XT-1

XTENDED RANGE
SINGLE CHANNEL
SUPERVISED STATIONARY
TRANSMITTER

For Use With Linear's XR Series Xtended Range Receivers

Installation Instructions

1. PRODUCT DESCRIPTION

Linear’s Xtended Range (XR) transmitters and receivers are designed for use in various wireless remote control applications. When triggered with an external switch, the Model XT-1 transmitter will send a 10 watt, 27.255 MHz, digital encoded, FSK modulated, signal to its companion receiver. The receiver will verify the digital code, activate its output, and trigger the remote device.

The XT-1 transmitter has full supervision capabilities. If the "status" option is selected, the XT-1 sends hourly status signals to its receiver. If these signals cease, the receiver will indicate trouble by activating its status output after four hours. Contact supervision allows the receiver's output to follow the transmitter’s input, staying activated as long as the transmitter’s input is activated. Alternately, an "auto-restore" option can be selected, causing a momentary receiver output each time the transmitter is activated. Either a N/O or N/C input ( jumper selectable) can trigger the transmitter.

Power for the XT-1 transmitter can come from an external regulated 12 VDC, 2-Amp power supply (Linear Model T-1224DC) or from a 12-volt battery. A 3-amp fuse protects the unit from reverse polarity. The XT-1 draws about 15 μA standby, and about two amps during transmissions. If the power supply voltage drops below 10.5 volts, a low battery message will be included with any signal transmitted, causing the receiver’s low battery output to activate.

Two antennas (sold separately) are available for the XT-1. The Model ANT-1A is an 8-inch “rubber duck” antenna for short range applications (less than 1 mile). The ANT-1A requires a CON-180A (straight) connector to mate the antenna to the transmitter. For a right angle antenna, use the CON-180A plus the CON-90A. The Model ANT-2 is a 3-foot whip antenna for use in long range or difficult installations where more range from the XT-1 is required. A common 9-foot 1/4 wave CB whip antenna can also be used with the XT-1 for maximum range.

Good antennas need good grounds. The transmitter is housed in a rugged weather-resistant metal enclosure with a sturdy SO-239 antenna connector and a water-tight wiring strain relief bushing. During transmissions, the red operation indicator (visible through a window on the case) lights. If the XT-1’s input voltage is low, the indicator will blink during transmissions.

2. OPEN TRANSMITTER

Remove four case screws and slide out circuit board.

3. COMPONENT LOCATIONS

- System Code Switches
- Switch A
- Switch B
- RF Test Button
- Transmit & Low Battery Indicator
- Option Switch
- N/O - N/C Input Select
- Power & Input Terminal Block
- Power Fuse (3-Amp Sag)
- Antenna Connector (Hidden)
- Switch "A"

4. INSTALLATION TIPS

- If using the ANT-1A antenna: For best range mount the XT/XR unit to a metal plate with a minimum size of 12" x 12". The ANT-1A antenna should extend above the mounting plate and be free of obstructions. If the ANT-1A antenna cannot be mounted in the open, consider using an extension coaxial cable with PL-259 connectors to move the antenna's location.

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- The XT/XR series of radios operate in the 27 MHz Citizens Band (CB) and may use any CB antennas or CB antenna accessories. Antennas, PL-259 extension cables and other adapters are available at Radio Shack® or other electronics stores.

5. MOUNT TRANSMITTER CASE

Mount unit with two bottom screws (don’t install top screws until wiring is complete).

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UNIT SHOULD BE MOUNTED IN SHELTERED LOCATION WITH ACCESS TO ANTENNA CO-AX AND POWER/ SIGNAL WIRES

RF TEST
SWITCH A
INPUT SELECT
FIXED BLOCK
POWER & INPUT TERMINAL BLOCK
ANTENNA CONNECTOR (HIDDEN)
SYSTEM CODE SWITCHES
SWITCH B
RF TEST BUTTON
TRANSMIT & LOW BATTERY INDICATOR
OPTION SWITCH
N/O - N/C INPUT SELECT JUMPER
POWER FUSE (3-AMP SAG)
SWITCH "A"
UNIVERSAL MOUNTING BRACKET
18-FOOT CABLE
3-FOOT ANTENNA
ANTENNA AT MAXIMUM RANGE
ANTENNA AS HIGH AS POSSIBLE
GOOD INSTALLATION
BAD INSTALLATION
SWITCH "B"
RECEIVER ANTENNA ONLY
SINGLE-CHANNEL SUPERVISED STATIONARY TRANSMITTER
ANTENNA WAS MOUNTED IN A VERTICAL, OR ALMOST VERTICAL, POSITION
ANTENNA LOCATED IN FRONT OF PRIMARY SOURCE
ANTENNA LOCATION IS OF PRIMARY CONCERN
OTHER THAN BETWEEN THE TRANSMITTER AND RECEIVER ANTENNAS WILL PREVENT THE BEST RANGE
AT LEAST 10 FEET ABOVE GROUND & DECOMMISSIONED
TRANSMISSION THROUGH THE WALLS OF A BUILDING OR CONCRETE MOUNTING ON AN IMPERMEABLE ROOF OR A MOTORHOME WITH A HHAIRDO, USE A MINIMUM OF A 3-FOOT SPACER TO DISTANCE THE ANTENNA FROM THE PRIMARY SOURCE
ANTENNA IS MOUNTED ON A METAL ROOF OR A MOTORHOME WITH A HAIRDO OK
ANTENNA IS MOUNTED ON A METAL ROOF OR A MOTORHOME WITH A HAIRDO OK
ANTENNA IS MOUNTED ON A NON-IMPENETRABLE SURFACE OR A CARPORT OK
GOOD ANTENNAS NEED GOOD GROUNDS
BAD INSTALLATION
GOOD INSTALLATION
GOOD INSTALLATION
BAD INSTALLATION
7. CONNECT POWER AND TRIGGER INPUTS

- Set Input Select Jumper to match Input Type
  - Receiver Channel
  - Receiver Bank
- Set Transmitter Switches
  - Switch 3
  - Switch 4
  - Bank

- Antenna
  - AN-1A: Use for short range (less than 1 mile) applications
  - AN-2: Use for longer range applications or difficult installations

- Route wires through case strain relief bushing before connecting to terminals
- Use 18-24 AWG wire
- Tighten wiring strain relief bushing to secure and weather proof wording

8. MOUNT ANTENA AND ROUTE CABLE

- Mount Antenna as high as possible (a metal mounting pole is recommended)
- An 18-foot RG-58 cable is supplied with the ANT-2 Kit. Up to 50 feet of RG-58 can be used. Use RG-8 for up to 100-foot cable runs.

9. TEST SYSTEM

- Test System Again After Completing Installation

10. COMPLETE INSTALLATION

- Install and setup the companion unit as described in its installation instructions
- Secure end plate by installing the four case screws
- Install the two remaining mounting screws

**Linear Limited Warranty**

This Linear product is warranted against defects in material and workmanship for twelve (12) months. The Warranty Expiration Date is labeled on the product. This warranty extends only to wholesale customers who buy direct from Linear or through Linear’s normal distribution channels. Linear does not warrant this product to consumers. Consumers should inquire from their selling dealer as to the nature of the dealer’s warranty, if any. There are no obligations or liabilities on the part of Linear LLC for consequential damages arising out of or in connection with use or performance of this product or other indirect damages with respect to loss of property, revenue, or profit, or cost of removal, installation, or reinstallation. All implied warranties, including implied warranties for merchantability and implied warranties for fitness, are valid only until Warranty Expiration Date as labeled on the product. This Linear LLC Warranty is in lieu of all other warranties express or implied. All products returned for warranty service require a Return Product Authorization Number (RPA#). Contact Linear Technical Services at 1-800-421-1587 for an RPA# and other important details.

**IMPORTANT!**

Linear radio controls provide a reliable communications link and fill an important need in portable wireless signaling. However, there are some limitations which must be observed.

- **WARNING:** This product is NOT TO BE USED IN LIFE SAFETY APPLICATIONS. FCC Rules allow unlicensed high-power transmissions at or near the operating frequency of this product which may interfere with, or even disable, normal operation of the radio device.
  - For U.S. installations only. The radios are required to comply with FCC Rules and Regulations as Part 95 Radio Control devices. As such, they have limited transmitter power and therefore limited range.
  - A receiver cannot respond to more than one transmitted signal at a time and may be blocked by radio signals that occur on or near their operating frequencies, regardless of code settings.
  - Changes or modifications to the device may void FCC compliance.
  - Infrequently used radio links should be tested regularly to protect against undetected interference or fault.

Always contact the transmitting device’s manufacturer or the ultimate user if the nature of the device cannot be verified.

**Specific Information**

- **CON-180A + CON-90A**
- **ANT-1A + CON-90A**