LIBERATE YOUR MOBILE RADIO

Range Extension

ELITE Plus Models Only

Enhancing In-To-Building Coverage

To significantly enhance in-to-building coverage, Elite Plus handsets are all capable of relay mode. This exclusive X10DR Elite Plus capability means that one or two user handsets, when walking out of range from the vehicle's gateway, can still communicate via a still in-range 'relay' handset. There are two available operational relay modes:

Command Relay mode*:

The Command Relay feature is activated by default in all Elite Plus handsets but requires user to manually enable. Operation is enabled by long pressing the Volume Up button until unique confirmation tones sound and the handset's LED changes to yellow.

Automatic Dynamic Relay mode*:

Automatic mode once activated by the field programmer is then automatically in operation unless manually disabled. Handsets on power up are in Auto relay mode and their LED glows yellow. Handsets must be also paired with each other to communicate in this mode.(see X10DR Plus user manual for pairing instructions)

*Besides be paired to the vehicle's gateway device each handset must be also paired with each other to communicate in this mode.(see X10DR Plus user manual for pairing instructions)

System Note: Multiple Elite Plus 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 cause the Out of vehicle communication system to be subject to a higher level of inter-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. A third handset operating in relay mode connecting to an out of gateway range handset is typically less subject to these RF environmental operational impacts. We suggest should you plan to deploy 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.

Pre Deployment Relay Handset Pairing

IMPORTANT

We highly recommend that handsets **ONLY** have its existing gateway We highly recommend that handsets **ONLY** have its existing gateway and specifically required associated handsets paired. Adding additional unrelated handsets or gateways will increase connection times. If unsure, first erase all prior pairing in handset. Next first pair the related gateway BEFORE pairing with related handsets. For multi gateway vehicle deployments using XSJB/XFSB, for Relay Mode we suggest that each handset be paired with up to 4 (maximum) other handsets paired to those gateways, so as to maximize the opportunity for other handsets to RELAY communications with an "out of gateway range" associated handset.

Erase Handset:

To reset pairing in a handset: With the handset powered off, hold the PTT and volume up button while powering on by pressing the red On/Off button. Master resetting drops all previous pairing. Turn handset Off and the On and the handset will be in automatic pairing mode and pairing tones will sound.

Relay Mode Handset Pairing (Elite Plus Only)

Each Elite Plus X10DR handset is capable of Relay mode either Command or Automatic depending on device programming. To be part of a handset Relay group, those handsets need to be paired with each other, after **FIRST BEING PAIRED WITH THEIR ASSIGNED GATEWAY**.

To add a handset to your list of possible remote handsets.
- First turn Relay mode On* (long press Volume up button- LED turns yellow)
- Place the Relay handset into Touchless pairing mode by simultaneously pressing both Volume up/down and the Control (Talkaround) button ~ 5 secs. Tones will sound.
- Now put the handset to be added into pairing mode by pressing both volume buttons until pairing tones sound.
- Place handsets close together Pairing complete confirmation tones will sound after a few seconds.
- Turn off the added handset and repeat process with additional handsets, as required.
- Then repeat procedure until all handsets have been paired with each other.

Process complete.

*Handsets programmed for Automatic Relay mode are already active, so there is no need to long press the volume up button before pairing with other handsets)

Command Relay Mode Operation

Manual on demand deployment

By default, all Elite Plus handsets can enable Command Relay mode. To make operational use of Command Relay mode, one team member walks towards where extended coverage is required (e.g. inside a building's lobby). After confirming a reliable vehicle gateway connection exists, Command Relay mode is activated by a long press of their handset's Volume Up button. Upon hearing three beeps, the user releases the button and will notice their handset status LED has changed to yellow with blue flash, indicating that Command Relay mode is now active and they are connected to the mobile vehicle's gateway. Their partner/s are then free to enter deeper into the building and upon losing connection to the gateway, their handsets will search and automatically connect to the "Command Relay" handset and their handset LED will glow yellow. Alternatively, they can immediately connect to the Command Relay handset by a short press of their handset's red "search" button - their handset becomes a "Remote" and their handset LED will then change to solid yellow to indicate its new connection status.

All conversations are now relayed backwards and forwards to the gateway via the Command Relay handset. All talkaround, handsfree, emergency capabilities remain fully operational and naturally all users can hear each other. When back in-range, a remote user can re-press their red search button to reconnect back to their vehicle's gateway. Handset status LEDs will glow blue when transmitting over the host mobile radio, or green when talking locally, or purple if handsfree mode is activated. To deactivate Relay mode at any time simply long press that handset's Volume Up button until you hear one beep. All handset status LEDs will now change back to their default color.

Unattended Command Relay handset

Naturally, there is no need for the Command Relay handset to attended, a relay enable handset can simply be placed wherever is the best "relay point "to ensure communication can be achieved in the desired remote location. For example, the entrance to a shopping mall, entrance to a local stadium, down a long corridor leading from a hospital emergency entrance into a distant triage area. Typically the point where line of sight communication is lost with the vehicle.

Remote from the vehicle - Stay connected

Sometimes all responders may have no choice but to travel well out of range of the vehicle. With Command Relay mode they can remain in contact with each other via Talkaround or Handsfree full duplex when active. When back in range of the vehicle they automatically will reconnect and be able to again communicate over the host mobile radio network. When out of range of the vehicle and disconnected from the gateway the Command Relay handset LED will flash yellow. User can typically up to 250 metres line of sight from each other in such situations.

Command Relay Mode

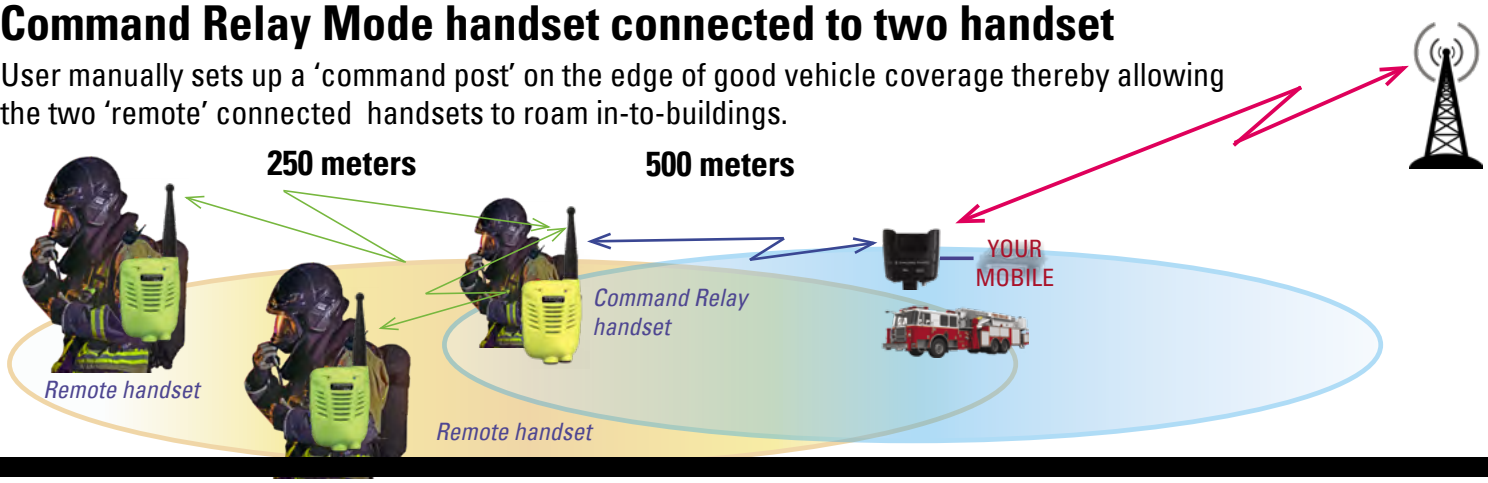
User manually activates Command Relay Mode (Long press Volume Up button) at edge of good coverage, so one or two pre-paired handsets can automatically connect via the Relay handset when coverage to the gateway is lost, or users can short press Search (Red Off/On button) for immediate connection. Short press Search (Red Off/On button) again to make it reconnect to its gateway.

Elite Plus Handset with Command Relay active

Other pre-paired Elite Plus handset

Command Relay Mode handset connected to two handset

User manually sets up a 'command post' on the edge of good vehicle coverage thereby allowing the two 'remote' connected handsets to roam in-to-buildings.



Automatic Relay Mode Operation

Automatic Dynamic deployment

Automatic Relay mode is major breakthrough in long distance wireless microphone technology. It allows communication to occur via a nearby team member's handset when communication coverage is lost with the vehicle X10DR's gateway. This ensures connectivity to the host mobile radio, satellite terminal, control console etc as users go about their business. Being totally dynamic, anyone of the gateway's handset will automatically assume Relay mode master should a handset lose connectivity all without any user intervention. It's the wireless microphone equivalent of wide area roaming. Users require little if an additional user training other than user awareness handset can now act as Relay point.

The status LED of an Auto Relay mode enabled handset glows yellow with a periodic blue flash to let the user to know when they are connected to their gateway. When the user presses the Radio PTT button the LED changes to blue, but when transmitting in Talkaround it glows green, or purple when in Handsfree mode. Should the handset lose connection to the gateway its LED will flash yellow as it search for an alternative path via a nearby handset. Once connected to a relay handset it now operates as a 'Remote handset" and its status LED will glow solid yellow. All operation is automatic and users operate their handsets as normal. A "slave" Remote handset can not connect act simultaneously as a "master" Relay handset. Automatic mode can be disabled by long pressing the volume up button until you hear one beep. Re-activation occurs by either long pressing the volume up button again, or by powering off and on the handset.

Unattended Auto Relay handset

Like Command Relay mode, any Auto handset can be simply placed at the optimum desired Relay point to enhance in-to-building coverage and the other handset/s will automatically link to it as the move in and out of the building.

Standalone Use

Auto relay mode allows two or three handset to operate completely independent from the vehicle. The handsets can communicate up to 250 metres from each other (up to 500m radius). Operating on license free, virtual exclusive channels these fully AES128 encrypted "portable"with dynamic constant key change, offer the ultimate in tactical voice protection at a price a fraction of traditional AES portable radios.

Automatic Relay Mode

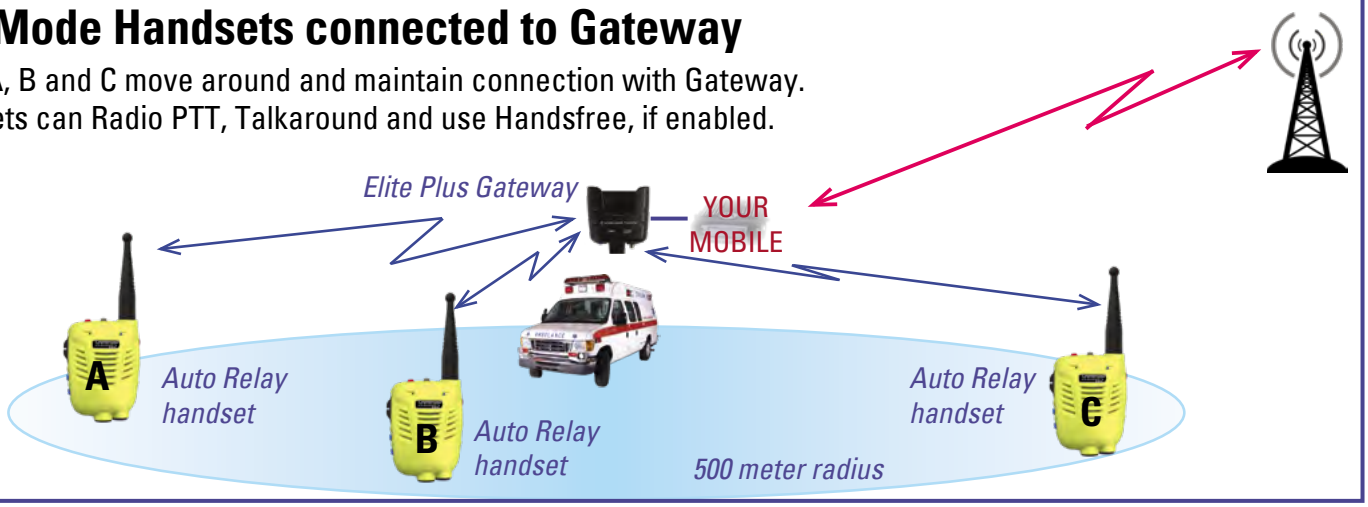
Elite Plus Handset with Auto Relay active

Auto Relay handset becomes Remote handset

Upon power up Auto Relay mode programmed handsets always look for an alternative radio path if the connection to its gateway is lost. Once connected via another handset they become a Remote handset and their Relay capability is temporarily disabled until connection to their current Auto Relay handset is lost. A short press of the Search (Red Off/On button) will make it search for gateway or another in-range Relay handset to connect to.

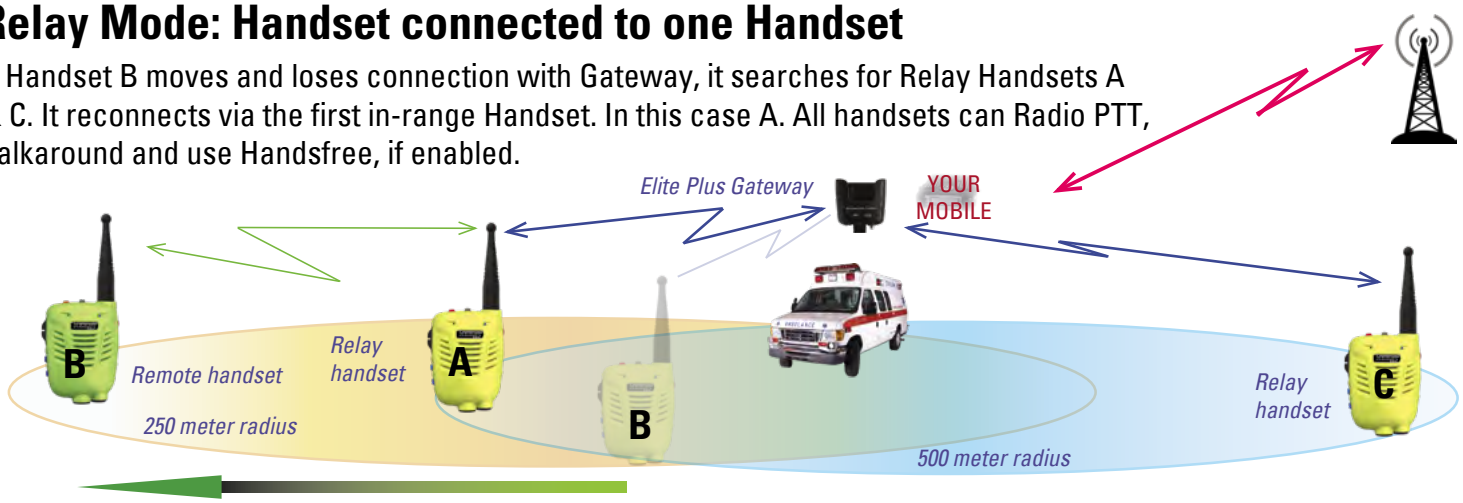
Relay Mode Handsets connected to Gateway

Handset A, B and C move around and maintain connection with Gateway.
All handsets can Radio PTT, Talkaround and use Handsfree, if enabled.



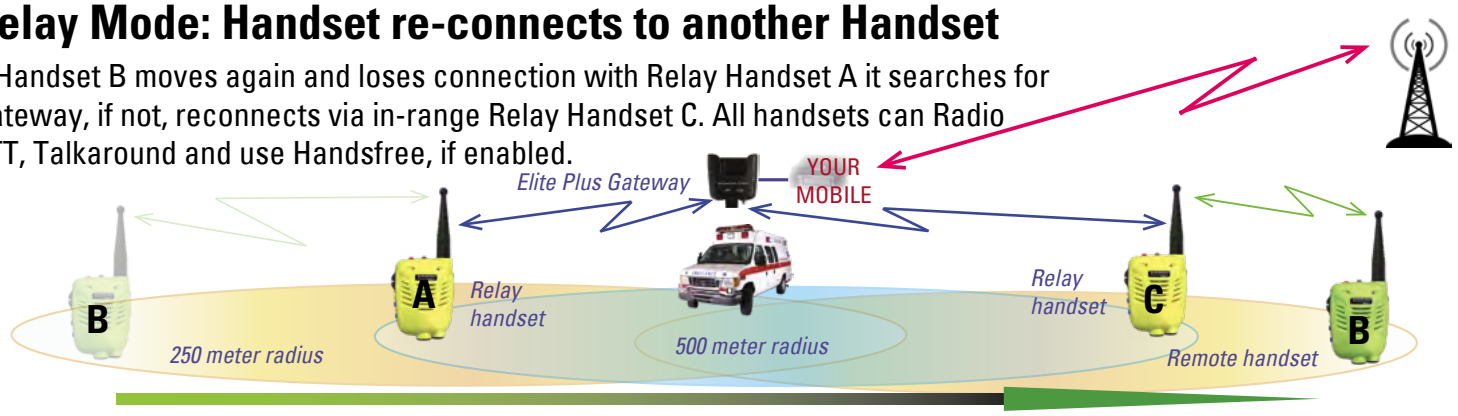
Relay Mode: Handset connected to one Handset

If Handset B moves and loses connection with Gateway, it searches for Relay Handsets A & C. It reconnects via the first in-range Handset. In this case A. All handsets can Radio PTT, Talkaround and use Handsfree, if enabled.



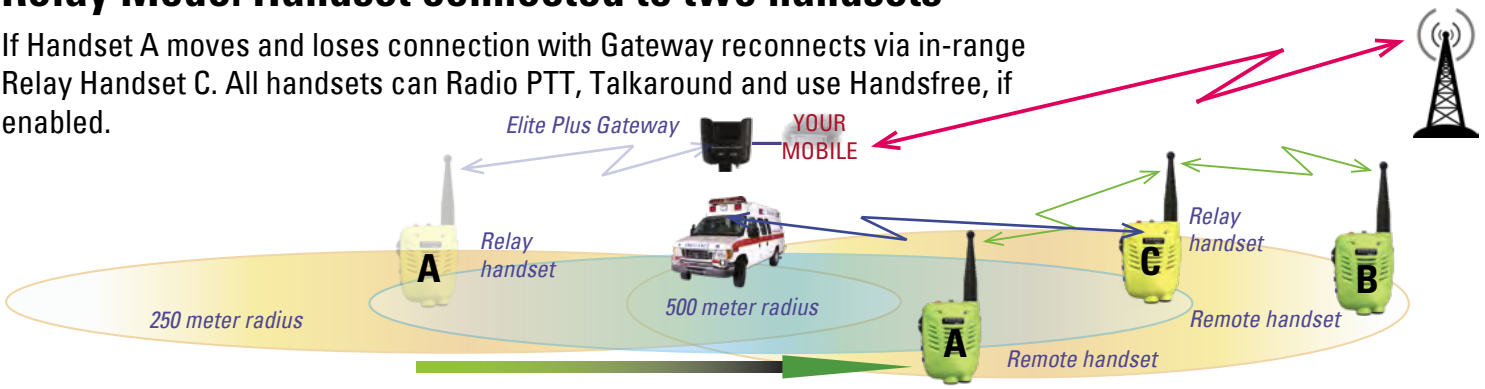
Relay Mode: Handset re-connects to another Handset

If Handset B moves again and loses connection with Relay Handset A it searches for Gateway, if not, reconnects via in-range Relay Handset C. All handsets can Radio PTT, Talkaround and use Handsfree, if enabled.



Relay Mode: Handset connected to two handsets

If Handset A moves and loses connection with Gateway reconnects via in-range Relay Handset C. All handsets can Radio PTT, Talkaround and use Handsfree, if enabled.



Relay Mode: when Gateway connection is lost.

If Handsets A, B & C lose connection with gateway all handsets search for alternative connection. If Handset A finds B they connect, when handset C finds B they connect and all can now Talkaround or Handsfree, if enabled, amongst themselves. If A loses connection with B, A will first look for Gateway, if not, B or C. Handset B is always looking for reconnect to gateway. If any handset presses Radio PTT or Emergency then Out Of Range tone sounds.