



## AD913 Transceiver Interface

### Operating Instructions

In the following paragraphs we have used the word *transceiver* to refer to what are commonly called walkie-talkies. The word *circuit* refers to two or more intercom stations which are connected, by cable, in parallel in a common-talk relationship. More than one independent communications circuit can exist in a Production Intercom system. We will reserve the word *channel* to refer to a radio frequency shared by multiple transceivers. The AD913 is **NOT** a transceiver.

The AD913 is an active device which allows communication between a Production Intercom (or compatible) cabled system and a simplex (press-to-talk/ release-to-listen) radio system, typically a pair or more of portable transceivers. To connect a full duplex (simultaneous talk/listen) radio system, use the AD903.

The AD913 allows audio on the cabled communication system to be transmitted to one or more remote transceivers on the same channel as the transceiver dedicated to be 'base', and transmissions from the remote units to be heard by parties on the cabled circuit.

The AD913 connects directly to a transceiver via its auxiliary input/output connector (typically the connector used for a remote mic/spkr accessory), converting it to a wireless base station on the cabled system. The AD913 is powered from the intercom system's power supply. The transceiver must have its own power source, either batteries or an AC/DC power supply.

The AD913 provides a mic. level output for connection to the transmitter section of the transceiver, and has a line level input to accept the headset level output from the receiver section of the transceiver. It also has a relay circuit to provide push-to-talk (transmit-on) switching. (commonly referred to as PTT.)

**The PTT function of the base transceiver is activated by pressing and holding the signal light button of any station on the cabled circuit to which the AD913 is connected. The signal lamps on all other outstations will light, in the normal way. The speech on the cabled circuit will be sent to the transmitter, and the necessary transmit will be activated. All stations will know, by their signal lamp, that the transmitter is on. When the signal lamp button is released, incoming transmissions from the remote transceiver(s) are heard just as from another cabled station.**

Setting up:

The AD913 is intended for operation with a wide variety of transceivers - handheld, mobile or fixed types, and can be used in many applications. It is therefore not possible to give definite instructions for setting up. However the following notes offer a guide to avoiding most difficulties that might be experienced. By experimenting with layout, the optimal arrangement will soon be found.

1. Connections between the AD913 and the transceiver are via the 6-pin XLR on the rear of the AD913. Pins 1 & 2 are input from the transceiver. Pins 3 & 4 are output to the transceiver. Pins 5 & 6 are the normally-open relay contacts for operation of the PTT circuit in the transceiver, where required. When Pins 5 & 6 are open (relay not activated), the audio output from the AD913 is also interrupted. Some transceivers key their transmit functions by simply switching the microphone of the remote speaker/microphone on and off. Interrupting audio output from the AD913 to the transceiver makes it possible to use this type of transceiver.

**Connections at the transceiver end will vary with the make and model. Diagrams for some common models are attached. Production Intercom will build connecting cable assemblies for many makes and models of transceivers.**

2. In general, the higher the radio transmitter power, the more care must be exercised in setting up the system.

3. Most modern mobile radio systems are FM and equipped with a squelch or mute facility so that the radio is silent in the absence of an incoming signal. The AD913 is intended for use with such radios. Although some users have had success even with inexpensive 49mHz wireless headsets, use with AM, SSB, or other systems without squelch (mute) is not recommended.

4. Connection of the AD913 adaptor to the cabled system is by 3 conductor XLR cables in the usual manner. Although equipped with circuit input and output connectors, this loop cannot be used except when very low power transmitters (less than 100mW output) are being connected.

5. For typical use with hand-held portables and small mobiles up to 5W output, the unit must be connected with ONE cable only, i.e: at the end of a line or as a spur to a line. (A spur can easily be set up with a Y-cable or an SB-1 splitter box).

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6. This spur or line end must be a minimum of 6 feet long, kept straight, without loops, etc. and must point away from the remainder of the cabled circuit. The transmitting antenna is then placed beyond that. In other words, with the exception of the AD913's own cable, the antenna must be at least 6 feet from any other part of the cabled system.

7. For use with higher power transmitters, typically mobile units or fixed base units, the above still applies. However these units do not have an integral antenna and should be located still further from the cabled circuit (up to 9 feet away) unless there is a metal screen in between, e.g: a vehicle roof.

8. With the two systems connected and switched on, the operating levels should now be adjusted. Without PTT applied to the 'base' transceiver (connected to the AD913), set its volume control to mid-position. If fitted, adjust squelch for correct mute operation. Transmit normal speech from a remote transceiver. This signal should be heard on the cabled system. Adjust the 'Receive' preset on the AD913 until this remote transceiver signal is as loud as the signal coming from other (cabled) stations in the system.

9. Press the signal light button on any cabled station. Any remote transceiver should receive the 'base' transceiver sending the speech from the cabled circuit. Adjust the 'Send' preset on the AD913 until this speech is of a similar volume to other transceivers on the channel. If only one remote transceiver is in use, adjust the 'Send' preset until the volume at the remote matches the volume from the 'base' when used without the AD913.

**Important note:**

**The recessed screwdriver adjust presets marked *Send* and *Rec* are 15-turn potentiometers. A single turn will not create an easily perceived change until the threshold is found. Particularly on the *Rec* side, a point will be found where satisfactory loudness is combined with the lowest noise coming from the transceiver.**