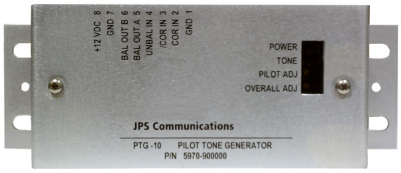
PTG-10™

Pilot Tone Generator

JPS Interoperability Solutions

The PTG-10 produces a crystal-controlled pilot tone to transfer a COR (unsquelch) signal from a remote receiver site to a voter or repeater. Since the PTG-10 transfers the COR signal over the same path as the receive audio, there is no need for a second communications path for the COR signal.



Benefits

- Allows use of low cost receivers in voting system.
- Permits audio and COR Active signal to occupy same pair of wires.
- Produces two standard pilot tones: 1950Hz or 2175Hz.
- Insures the integrity of link between boter and receiver.
- Gives the voter the information it needs to ignore a faulty receiver site.
- Provides screwdriver-type terminal block for quick & easy installation.
- Wide DC power input operating range from +11 to +15 VDC.
- Low noise and high signal integrity are maintained over long distance links by balanced audio circuitry. Provides two helpful status LEDs: Power On and COR Active.

PTG-10 Overview

In an LMR voting system, voting receivers are strategically placed to fill dead spots where lower power portable or mobile radios can't talk back to the higher power main repeater site. Each receiver is linked to the voter, which continuously compares the audio from all unsquelched receivers and passes the signal with best quality to the dispatcher and/or repeater.

The voter must know which voting receivers have broken squelch; the preferred method is to transfer this information in the form of a ***Pilot Tone*** that rides on the receiver audio lines when the receiver is squelched. When the voter fails to detect the pilot tone it knows that the radio is unsquelched, and includes the associated receiver in the voting decision.

The pilot tone from the PTG- 10 can also function as a ***line proving*** tone to insure the integrity of the audio link as follows: The lack of the pilot tone on the link signals to the voter that the receiver is unsquelched and the voter then expects voice signals from the voting receiver. If the voter doesn't detect voice coming from the receiver within a programmed period of time, it faults that particular voting site on the assumption that either the voting receiver is not functioning, or the link is broken between receiver and the voter. A voter such as JPS's SNV-12 disallows use of that voting input until voice is received from the distant receiver or until after the pilot tone reappears.

System Overview

Some receivers include the ability to send pilot tones; many don't, but will have a COR (Carrier Operated Relay) output signal to signal the squelched/unsquelched state. This is sometimes also referred to as COS (for Carrier Operated Squelch). These DC output signals can be connected to a voter to indicate squelch, but running a separate COR signal line is not convenient for non-local receivers. That's where the PTG-10 comes in very handy, and facilitates the use of receivers in your voting system that don't have a built-in pilot tone function.

The PTG-10 converts the COR signal into a crystal-controlled pilot tone that is injected on the audio lines whenever the associated receiver is squelched, and removes the tone whenever the receiver is unsquelched.

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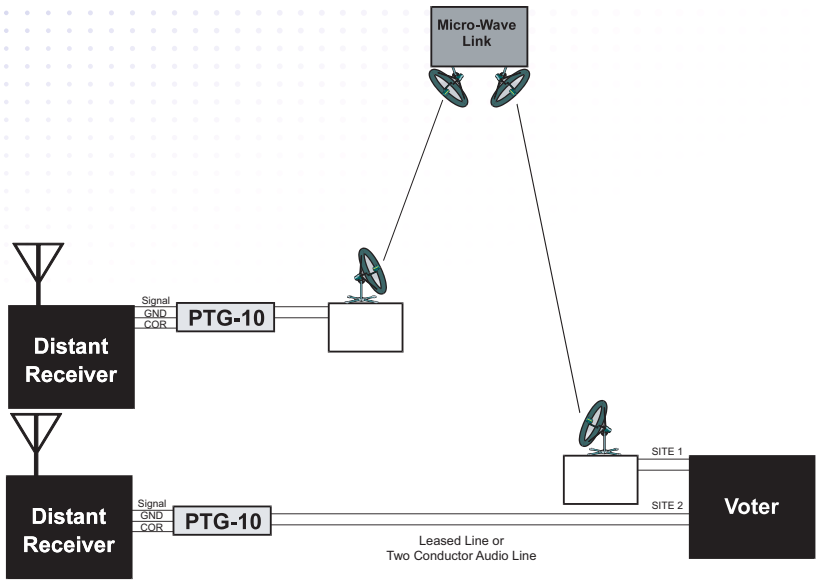

Electrical

DC Input Power: +12 VDC nominal - ranging from +11 to +15 VDC @ 40 mA

Input Impedence: 50k Ohms unbalanced

Output Impedence: 600 Ohms balanced

Frequency Response: Conservatively rated: 50 to 20 kHz +/- 2dB

Tone Frequencies: 1950Hz or 2175Hz, switch selectable

Tone Stability: +/- 2Hz

Receiver Audio Input Range: -30 to + 4 dBm, variable

Pilot Tone Output Level: -20 to + 9 dBm, variable

General

LED Indicators: Power On and Receiver COR

Size: 6.84” x 2.42”x 1.19”

Weight: 0.5lbs

Environmental

Input Impedance: Operating: -20 to +55 degrees C. Storage: -40 to +85 degrees C

Polarity: Up to 95% @ +55 degrees C

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