



Cross Band Translation for Military Radios

Provided by the Advatech Pacific uGATE J3

The Universal Gateway to Telecommunications Equipment (uGATE) J3 is a small, ruggedized and self contained interface unit that allows any military push-to-talk radio network to interconnect with any other military push-to-talk radio network, such as SINCGARS, AN/PRC-159, AN/PRC-117, EPLRS (VOIP), MBTRS, JEM and many other legacy radio systems in use world wide. An H-250 Hand/Head Set compatible connection is the only requirement for connectivity and interoperability.

The uGATE J3 can be adapted to civil first responder application by changing the connectors, permitting, for example, the Police Department to communicate easily with the Fire Department in any community.

Operation is remarkably simple. The jack that normally accommodates the H-250 Hand/Head Set of radio A is connected via short audio cable to the A port of the uGATE J3 and the jack that is normally connected to the H-250 of radio B is connected in the same manner to the B port of the uGATE J3. The uGATE J3 activates by switching the PTT (Push To Talk) selector. Normal radio traffic keeps the unit active. If no incoming or outgoing signal is received within one hour, the uGATE J3 automatically powers down. During normal operations, the uGATE J3 battery provides up to two weeks continuous connection. During standby battery life exceeds 10 years. The battery can be recharged in about two hours from a companion charger unit through the H-250 monitor port.



Normally, when unit A receives a message, the uGATE J3 detects the audio and activates the PTT on radio B. Similarly, when unit B receives a message, the uGATE J3 detects the audio and activates the PTT on radio A. The PTT line remains active for 1.5 seconds after the last audio. The audio levels are self adjusting over a wide range of audio levels, requiring no calibration. The user simply sets the output volume on both radio A and radio B to midrange level and the uGATE J3 self-adapts to the connected radios.

A monitor feature functions as follows: the uGATE J3 features an H-250 drive port allowing a user to listen to message traffic over either radio on an H-250 Hand Set. If radio A "has the floor" the uGATE J3 does not monitor radio B and vice versa. It also has a small select switch that allows the H-250 user to selectively initiate a call to either radio or both. Once the switch is set, the call is made by activating the PTT switch on the



H-250 handset. The unit transmits a distinctive "End of Message (EOM) beep tone" at the end of each VOX hold up period. This is a convenience for the listener to know when he can speak again, similar to "over".

The uGATE J3 uses an internal rechargeable Lithium Ion battery (as used in most cell phones). The battery will not turn off until message traffic ceases, so the unit will attempt to continue to operate until the battery is out of power. When the battery voltage falls to the point that approximately 24 hours of operational

time remain, the uGATE J3 will put out a "low battery beep tone" (different from the EOM tone) at the end of the audio transmit time. This tone will not step on a message because it will be added at the end of the transmitted message.

The photos above are of the prototype uGATE J3, which has all three connectors (radio A, radio B, and the H-250 Hand Set) on one end of the unit. The production unit will have a slightly different, more user friendly, configuration with the two radio connections on one end and the operator interface (hand set and selector switch) on the other as shown below. The selector switch is small enough that is protected from accidental activation by the H-250 Hand Set connector.

