(Open face) 1 x X10DR-EX2 Elite Plus
1 x XMCH-O Open helmet headset kit
1 x XIPB Inline PTT Button (optional)
1 x XCA -** adaptors ** to suit radio model

Alternate gateways with desktop charging.

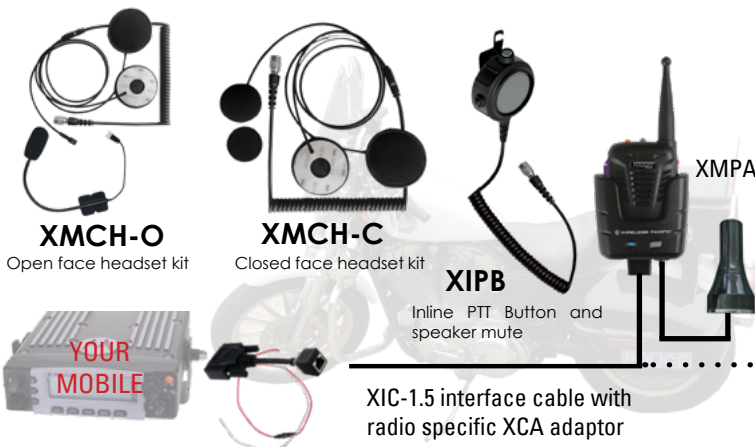
Ordering: 1 x X10DRSM-EX2 Elite Plus Handset
1 x XDTC Desktop charger
1 x XRTG-EX2 or XIVG-EX2 Gateway & XSMA2 ant.
1 x XIC-* Interface cable (flat)*desired length
1 x XCA -** adaptors ** to suit radio model
1 x XMCH-C closed helmet headset kit (Closed face)
1 x XMCH-O Open helmet headset kit (Open face)
1 x XCA -** adaptors ** to suit radio model

XRTG-EX2

XIVG-EX2



XSMA2 Antenna
"reduced range"



XIC-1.5 interface cable with
radio specific XCA adaptor

X10DR Elite Plus - Motorcycle connected to two mobile radio

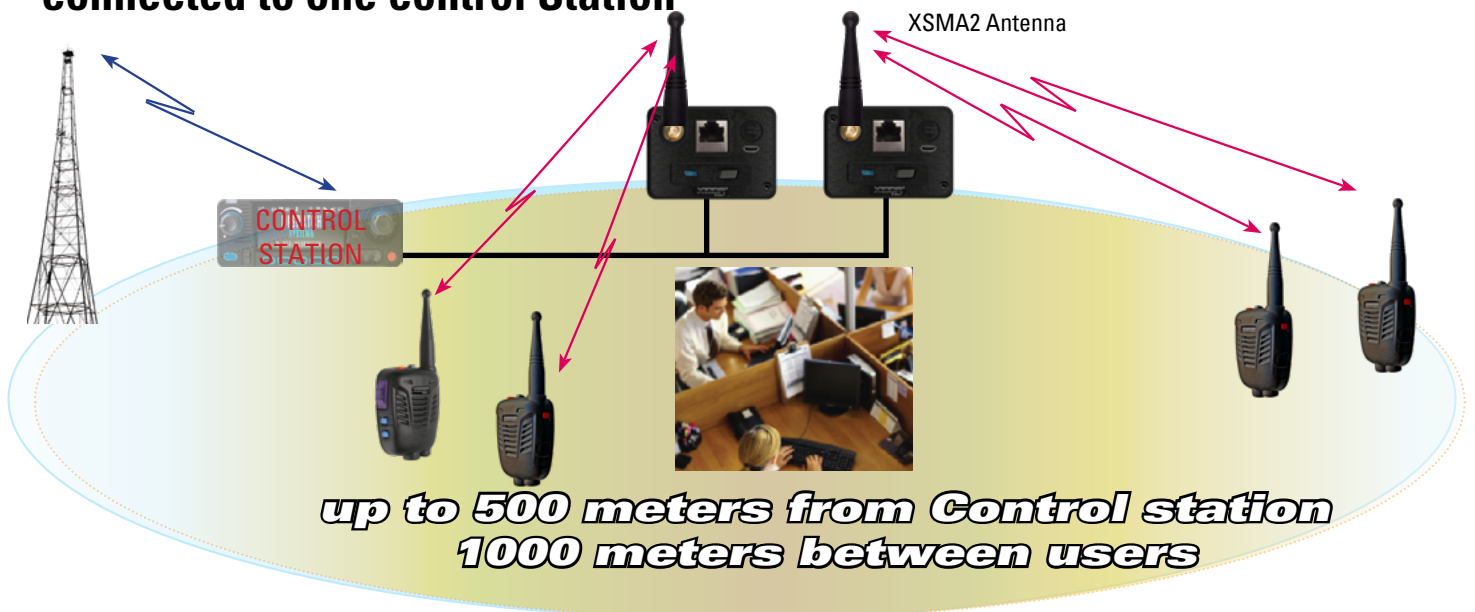


One of X10DR key design criteria was to ensure motorcycle users would be able to enjoy the full benefit of the secure wireless microphone whether on, or off the bike. When on the bike, the officer needs only press the traditional handle bar PTT button to talk through the helmet's microphone connected to the X10DR Elite mic which then wirelessly connects to the gateway connected to the mobile radio mounted on the bike. When the rider leaves the bike, they can choose to leave their helmet on and press the Elite mic's side PTT button to talk, or for greater convenience, use an XIPB in line PTT Button. Nothing to un-plug! Alternatively, the officer can unplug their helmet, remove, and use the Elite mic like a traditional remote speaker microphone. No longer will an officer need to return to their bike to do a license check, whilst staying in complete radio contact when at their most vulnerability. Importantly they can stay ready to mount the bike and make pursuit if they need to at any time. Use of an optional XIPB also provides a 80-90% audio mute button so that when off the bike, the rider can choose to greatly reduce radio speaker audio in their helmet while talking with a member of the public.

All radio system tones or those emanating from the host mobile will generally be heard by the X10DR user via its duplex audio capability regardless of whether the user is transmitting or not from the X10DR Secure Mic. Customer supplied handle bar PTT is connected to a customer supplied 2 position (radio 1/2) switch that chooses the appropriate white remote PTT wire coming from each XCA adaptor. Two types of Helmet kits are available: XMCH-O for open face helmets and XMCH-C for closed face helmets. Use XFPK field programmer to set optimum mic sensitivity once headset kit is fitted to helmet. All other functions remain the same.



4 Handsets and Dual XIVG Elite Plus in the office connected to one control Station



X10DR is ideal for helping free up desk bound radio operator personnel whose other job responsibilities often cause them to leave the radio control station unattended. A radio dispatcher equipped with an X10DR is now free to move around the office. Additionally, in situations where a number of staff share radio dispatch responsibilities, or where a shift supervisor, or the office in charge may also need to monitor radio traffic, The local off net talkaround facility allow all users to hear each others communications as well as all conversations over the network. Equipping control room staff with X10DR ensures someone will always be available to take an urgent or emergency call even when taking a rest break. For many office situations use of the XSMA2 internal antenna on the gateway units will provide sufficient coverage helping reduce initial installation costs.

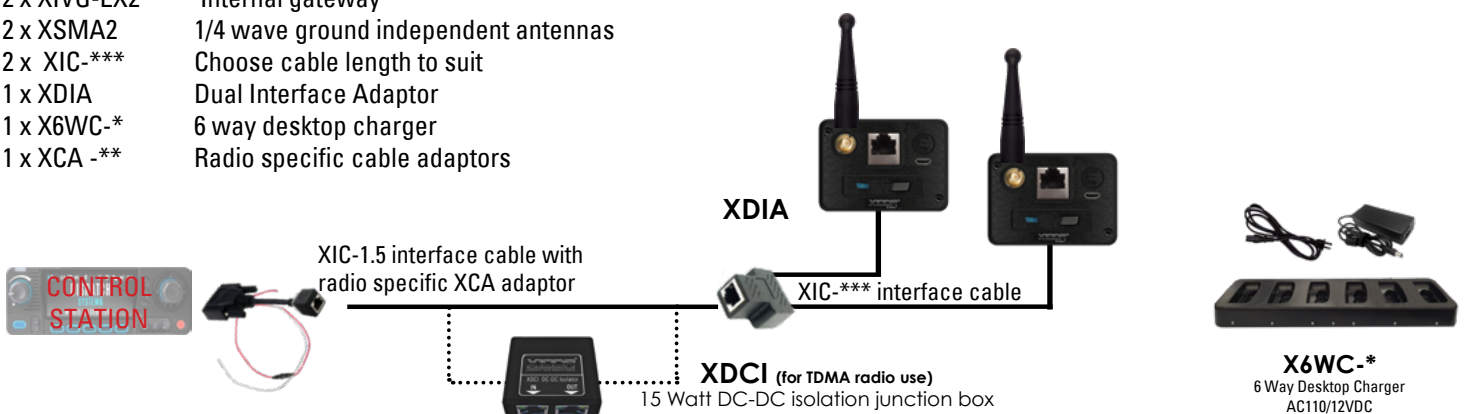
To further compliment the office environment, using an X10DR equipped with the Hirose® audio port allows use of lightweight noise cancelling headsets to minimize ambient noise in the control room.

Each X10DR XIVG Internal Elite gateway connects to the XDIA by way of XIC desired length interface cables.

Note: Refer to interface cable, antenna and TDMA application notes before ordering.

Ordering:

- 4 x X10DRSM-EX2 Elite Plus handsets
- 2 x XIVG-EX2 Internal gateway
- 2 x XSMA2 1/4 wave ground independent antennas
- 2 x XIC-*** Choose cable length to suit
- 1 x XDIA Dual Interface Adaptor
- 1 x X6WC-* 6 way desktop charger
- 1 x XCA -** Radio specific cable adaptors



* AC Plug - US/EU/AU
** to suit radio model
*** Choose XIC length to suit

XDCI (for TDMA radio use)
15 Watt DC-DC isolation junction box
Supplies up to 3 gateways
Only connect 12v to red wire from XCA adaptor that connects to XDCI

Dual Elite Plus HS with XRTG Elite Plus in Warehouse connected to one Control Station



X10DR is ideal for helping stay connected with your remote warehouse personnel. Staff equipped with an X10DR handset are now free to move around the warehouse while communicating amongst themselves using the Talkaround button on the top of the handset, while always monitoring the control station and talking back with the simple press of the PTT .

For many warehouse situations use of a 6m interface cable will allow the gateway to be mounted high enough to cover the entire warehouse but in those occasions where due to the warehouse size or obstructions you find coverage is not as desired, the gateway interface cable can be extended up to a hundred meters, allowing its placement to be more central within the building or perhaps on the ceiling etc.

Note: The Elite Plus handsets should be ideally paired with the XRTG Plus gateway unit BEFORE it is installed. The handset can be recharged in either a single desktop charger or a 6 way desktop charger where that makes more sensible.

To further compliment the office environment, using an X10DR equipped with the Hirose® audio port allows use of lightweight noise cancelling headsets to minimize ambient noise in the warehouse area.

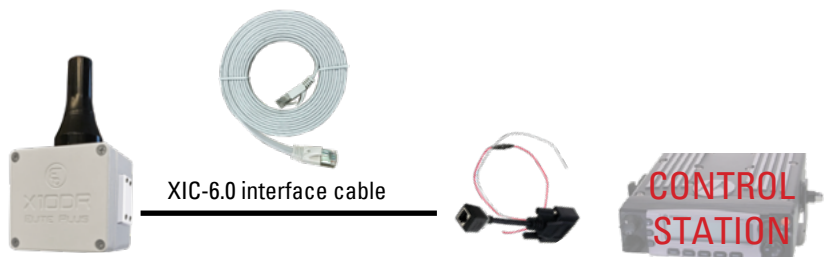
The X10DR XRTG Plus connects to the control station by way of a 6 meter white flat interface cable and a XCA radio specific adaptor.

Note: Refer to interface cable, antenna and TDMA application notes before ordering.

Ordering:	2 x	X10DRSM-EX2	Elite Plus X10DR handsets
	2 x	XDTC-*	Desktop charger
	1 x	XRTG-EX2 Plus	Elite Plus rooftop gateway include 6m white flat interface cable
	1 x	XCA -**	Radio specific cable adaptor



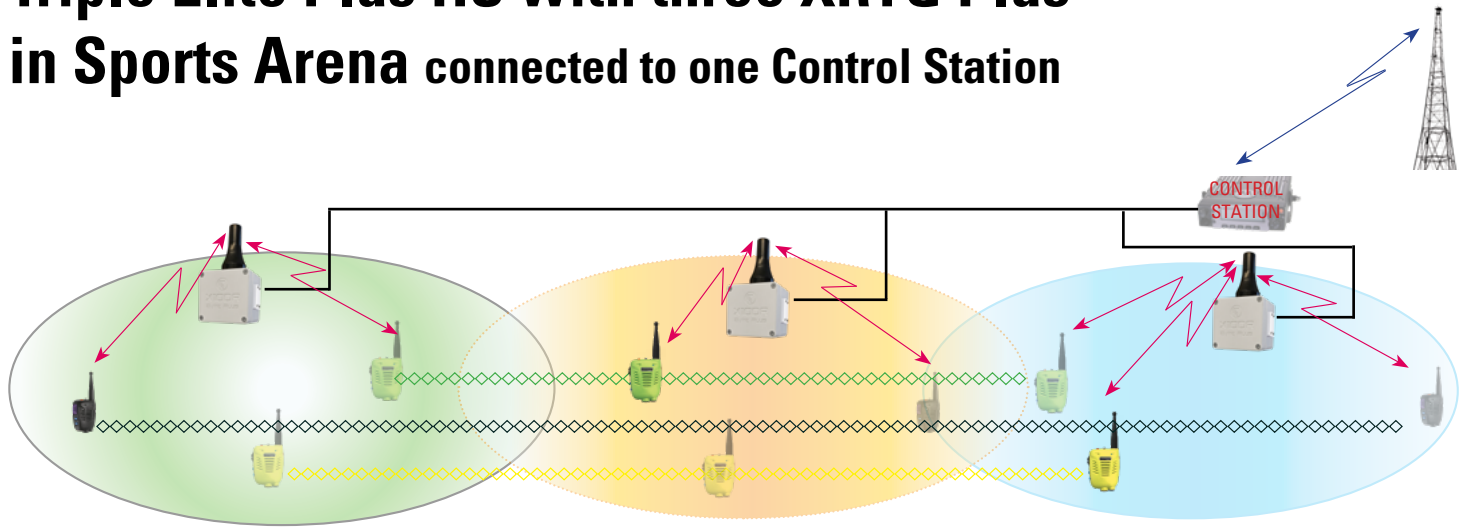
XDTC
Desktop Charger



radio specific XCA adaptor

* AC Plug - US/EU/AU
 ** to suit radio model
 *** Choose XIC length to suit

Triple Elite Plus HS with three XRTG Plus in Sports Arena connected to one Control Station



X10DR is ideal for helping stay connected in large open areas such as sports arenas or perhaps for use in multiple warehouses that cannot be covered by a single gateway. Staff equipped with an X10DR Elite Plus handset are now free to move around while communicating amongst themselves using the Talkaround button on the top of the handset, while always monitoring the control station and talking back with the simple press of the PTT. The handsets continually monitor their current connected gateway signal strength and will connect to another gateway where available when their current connection becomes poor.

Elite Plus gateways can be connected up to 100 meters from a control station/network radio/sat terminal device.

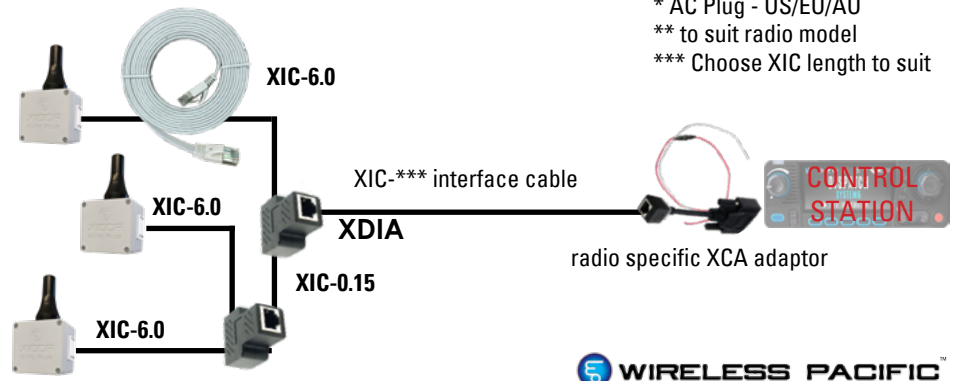
Note: The Elite Plus handsets ideally should be paired with all the XRTG Plus gateway unit BEFORE it is installed. The handset can be recharged in either a single desktop charger or a 6 way desktop charger where that makes more sense.

To further compliment the office environment, using an X10DR equipped with the Hirose® audio port allows use of lightweight noise cancelling headsets to minimize ambient noise in the arenas.

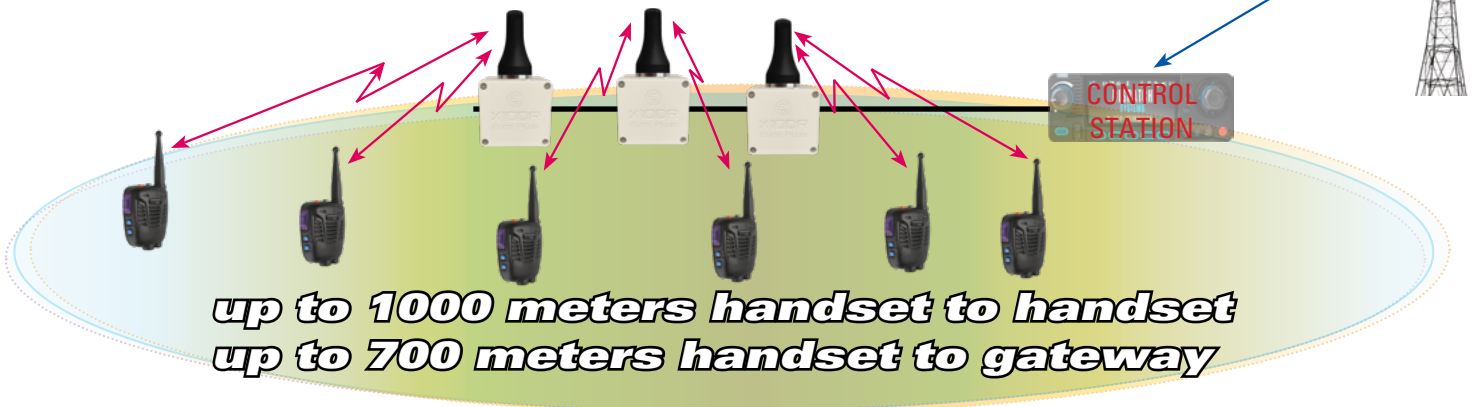
The XRTG Plus connects to the control station by way of the included 6 meter (22') XIC-6.0 Interface cable and a separately purchased XCA radio specific adaptor. Extension cables and advice regarding use of custom length cables is also available.

Note: Command/Auto Relay Mode is not compatible with three handset/gateway operation and should be disabled.

Ordering:	3 x	X10DRSM-EX2	Elite Plus X10DR Handsets
	3 x	XDTC-*	Desk top charger
	3 x	XRTG-EX2	Elite Plus Rooftop Gateway
	1 x	XCA -**	Radio Specific Cable Adaptor
	2 x	XDIA	Dual Interface Adaptor (Use XSJB if Handsfree required)
	1 x	XIC-***	Desired length shielded interface cables as required (refer pricebook)
	1 x	XIC-0.15	15cm shielded interface cables



6 Elite HS with 3 XRTG connected to one Control Station - Handsfree Local

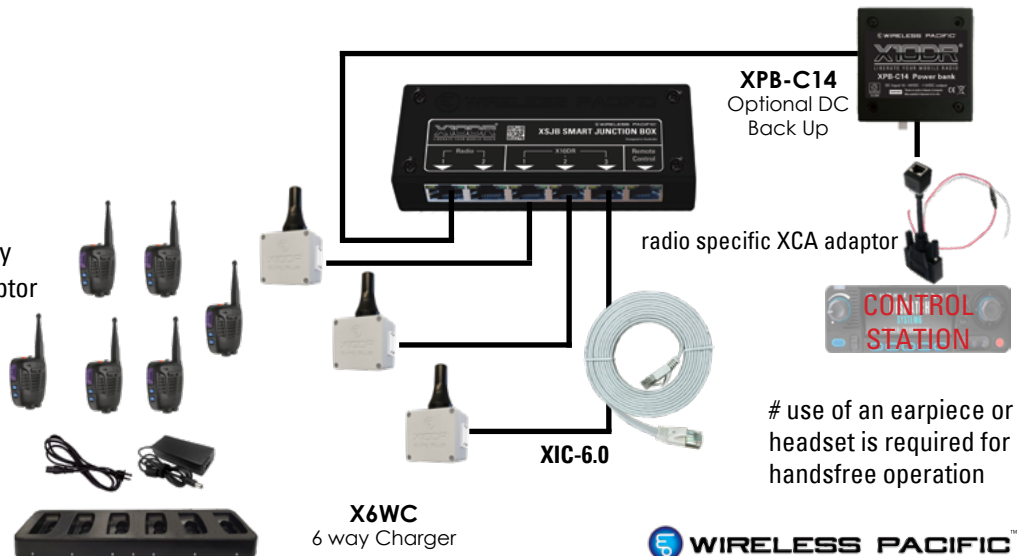


X10DR Elite AES 128 secure capability can allow up to six staff to be equipped with an X10DR handset so they can freely move around a sports stadium or warehouse etc while privately communicating instantly amongst themselves for up to 1400 meters using the Control (Talkaround) button on the top of the handset, while always monitoring the control station and talking back with the simple press of the PTT. Alternatively, the main side PTT button can be programmed to be used to talk locally and the top button to talk over the host mobile radio channel. The low cost of these highly secure AES128 Elite handsets makes this a very cost effective way of providing your team with a totally secure local comms system which is license free and exclusive for their use. To further compliment the operational environment, using lightweight noise cancelling headsets to minimize ambient noise in the sports/warehouse area.

The XRTG units connect to a XSJB Smart Junction Box via a XIC interface cable to the XCA radio specific adaptor to the host control station. In those situations that the standard interface cables do not allow the gateways to be mounted high enough to ensure the desired coverage area due to the size or obstructions, the gateway's XIC interface cable can be extended up to a hundred meters, allowing their placement to be more central within the building example: on the ceiling etc. Where multiple XRTG gateways are deployed, we recommend they be mounted at least 3 meters from each other to minimize the opportunity for inter-device interference. The XIC interface cable can be extended with standard XEC-4.5 extensions cables or alternatively, custom length cables are available on application. For further dependability a XPB-C14 Back up power unit can be added in series with the radio connection to provide up to 3 hours operation in the event of power outage for the local on site communications.

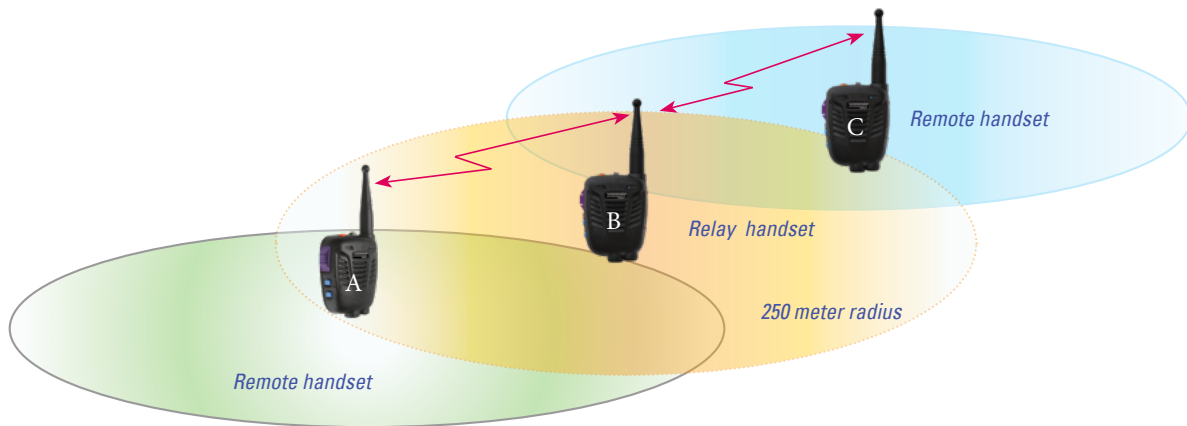
Notes:
The Elite Plus handsets should ideally be paired with their assigned XRTG-EX2 Plus gateway unit BEFORE the XRTG devices are installed. The handset can be recharged in either single desktop chargers or a 6 way desktop charger, as preferred. XRTG units are IP65 weatherproof.

- Ordering:**
- 6 x X10DRSM-EX2 Elite X10DR handsets
 - 1 x X6WC-* Desktop 6 way charger
 - 1 x XSJB Smart Junction Box
 - 3 x XRTG-EX2 Elite Plus rooftop gateway
 - 1 x XCA -** Radio specific cable adaptor

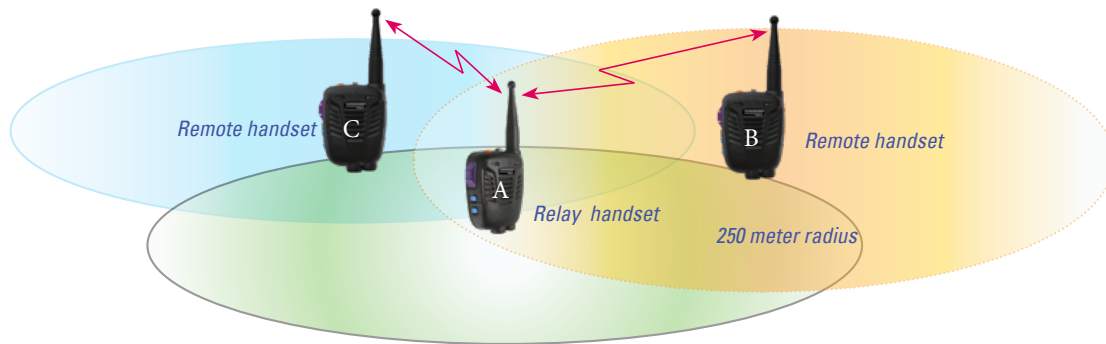


* AC Plug - US/EU/AU
** to suit radio model
*** Choose XIC length to suit

X10DR Elite Plus - Local on site/off network



The size, weight and relative low cost of the X10DR Elite Plus handset allows for its selective use in short range voice applications. To ensure the highest levels of voice security are maintained, Elite Plus model provides dynamic AES128 encryption. This means the X10DR Elite Plus devices continuously automatically change their encryption key throughout the day, making its operation far more tactically secure than the highest top end AES256 portable radios available in the world today. Depending on the local environmental terrain, distances of up to 250 meters between adjacent handsets can be achieved. Subject to the relay mode chosen: Command Post or Automatic, transmissions between handsets are either relayed through a fixed "relay handset" or in automatic mode, where any handset will be dynamically assigned as a relay device. The maximum range between handsets is up to 500 meters, in optimum conditions where one portable is central.

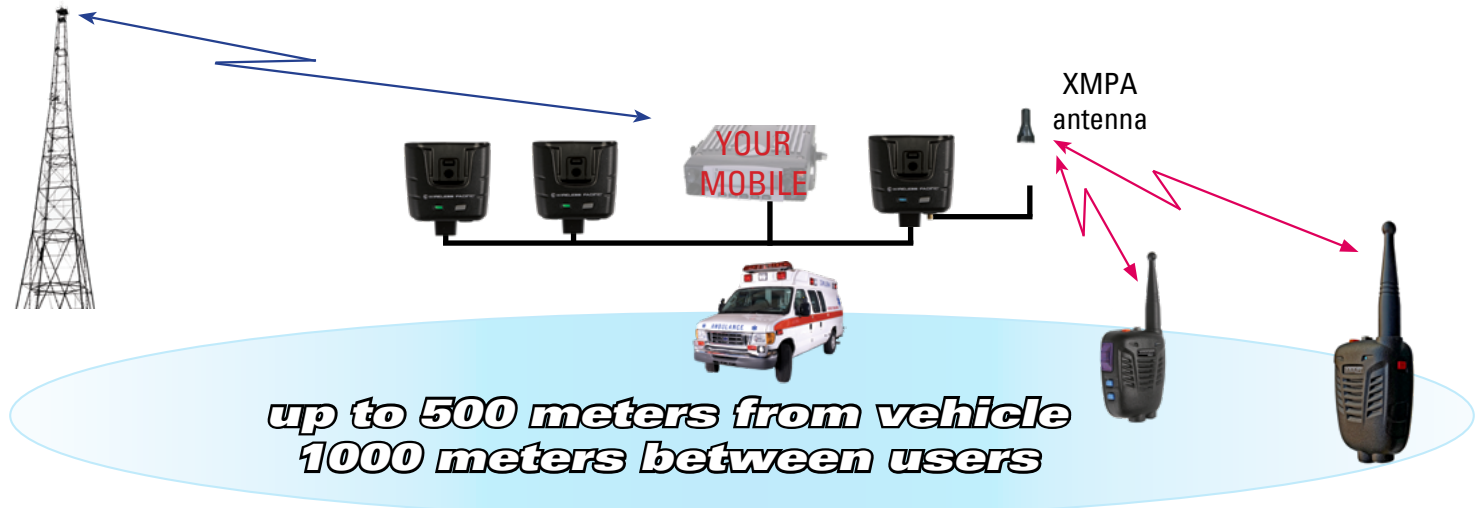


3 operative example

Ordering: 3 x X10DRSM-EX2 Elite Plus handsets
3 x XDTC Single unit desktop chargers



X10DR Elite Plus with Advanced Emergency



Advanced Emergency functionality in the Elite Plus series provide additional alerting capability up and above those available emergency functions provided by the host mobile radio. The Elite Plus handset can be programmed to generate a short emergency alert tone which is sent over their host mobile's radio channel and to other cross connected X10DR devices. This allows those most able to render quick assistance to respond immediately. The handset "audio link" timer should be programmed for 2 seconds (longer if Live Mic is required) and either short or long press selected for emergency activation.

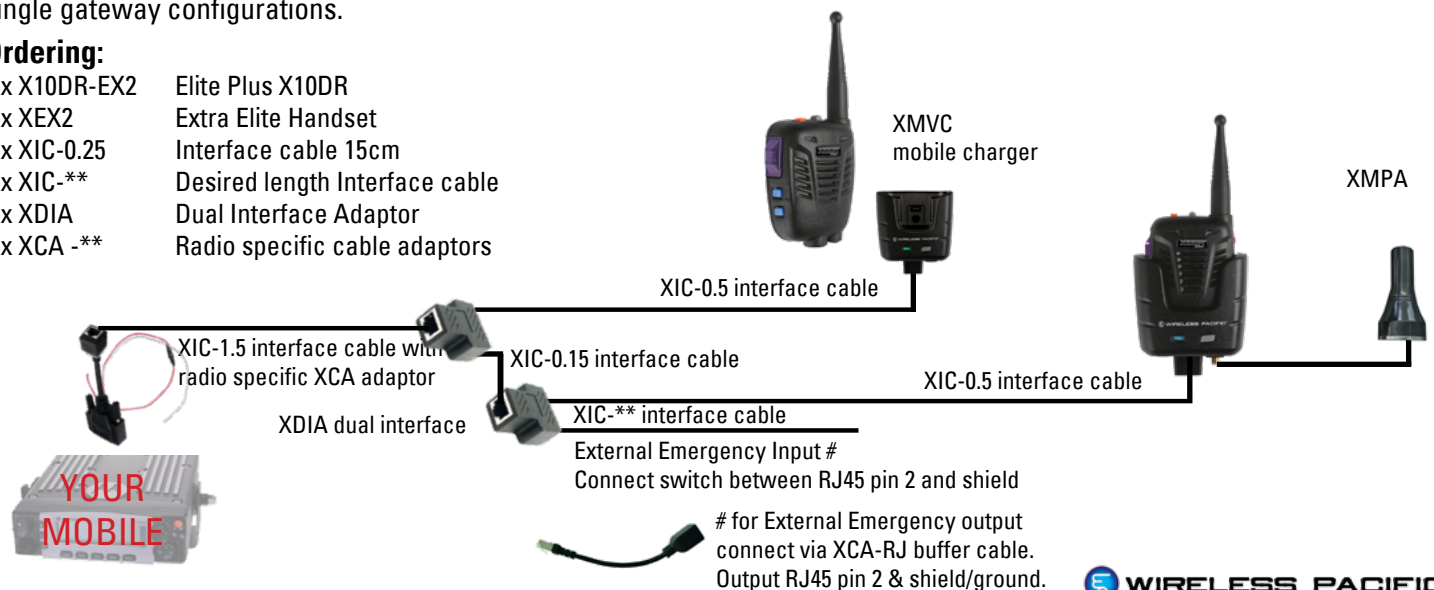
In those situations where it is not desirable to send an emergency alert tone over the radio channel, the Elite gateway's can be programmed alternatively so that emergency alert tones are only sent to their associated paired handsets whenever another cross connected X10DR user presses their emergency button. This advanced emergency feature also provides immediate user feedback that the emergency command has been delivered to their host mobile radio, as the activating unit will also hear the associated emergency alert tones.

Finally, the programmed gateway's emergency i/o pin can be connected a status/message output pin on the host mobile radio so a control room, for example, could send alert tones to the X10DR user to warn of imminent danger. Alternatively, the I/O pin could be connected to the vehicle's burglar alarm system should someone attempt to access the vehicle when the user was remote from the vehicle. When used as an output connect via a XCA-RJ buffer cable to isolate and protect the gateway's emergency pin.

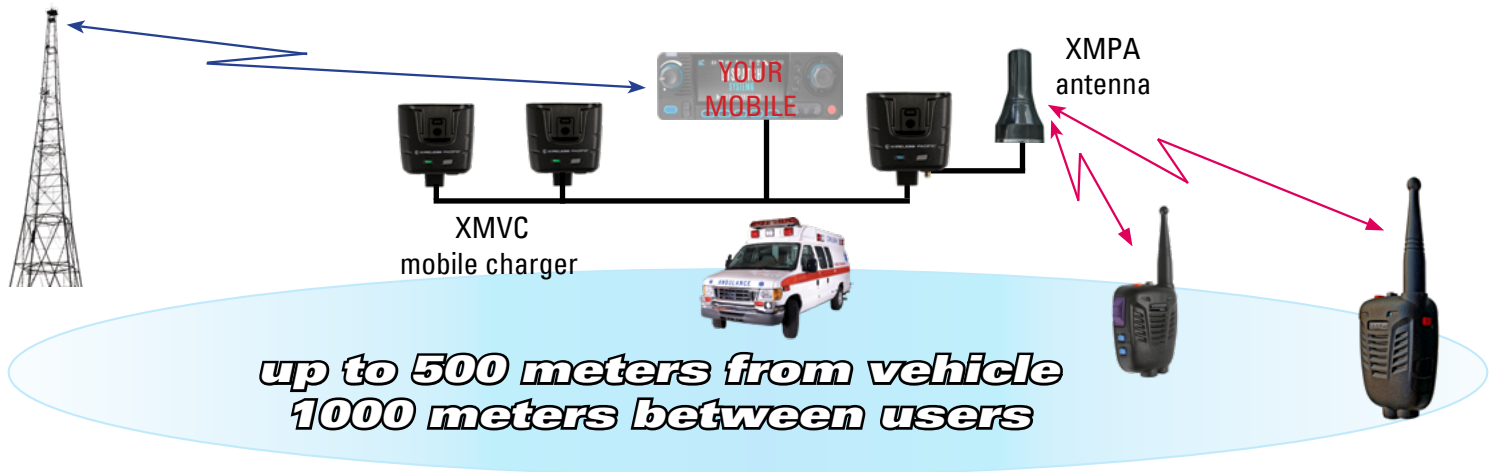
The Advance Emergency capability is available on both on standard Elite Plus configurations as well as multi microphone/ single gateway configurations.

Ordering:

- 1 x X10DR-EX2 Elite Plus X10DR
- 1 x XEX2 Extra Elite Handset
- 1 x XIC-0.25 Interface cable 15cm
- 1 x XIC-** Desired length Interface cable
- 1 x XDIA Dual Interface Adaptor
- 1 x XCA -** Radio specific cable adaptors



Triple Elite Plus Handsfree connected to one mobile radio (one gateway)



Elite Plus X10DR handsets can be configured so that multiple handsets can communicate locally, “off-net” in Handsfree talkaround. Handsfree mode requires use of an earpiece or headset when more than one handset has its handsfree active. To enable Handsfree mode double press the talkaround button, the handset LED will change to a purple colour and a unique tone will sound and repeat every 30 seconds as a reminder tone. To reset simply press Talkaround button again.

The X10DR has been specifically designed for outside high noise environments and incorporates advanced noise and echo cancelling technology to significantly limit background noise making it suitable for handsfree duplex conversations. Our handsfree mode allows users to communicate securely and privately locally on-site amongst themselves without the need to press to talk. While in many cases not essential, use a plug-in earpiece and locate the X10DR handset device on the user’s shoulder, i.e. close to the users mouth for acceptable performance. For best handsfree operation, we would recommend use of noise cancelling headset with a boom microphone which can be located close to the users lips. The X10DR naturally provides programmable external microphone sensitivity so just about any available audio headset device can be supported.

Note: Command/Auto Relay Mode is not compatible with three handset/gateway operation and should be disabled.

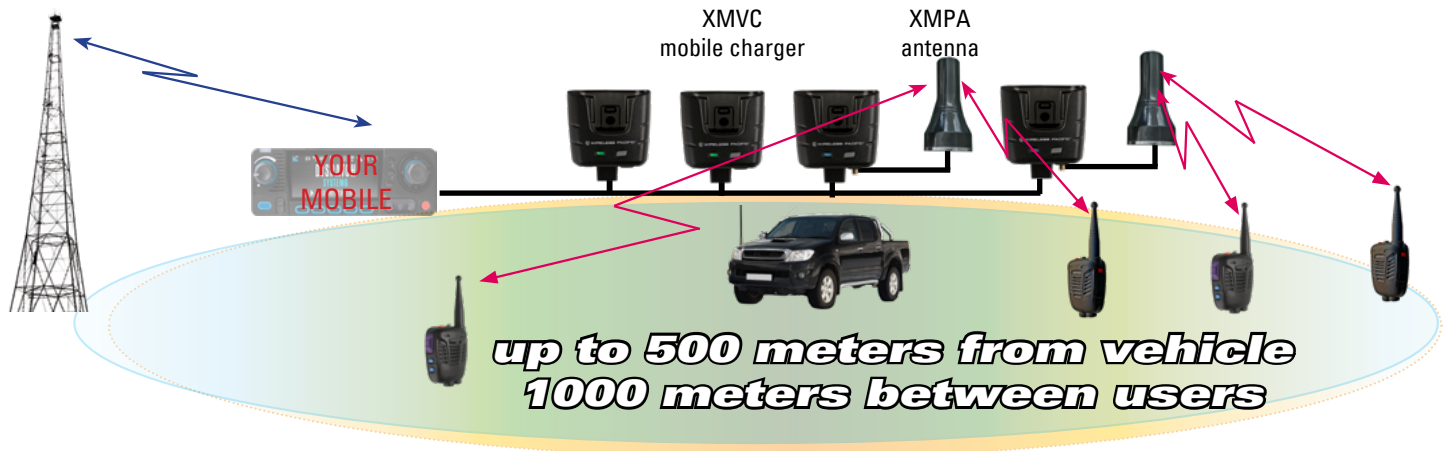
Ordering:

1 x X10DR-EX2	Elite Plus X10DR
2 x XEX2	Extra Elite Plus Handset
1 x XCA -**	Radio specific cable adaptor



* AC Plug - US/EU/AU
 ** to suit radio model
 *** Choose XIC length to suit

Elite Plus Handsfree with dual Gateways connected to one mobile radio



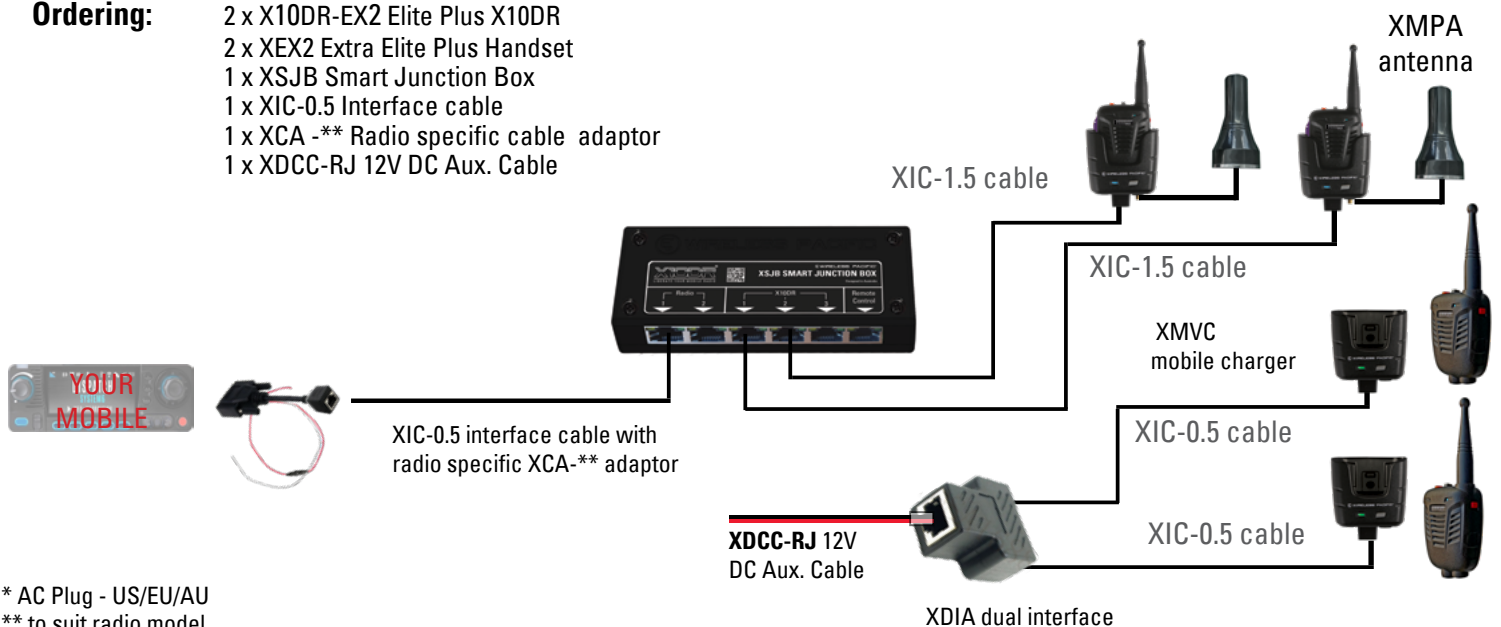
The XSJB Smart Junction Box can be used to connect multiple X10DR Elite mics to a single mobile radio. For non-handsfree operation, each user simply presses the PTT button to talk on the radio one and uses the Elite Plus mic's Control Talkaround button to talk locally with other team members handsets associated with that vehicle.

Elite Plus X10DR handsets can be configured so that multiple handsets can communicate locally, "off-net" in Handsfree talkaround. Handsfree mode requires use of an earpiece or a headset for optimum audio performance. To enable Handsfree mode double press* the talkaround button, the handset LED will change to a purple colour and a unique tone will sound and repeat every 30 seconds as a reminder tone. To reset simply press Talkaround button again.

When multiple gateways are connected, handsfree by too many simultaneous users may create confusion, in such cases we suggest the default operation be Press To Talk using Talkaround button, with only those users actually requiring hands-free being enabled. We suggest field trials to find the optimum audio settings and positioning of microphones for both clarity and operational effectiveness for your specific requirements.

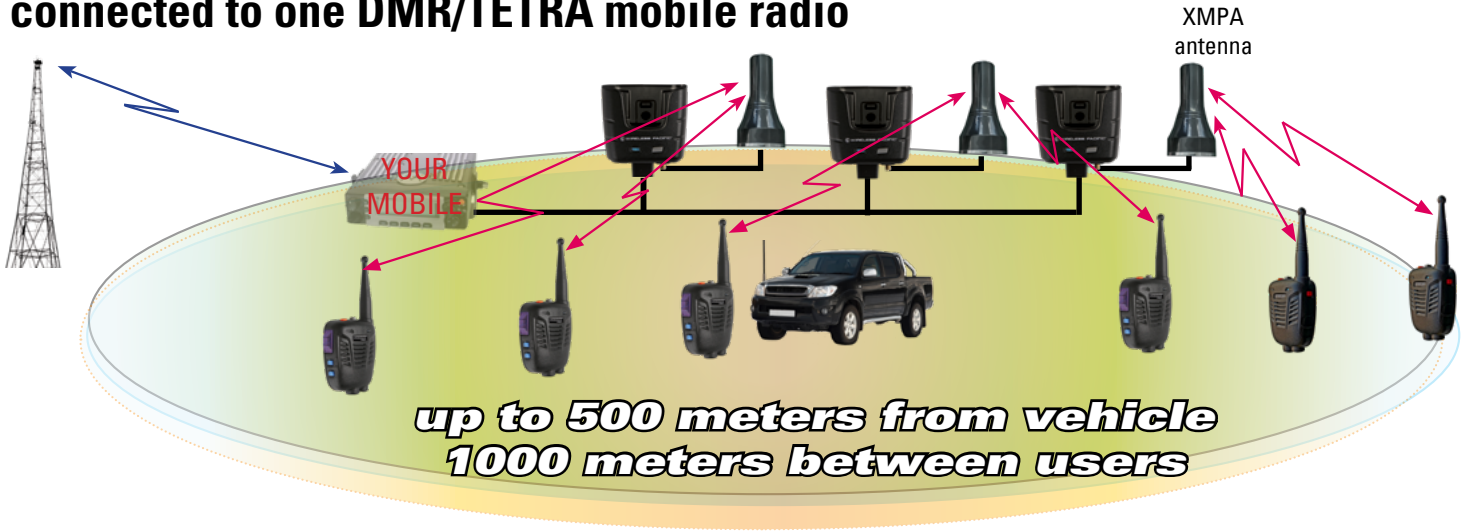
The XSJB connects to the host radio via radio model specific XCA series cable adaptor using XIC interface cable. The X10DR gateways connect to the XSJB via XIC-1.5 interface cables.

- Ordering:**
- 2 x X10DR-EX2 Elite Plus X10DR
 - 2 x XEX2 Extra Elite Plus Handset
 - 1 x XSJB Smart Junction Box
 - 1 x XIC-0.5 Interface cable
 - 1 x XCA -** Radio specific cable adaptor
 - 1 x XDCC-RJ 12V DC Aux. Cable



* AC Plug - US/EU/AU
 ** to suit radio model
 *** Choose XIC length to suit

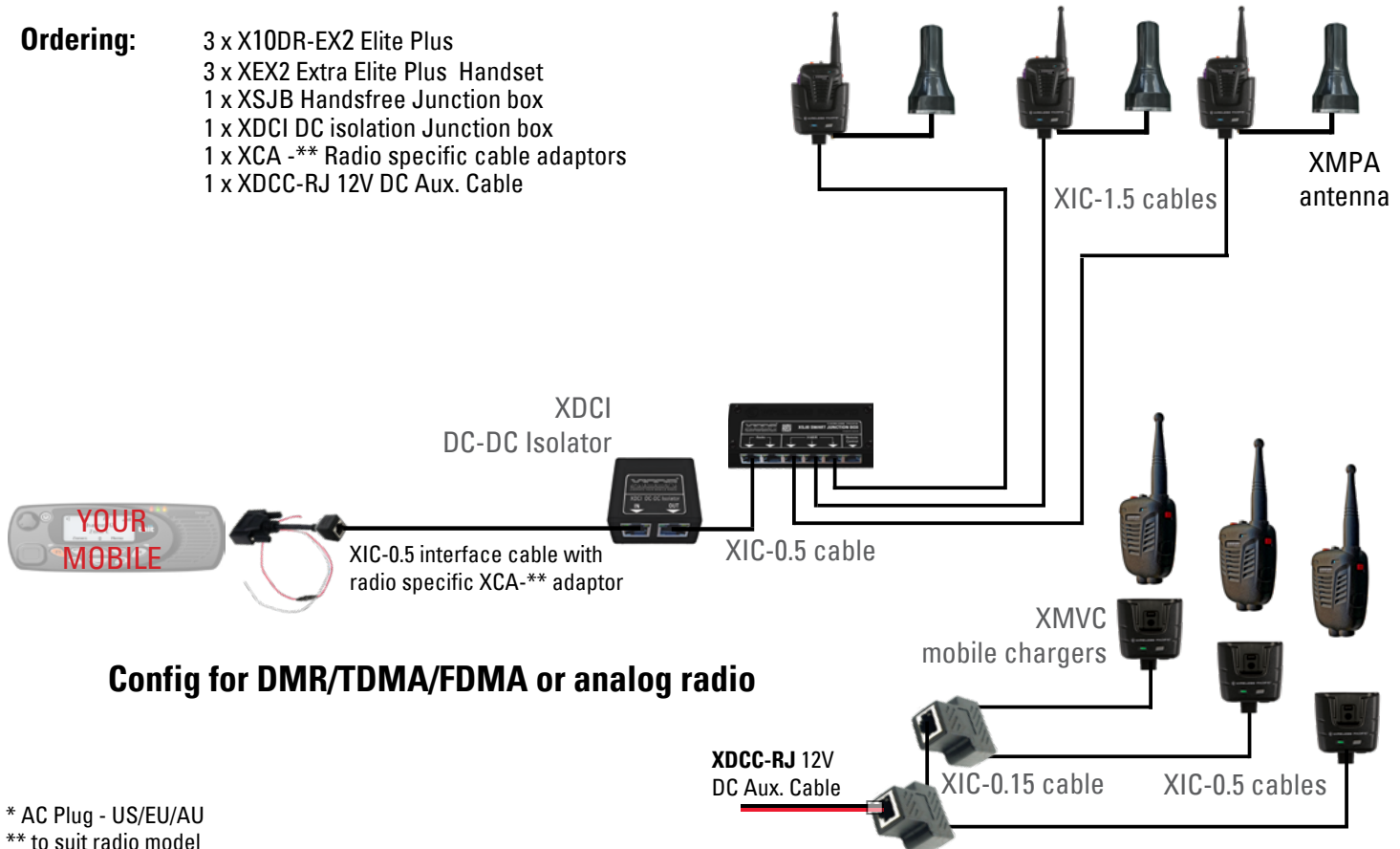
Elite Plus Handsfree with triple Gateways connected to one DMR/TETRA mobile radio



The XSJB smart junction box can be used to connect multiple X10DR Elite mics to a single mobile radio. For non-handsfree operation, each user simply presses the PTT button to talk on the radio one and uses the Elite mic's Control Talkaround button to talk locally with other team members handsets associated with that vehicle. For handsfree operation, users should be kitted with a headset or earpiece.

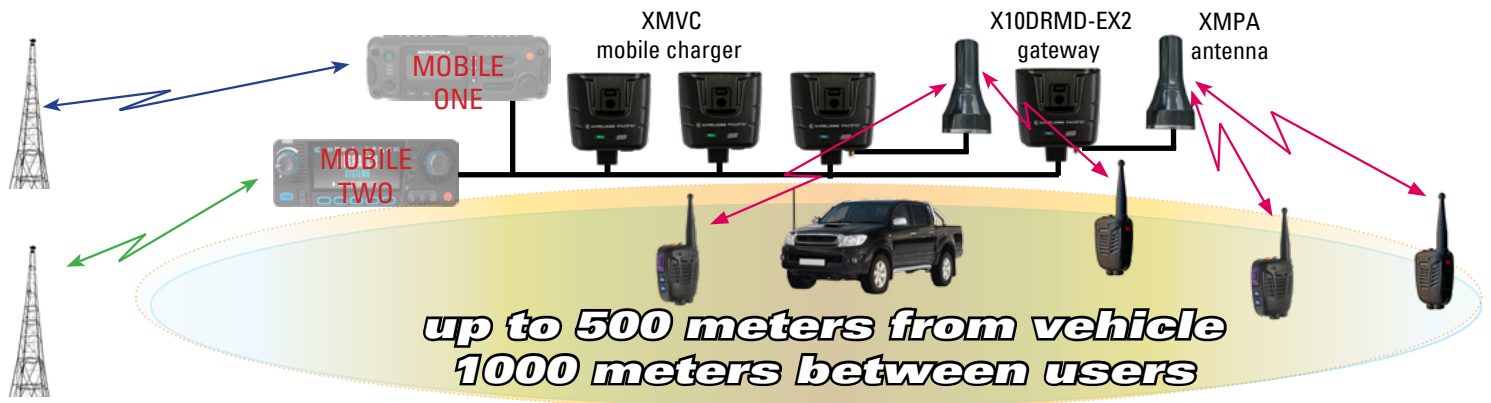
This application is identical to Elite Application Note 17 but with inclusion of a DC isolation junction box to allow use with any mobile radio including TDMA/DMR/ MotoTrbo™ mobile radios.

- Ordering:**
- 3 x X10DR-EX2 Elite Plus
 - 3 x XEX2 Extra Elite Plus Handset
 - 1 x XSJB Handsfree Junction box
 - 1 x XDCI DC isolation Junction box
 - 1 x XCA -** Radio specific cable adaptors
 - 1 x XDCC-RJ 12V DC Aux. Cable



* AC Plug - US/EU/AU
** to suit radio model
*** Choose XIC length to suit

Elite Plus Handsfree with Multiple Gateways connected to two mobile radios



The ZSJB Smart Junction Box can be used to allow up to 2 mobile radios to be connected to multiple X10DR Elite mics. For non handsfree operation, each user simply presses the PTT button to talk on radio one and uses the Elite mic's Control button as PTT for radio two. A unique marker tone with a pre-adjustable volume level is attached to the tail of each secondary radio reception to inform the user which radio's audio they have just heard.

Users should use common radio protocol and should not attempt to talk on the second radio when the first user is already talking on radio one. (Doing so would cause both radios to transmit with the audio from both microphones mixed being sent over the air). Should either user press their emergency button, both radio's emergency can be triggered. "Off-net" local talkaround is not available in this dual radio configuration but all users hear all communications as usual as they are sent over the channel.

Elite Plus handsets can be configured so that multiple handsets can also communicate locally, "off-net" in Handsfree talkaround. Handsfree mode requires use of an earpiece or a headset for optimum audio performance. To enable Handsfree mode double press* the talkaround button, the handset LED will change to a purple colour and a unique tone will sound and repeat every 30 seconds as a reminder tone. To reset, simply press the Talkaround button again. Note when handsfree mode is active it is **not possible to transmit** on radio 2 but receive operation remains the same.

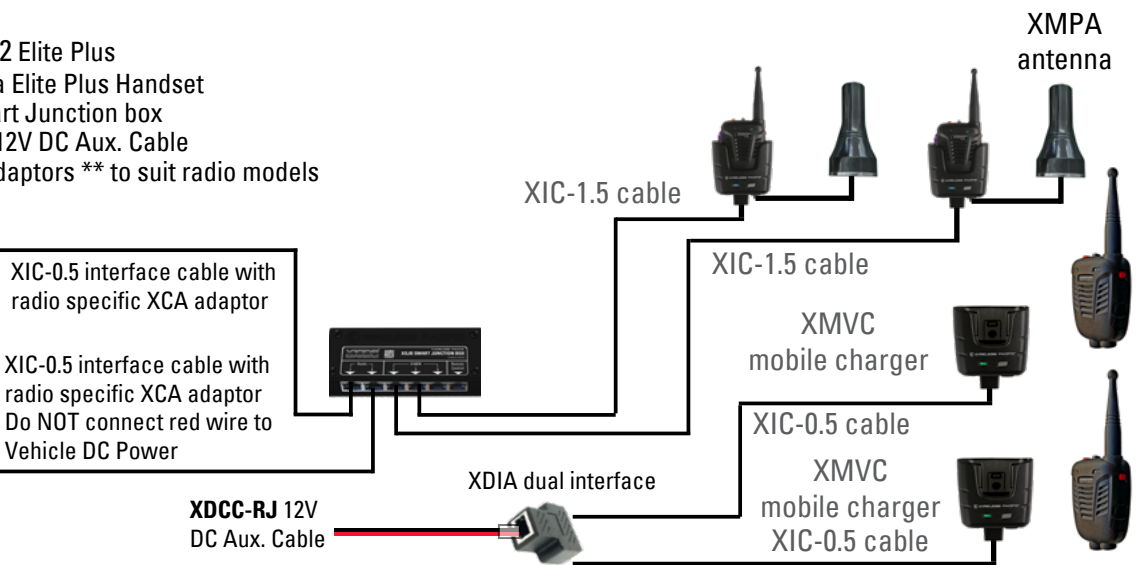
We suggest field trials to find the optimum audio settings and positioning of microphones for both clarity and operational effectiveness for your specific requirements.

The XSJB connects to the two host radios via radio model specific XCA series cable adaptors using XIC interface cables. The X10DR gateways connect to the XSJB via XIC-0.5 interface cables.

- Ordering:**
- 2 x X10DR-EX2 Elite Plus
 - 2 x XEX2 Extra Elite Plus Handset
 - 1 x XSJB Smart Junction box
 - 1 x XDCC-RJ 12V DC Aux. Cable
 - 2 x XCA -** adaptors ** to suit radio models



Dual Radio Fit-up



* AC Plug - US/EU/AU
 ** to suit radio model
 *** Choose XIC length to suit

Configuration for non TDMA radios. TDMA radios may require a XDCL to be connected in series with one gateway

System Note: Elite Plus 3rd Handset use

For best overall performance, we generally recommend a maximum of two operational handsets per gateway device. However use of a third handset is possible but may on occasions cause the Out Of Vehicle Communication System to be randomly subject to a higher level of inter/intra-system interference due to inherent limited spectrum utilization issues and system usage from time to time.

The degree of what might appear random interference is subject to a variety of factors including the number of gateways operational in a single coverage area and general 2.4GHz spectrum utilization from other sources in general.

Three handset operating purely in relay mode and not connected to a gateway is typically less subject to these RF environmental operational impacts.

However if a gateway connection is required **ONLY 2** handsets can be implemented if relay mode is desired.

We strongly suggest should you plan to use a third handset with a vehicle's gateway that you first trial to make sure your operational requirements can be met before implementing major 3HS1GW deployments.

