Repeater

Diversity RF Repeater for Enhanced MDT-DCAP Connectivity

Standard and MAX Range Systems

tehama wireless

Product Overview

Our Diversity RF Repeater receives radio messages from MDTs and Repeaters and then retransmits the message with its +28dBm high power radio toward the data collecting DCAP. It comes in two versions, our Standard and MAX Range. The Standard Range is our original, first generation system, which we continue to fully support and maintain.

Our MAX Range products use Spread Spectrum technology to triple the range over our Standard range products. All Tehama Repeaters implement a redundant and self-healing 2-way mesh radio network between MDTs and the DCAP. MAX range products are not compatible with our Standard range products.

Multiple repeaters are used at a site to form an RF network that provides complete RF coverage over the entire property, or to connect separate buildings that may be up to one mile or more apart. Our MAX range system requires about 1 repeater per 100 to 150 MDTs. The Standard range system requires about 1 repeater per 30-60 MDTS. The repeater consumes under 2 kWh per year.

Specifications

Radio	902 – 928 MHz; FCC Certified; +28.5dBm transmit power, Open field range over 10 miles*
LED-Power	Bi-color, indicates Power state: - Green: AC Power good - Red: No AC power but running on capacitor - Off: Off, no power.
LED-Status	Bi-color, indicates Network connection status and Link Quality - Standard slow/fast flash sequence upon power-up - Green: Link Quality > 65 - Orange: LQ between 31 and 64 - Red: LQ between 0 and 30 - Off or flashing red: no connection to network
Dimensions	5.3" x 5.3" x 1.6"
Operating Environment	-10 to 145 degree F, up to 90% RH, non-condensing.
Power	5VDC, 800mA or greater 120VAC wall transformer. Upon loss of power, an alert message is sent to the DCAP.
Warranty	Four years, does not cover equipment that is not protected by a surge protector or damaged from a power overload.

Continual product enhancements may cause specifications to change without notice.
*Actual range may vary depending on installation location and topography.

Models

Standard System		
Standard Diversity Repeater	TW-191-X	Standard Range system, includes 5V DC power supply. Identified with Serial # E3xxx, +28.5dBm transmit power.
MAX System		
MAX Diversity Repeater	TW-195	MAX Range system, includes 5V DC power supply. Identified with Serial # E4xxx, +28.5dBm transmit power.

The Diversity Repeater ships with 5 VDC, 1 Amp power supply.

** Standard and Max Range systems are NOT compatible: only Max Range MDTs must be used with a MAX Range Repeater (and MAX Range DCAP) and vice versa.

Refer to AN-119 in the documents section of our website for more information.

Installation Instructions

The repeater should be mounted up high on a non-metal wall and with the power cord and transformer secured to prevent accidental removal, usually in a utility or phone closet. It is recommended not to plug the repeater in a GFCI outlet. This may cause the repeater to trip the outlet resulting in the repeater network to go down. If using a GFCI place the repeater as far from the outlet as possible. If code requires a GFCI outlet, we have found the Leviton GFWR1-(W or E) is less prone to tripping as it has some protection against the RF signals the repeater generates.

Once the repeater is plugged in with the 5VDC power cord, two LEDs on the repeater will illuminate. The power light stays illuminated for a minute after it has synchronized to the network. The Status LED provides the normal Tehama start-up flashing sequence, then indicates the rough link quality, showing green, orange, red, or off, simulating a "number of bars" type indication.

When you press the button, a rapid burst of transmissions will be sent to the current link partner. You will see the Status LED flash for every successful transmission. After about five seconds, the Status LED will indicate the link quality to its link partner. Green is good, Orange is OK, Red is poor, and no LED is very poor link quality. If you get a poor or very poor indication, you might move the repeater to a different part of the room and push the button again.

The LED is only on after applying power or by pushing the button. Otherwise, it is off so as not to attract attention if placed in tenant space (which should be avoided if possible). To turn off a unit, simply disconnect it from the power.

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