

SYSTEM INTERFACE



WRS-3 WIRELESS INTERFACE/ BASE STATION

FEATURES

- Interfaces wireless system with Clear-Com and other hard-wired intercom systems
- Use in partial or full duplex system
- Provides clear, noise-free transmission/reception
- Headset input
- Sidetone and listen level controls
- LED indicators for "signal" and "power"
- External speaker jack
- Transmit range up to 1/4 mile
- Rugged and lightweight
- Ideal in high- and low-noise environments



DESCRIPTION

The WRS-3 Base Station provides the freedom of wireless communications and the ability to interface the wireless system with any closed-circuit, three-wire intercom system. The transmission/reception design of the WRS-3 assures crisp, noise-free, duplex communications, even near RF fields, lighting dimmers, and other sources of electromagnetic interference.

The WRS-3 features a dynamic headset input, sidetone level and listen-level controls, as well as "signal" and "power" LED indicators. Two hands-free operating modes are possible: "transmit" or "stand-by" (receive only).

The Base Station's rear panel includes a switch for selecting system party-line operation. It also provides a squelch control, external speaker jack, external power source jack (12-18 VDC), and a 3-pin, male, XLR connector for interfacing with a hard-wired intercom system.

When the WRS-3 is interfaced with a Clear-Com intercom channel, the Clear-Com Station operators can easily communicate, hands-free, with the wireless system operators—just as if the

wireless operators are using standard Clear-Com belt-pack stations.

The WRS-3 operates with full duplex VHF Transceivers that must have the following operating frequencies: Transmit at 49.875 MHz (Channel D); Receive at 49.830 MHz (Channel A).

A telescope antenna is included with the WRS-3. It runs off 115 VAC mains, 60Hz, and can be optionally powered by a 30 VDC source.

The WRS-3 can be used in two different types of systems:

FULL DUPLEX

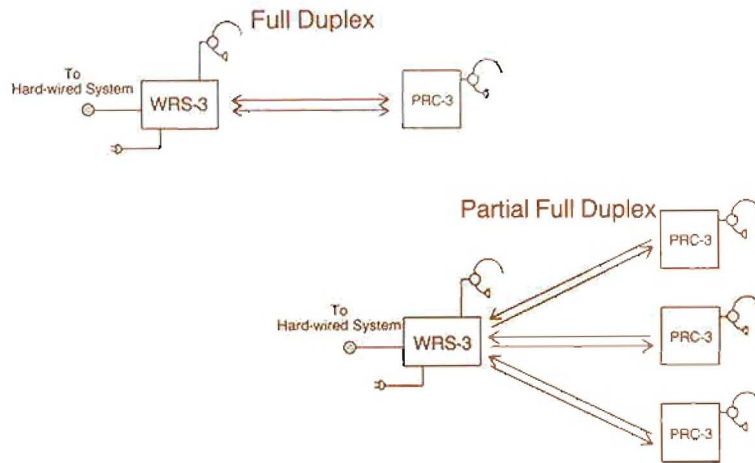
A Full Duplex system requires the Base Station and one 49 MHz Duplex Transceiver (eg Nady PRC-3). It permits continuous, simultaneous, and hands-free talk/listen ability between the Base Station user, Transceiver user, and hard-wired intercom users. All intercoms have continuous two-way communications and the Transceiver operates **just like a standard Clear-Com belt-pack station without wires.**

continued

PARTIAL FULL DUPLEX

This type of system requires the Base Station and two or more 49 MHz Duplex Transceivers. It provides the same hands-free, two-way communications as above, under slightly different operating conditions. All transceivers **except one** must be in receive-only ("stand-by") mode and each transceiver user must transmit one-at-a-time. All transceiver users listen simultaneously to the Base Station user and those on the wired intercom line. The one transmitting transceiver talks to the Base Station, and the other transceiver users can listen via a "party line" loopthrough in the Base Station. The hard-wired intercoms connected to the Base Station may communicate hands-free with the transceiver operators.

WRS-3 BLOCK DIAGRAM



SPECIFICATIONS

WRS-3 RECEIVER SPECIFICATIONS

Receiving System: FM Double Superheterodyne (simultaneous full duplex with receive-only "standby" option)

Sensitivity: $1\mu\text{V}$ (0dB) (20dB quieting)

Modulation Acceptance Bandwidth: 5kHz

Spurious & Image Rejection: 20dB min

Freq. Stability: 5 PPM (0°C to +40°C)

Receive Frequency: 49.875 MHz

WRS-3 TRANSMITTER SPECIFICATIONS:

Transmit System: Simultaneous full duplex

Output Power: $10,000\mu\text{V/m}$ at 3m

Max. Frequency Deviation: 4.5kHz

Spurious & Harmonic Emissions: 20dB min

FM Hum & Noise: 40dB

Freq. Stability: 5 PPM (0°C to +40°C)

Transmit Frequency: 49.830 MHz

WRS-3 GENERAL SPECIFICATIONS

Power Source: 115V, 60Hz AC, 30VDC optional

Service Range: approx. 1/4 mile

Dimensions: 5.3"W x 2.2"H x 6.8"D

135mmW x 56mmH x 173mmD

Weight: 2.5 lbs

WRS-3 INTERCOM INTERFACE SPECIFICATIONS

(Clear-Com line conditions)

Line Bridging Impedance: $>2k\Omega$ (200-10k Hz)

Line Level: -20dB, 0dB max

P.T.T. Voltage: 4 volts minimum

Mic Input: 200 Ω dynamic

Mic Pre-amp Freq. Response: 250-12k Hz with contoured response to enhance speech intelligibility

Headphone Load Impedance Range: 300-2000 Ω

Headphone Output Level: +10dBm before clipping

Distortion: 0.1% THD at 1kHz

Headset Connector: D4M 4-pin male, Switchcraft type

Line Connector: D3M 3-pin male, Switchcraft type