

### EUT Operation

The Atkinson Dynamics wireless interface unit is a communications device designed for industrial applications that utilize a "wired" Atkinson Dynamics system and require communication with an Atkinson Dynamics "wireless" unit or system. Each unit is equipped with a power cord that is terminated with a molded plug for 120VAC, 50/60Hz operation. A two-conductor audio cable attached to the unit enables connection to any wired intercom(s) in the system. An RF transmitter and receiver, manufactured by Linx Technologies, are located on a printed circuit board inside the unit. The RF parts operate in the 902-928 MHz band. A switch on the circuit board allows the user to select from eight channels (refer to Table 1 below). A "whip" style  $\frac{1}{4}$ -wavelength antenna is attached to an aluminum bracket that is mounted on the circuit board. An RG-174 coax cable, attached to the antenna, connects directly to the circuit board through a 50-ohm connector.

In standby, the interface unit is in "receive" mode. The RF receiver is powered up and the antenna is connected to the receiver through an antenna switch. The interface unit may receive audio from a wired intercom at the interface connector J1, or from a wireless intercom within range at the receiver "ANLG-OUT" pin.

When the interface unit receives audio from a wireless intercom, the signal passes through a low pass filter and noise reduction stage to a preamplifier circuit. This signal then passes through a relay to connector J1 where it is broadcast on any wired intercoms that have audio lines connected to the interface unit.

When an audio signal is present at interface connector J1, it is routed through two different paths on the circuit board. One path is through an audio sense circuit. When audio is detected by this circuit, the transmitter turns on and the receiver turns off. The antenna is switched from the receiver to the transmitter. The second path for the audio at J1 is to relay K2. Once K2 energizes, the audio passes through to an attenuation circuit and then to the transmitter ANLG-IN pin. The audio signal will then be broadcast on any wireless intercoms that are within range of the interface unit's transmitter.

All units are equipped with a squelch adjustment control potentiometer that is located on the circuit board. The squelch adjustment allows the end user to adjust the signal strength threshold level of the RF receiver in the interface unit. The incoming signal level must be higher than the signal strength threshold level for the receiver to acknowledge it; otherwise, the audio will be squelched.

CS2	CS1	CS0	Channel	Frequency (MHz)
0	0	0	0	903.37
0	0	1	1	906.37
0	1	0	2	907.87
0	1	1	3	909.37
1	0	0	4	912.37
1	0	1	5	915.37
1	1	0	6	919.87
1	1	1	7	921.37

Table 1: Channel-Selection Table