Clear-Com®
COMMUNICATION SYSTEMS

TW-47 Front view

The **TW-47** is a stand-alone interface designed to connect a 2-way radio or walkie-talkie into a single channel of a standard Clear-Com, RTS*, or compatible 2-wire party-line intercom system. It provides both audio connection and "push-to-talk" transmitter keying, using standard Call signals.

The ability of a 1- to 5- watt walkie-talkie to both talk to and receive from the wired intercom system can greatly extend an intercom system's capability, especially in very large indoor and outdoor facilities and venues. The TW-47 is powered directly from the intercom line, and connection to the radio is via a single DB-9F 9-pin connector. The interface has extensive RF and EMI isolation to prevent the 2-way radio RF from radiating into the intercom system.

Interfacing
In order to accommodate the widest variety of 2-way radios, the TW-47 is supplied with a 9-pin connector and wiring diagrams for many 2-way radios.

The combination of internal jumpers (switches) and front panel "Transmit" and "Receive" level controls assures correct level matching to virtually any radio. Adjustments from -57 dB microphone level to +11 dB line level are supported. A bi-color LED provides a visual indication of audio level from the
intercom line.

* For RTS systems equipped with the
 Call Light feature.

Radio Transmitter 'Keying'

A relay contact provides the required "Push-to-Talk" transmitter "keying"of the radio. This relay is activated by detecting the "Call Signal" on the intercom channel. The relay contacts, in conjunction with the custom-made radio cable, allow correct transmitter keying of virtually any type of radio. A "Transmit Key" LED indicates that the relay is active.
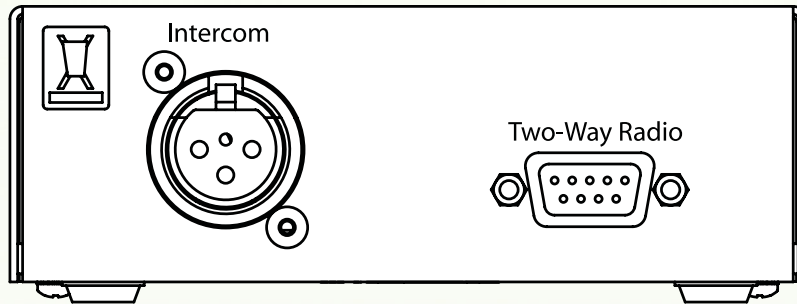
Certain Clear-Com stations can be set up so that the Call signal is activated automatically when the Talk button is pressed (Talk-on-Call). With these stations, the radio transmitter can be keyed by simply pushing the Talk button. The operation of the 2-way radio then becomes seamless and transparent to station users.

Features:
- Interfaces any 2-way radio to a Clear-Com, RTS®, or compatible system
- Accepts any walkie-talkie
- Powered by the intercom line
- Easy to interconnect
- Individual transmit and receive level controls
- Bi-color LED audio level indicator
- Small footprint–will fit anywhere

Applications:
- Special event production and coordination
- Outdoor events
- Theatrical rehearsals
- Touring shows where all usable, licensed radio frequencies are already allocated
- House manager communications and tech rehearsals
- Wherever increased mobility and greater reach are required from the intercom system

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TW-47 Rear Panel

Technical Specifications:

dBu is an absolute measurement. 0 dBu is referenced to 0.775 volts RMS

Radio to Party Line

Line Chracteristics

Frequency Response:	200-20KHz ± 3dB
Max Gain:	>=-5dBu
Distortion:	<=0.3%
Noise:	<=-70dBu
Max Level Before Clipping:	>=+17dBu
Green LED Threshold:	-22dBu ± 3dB
Red LED Threshold:	-16dBu ± 3dB
Input Impedance:	400Ω ± 100Ω

Party Line to Radio

Line Characteristics

Frequency Response:	200-8KHz ± 3dB
Max Gain J7 ON, J8 ON:	-12dBu ± 3dB
Max Gain J7 OFF, J8 ON:	+2dBu ± 3dB
Max Gain J7 OFF, J8 OFF:	+27dBu ± 3dB
Distortion:	<=0.3%
Noise:	<=-50dBu
Max Level Before Clipping:	>=0dBu

Power Requirements

Input Voltage Range:	20-30VDC
Quiescent Current:	<=40mA
Current with Audio:	<=50mA
Current with Call:	<=60mA

Rear Panel Connectors
(1) XLR3F
(1) DB-9F

Front Panel Controls and Indicators

Transmit:	(1) Red LED
Audio Level Hi:	(1) Red LED
Audio Level Norm:	(1) Green LED
Receive Level Adjust:	(1) Control
Transmit Level Adjust:	(1) Control

Dimensions
1.8 in. H x 3.95 in. W x 6.4 in. D
(46 mm x 100 mm x 163 mm)

Weight
1 lb. 4 oz. (0.6 kg)

Notice About Specifications
While Clear-Com makes every attempt to maintain the accuracy of the information contained in its product manuals, that information is subject to change without notice. Performance specifications included in this manual are design-center specifications and are included for customer guidance and to facilitate system installation. Actual operating performance may vary.

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