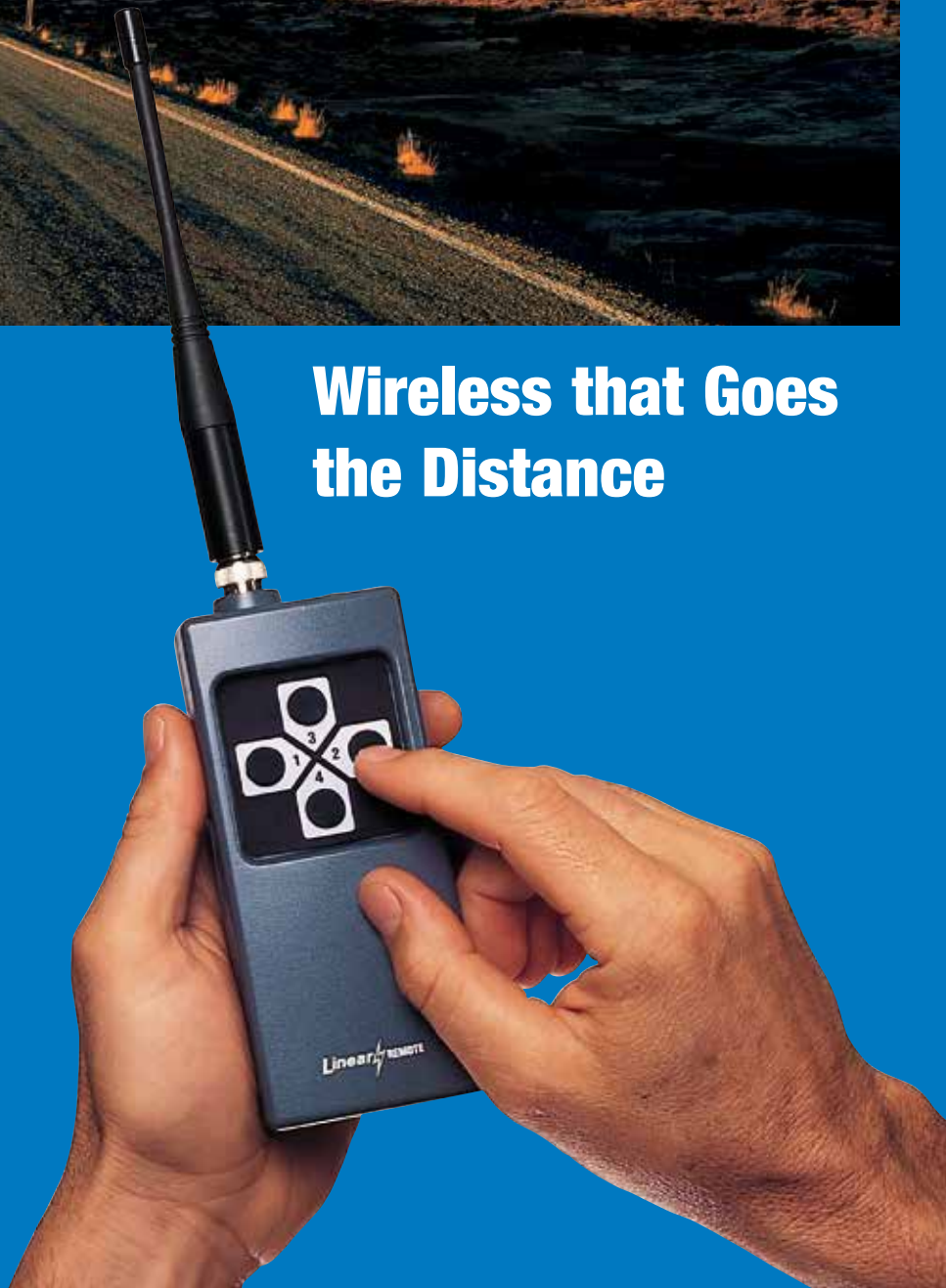


# Xtended Range from Linear



**Wireless that Goes  
the Distance**



**Linear**<sup>®</sup>  
*Building On Innovation.*

# Handheld Transmitters

Linear's Xtended Range wireless receivers and transmitters are more than twice as powerful, 6 times more sensitive, and 3 times more immune to interference than the next best mid-range wireless equipment.



## Handheld Transmitter Specifications

**Frequency:** 27.255 MHz  $\pm$  .0025% (center frequency)

**Bandwidth:** 6 KHz

**RF modulation:** FSK  $\pm$  2 KHz nominal

**RF output impedance:** 50 Ohm nominal

**Data encoding format:** EMR

**Power output:** 2 watts minimum

**Input voltage range:** battery operated

**Input current:** .5 Amp transmitting, less than 1  $\mu$ A standby

**Reverse battery protection:** yes

**Batteries:** 2-9 Vdc batteries

**Antenna:** 8-inch antenna (supplied)

**Loop response time:** 500 ms

**Transmit time:** 1 second

**Code transmissions:** alarm and low battery

**Measured range:** approximately 2 miles

**Programming inputs:**

**System code select:** two, eight-position DIP switches (16 bits, 65,536 codes)

**Rx channel select:** two DIP switch positions

**Bank select:** two DIP switch positions

**Buttons:** tactile type

**Button debounce time:** buttons must remain stable for 150 ms for a transmission to begin

**Indicators:** one red LED lights when transmitter is pressed and flashes when power supply voltage falls below specified voltage

**Temperature range:** -20° to +60°C (-4° to +140°F)

**Housing:** grey, weather-resistant, high impact plastic

**Connectors:**

**RF:** BNC

**Size:** 2.5 x 4.75 x 1.25 in  
(64 x 121 x 32 mm)

**Weight:** 1 lb (0.454 kg)

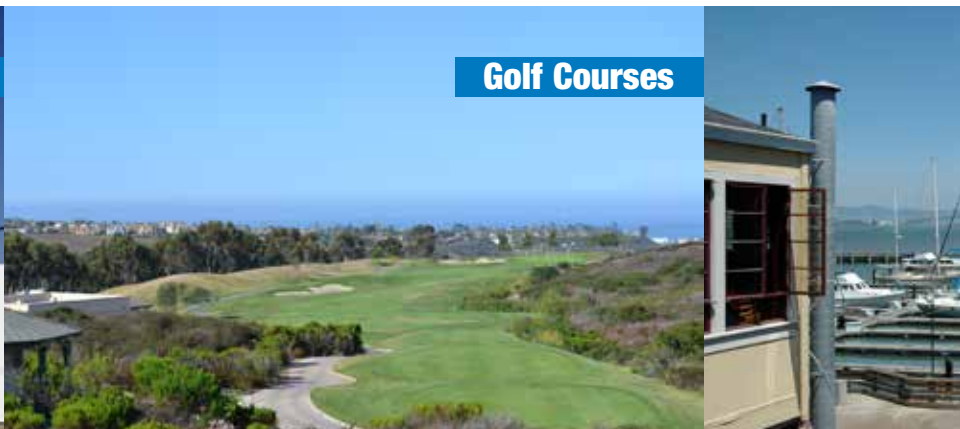
**Regulatory:** FCC Part 95, no license required

## USES:

### Construction Sites



### Golf Courses



# Stationary Transmitters

## Stationary Transmitter Specifications

**Frequency:** 27.255 MHz  $\pm$  .0025% (center frequency)

**Bandwidth:** 6 KHz

**RF modulation:** FSK  $\pm$  2 KHz nominal

**RF output impedance:** 50 Ohm nominal

**Data encoding format:** EMR

**Power output:** 10 watts minimum

**Time out:** built into the code format

**Input voltage range:** 11 to 15 Vdc (13.5 Vdc nominal)

**Input current:** 2 Amps maximum transmitting; 15  $\mu$ A typical standby

**Input current protection:** fused with reverse polarity protection

**Loop response time:** 500 ms

**Transmit time:** 1 second

**Code transmissions:** alarm, restore, status, and low battery

**Status report time frame:** 70 minutes

**Programming inputs:**

**System code select:** two, eight-position DIP switches (16 bits, 65,536 codes)

**Rx channel select (XT-1 only):** two DIP switch positions

**Bank select:** two DIP switch positions

**Status select:** single DIP switch, ON-enabled, OFF-disabled

**Auto-restore select:** single DIP switch, ON-enabled, OFF-disabled

**N/O, N/C select:**

XT-1: two-position jumper to select input type

XT-4: four-position DIP switch to select input type

**Test button:** internal; transmitter sends a status signal when test button is pressed (if pressed and held, transmitter times out after 30  $\pm$ 3 seconds)

**Indicators:** one red LED lights when transmitter is pressed and flashes when power supply voltage falls below specified voltage; LED located underneath rear cover

**Temperature range:** -4° to +140°F (-20° to +60°C)

**Housing:** black, weather-resistant, anodized aluminum enclosure with removable end caps to provide wiring and programming access; end caps secured with screws

**Connectors:**

**RF:** SO-239

**External input:**

XT-1: two-position screw terminals (input and ground)

XT-4: eight-position screw terminals (input and ground per channel)

**Power supply input:** two-position screw terminals (power and ground)

**Size:** 4.25 x 6.25 x 2.5 in (108 x 159 x 64 mm)

**Weight:** 1.0 lbs (0.454 kg)

**Regulatory:** FCC Part 95, no license required

Note: Requires ANT-2 antenna kit for proper operation



**XT-1**  
1 Channel  
Transmitter



**XT-4**  
4 Channel  
Transmitter

**Marinas**

**Municipal Parks**

**Farms and**



# Stationary Receivers

**Frequency:** 27.255 MHz  
± .0025% (center frequency)

**RF modulation:** FSK ± 2 KHz (nominal)

**RF input impedance:** 50 Ohm nominal

**Receiver type:** superheterodyne

**Data input:** alarm, restore, status, and low battery

**Data decoding format:** EMR

**Common outputs**

**Status exception:** one open collector output per receiver, 20 Vdc @ 50 mA maximum

**Status exception time frame:** 4 hours

**Low battery:** one open collector output per receiver, 20 Vdc @ 50 mA max

**Signal strength test point:** buffered signal strength output (0 to 5 V)

**Common connectors**

**RF:** SO-239

**Status and low battery:** XR-1 and XR-4, two-position screw terminals (status and low battery); XR-16, three-position screw terminals (status, low battery, and ground)

**Power supply input:** two-position screw terminals (power and ground)

**Sensitivity:** -115 dBm (or better)

**Selectivity:** 8 KHz

**Number of codes:** 65,536

**Code setting method:** two, eight-position DIP switch programming

**Image rejection:** 50 dB minimum

**Adjacent channel rejection:** greater than 50 dB ± 9 KHz from Fc

**Input voltage range:** 11 to 15 Vdc (13.5 Vdc nominal)

**Input current:** reference specific receiver(s)

**Input current protection:** reverse polarity protection

**Temperature range:** -20° to +60°C (-4° to +140° F)

**Housing:** black, weather-resistant, anodized aluminum enclosure with removable end caps to provide wiring and programming access, end caps secured with screws; window on XR-1 and XR-4

**Test Jumpers:**

**Audio output:** test jumpers on the printed circuit board

**Signal strength output:** test jumpers on the printed circuit board (0 to 5 V)

**Regulatory:** FCC Part 95, no license required

Note: Requires ANT-1A or ANT-2 antenna kit



**XR-1**  
1 Channel Receiver



**XR-4**  
4 Channel Receiver



**XR-16**  
16 Channel Receiver

**Size:** 4.25 x 6.25 x 2.5 in (108 x 159 x 64 mm)

**Weight:** 1 lb (0.454 kg)

**Current drain:**

XR-1: 25 mA, typical standby; 65 mA alarm @ 12 Vdc

XR-4: 25 mA, typical standby; 185 mA alarm @ 12 Vdc

**Programming inputs:**

**System code select:** two, eight-position DIP switches (16 bits, 65,536 codes)

**Status select:**

XR-1: one DIP switch position, ON-enabled, OFF-disabled

XR-4: four DIP switch positions (by channel),

ON-enabled, OFF-disabled

**Channel select**

XR-1 only: two DIP switch positions, select channel 1, 2, 3, or 4

**Additional outputs:**

**Alarm:** Form "C" relay per channel, 1 A @ 32 Vdc (N/O, N/C, and common)

**Additional connectors:**

**Alarm output:**

XR-1: three-position screw terminals (N/O, N/C, and COM)

XR-4: four sets of three-position screw terminals (N/O, N/C, and common)

**Indicators:** one red LED lights when there is RF activity and one green Power On LED; LEDs visible when rear cover is on the unit

**Size:** 6.5 x 7.9 x 1.25 in (165 x 201 x 32 mm)

**Weight:** 1.5 lbs (0.680 kg)

**Current drain:** 300 mA maximum @ 12 Vdc

**Programming inputs:**

**System code select:** two, eight-position DIP switches (16 bits, 65,536 codes)

**Status select:** two, eight-position DIP switches, one position per channel, ON-enabled, OFF-disabled

**Trouble disable:** jumper—remove to disable, trouble output on channel and trouble output relay

**Additional outputs:**

**16 open collector:** (20 Vdc @ 50 mA, maximum), field programmable for either N/O or N/C operation

**Channel and trouble output:** form "C" relay, 1 A @ 32 Vdc (N/O, N/C, and common); this output is activated when any output is activated (channel, status, or low battery)

**Additional connectors:**

**Channel and trouble output:** three-position screw terminals (N/O, N/C, and common)

**Channel outputs:** twenty-position screw terminals, 16 channel outputs, and four grounds

**Indicators:** three, seven-segment displays; provides alarm, status, and low battery indication by channel; RF activity displayed by the decimal point

**Agriculture**



**Substations**



**Storage Facilities**





## When there's nothing but 10 miles of bad road (or no road) between you and a remote site, Xtended Range gets you there.

With the new Xtended Range family of products, we now offer one of the industry's longest range wireless transmitter-receiver activation systems, giving you up to 10 miles line-of-sight. In the right terrain and system conditions you may even be able to transmit 15 miles or more\*. Linear's Xtended Range is the long-distance leader, beating nearly every comparable wireless transmission device on the market.

**Linear Means Power:** Increased output capability from 4 watts to 10 watts minimum per channel, enabling more than double the operating range than the competition.

**Super Sensitivity:** Crystal controlled, FM-based receivers operate in the CB band of frequencies at 27.255 MHz and offer sensitivity of -115 dBm or better.

**Interference Immunity:** Highly selective Xtended Range uses FSK rather than AM modulation, so it won't pick up stray signals. The absence of typical FM interference makes it a super-reliable long-distance link.

**Compact & Reliable:** Advanced circuit technology packs maximum capability into minimum space, significantly boosting reliability.

**Fully Supervised:** All Xtended Range products can perform automated checks to ensure that they are communicating properly – so you never have to worry about its status. The Xtended Range family offers hourly status reporting, low battery detection and reporting, and portal

supervision for peace of mind. You also get field-selectable "Auto Restore" that triggers momentary receiver output when the transmitter input is activated.

**Feature Rich:** The Xtended Range product family offers Form C NO/NC relays on receivers, and the transmitters have internal RF test button and transmission indicator giving you visual verification of activity. Receivers have both power and RF activity indication and RF signal audio output, making the system easy to setup and configure.

**Secure & Solid:** Code clashes are unlikely as the Xtended Range has 64,000 available codes. Plus, receivers and transmitters are housed in time-tested weather-resistant cases with adjustable strain relief bushings to secure and shield wiring.

**No FCC Licensing:** Xtended Range receivers and transmitters do not require FCC licensing or registration, further easing customer installations.

**Easy installation:** Designed for quick setup and easy upgrades, DIP switches make system coding and mode changes fast, allowing for rapid addition or replacement of transmitters without having to visit the receiver and transmitter site.

\*We field-tested the Xtended Range at distances of 20 miles, and the signal showed no sign of quitting.

*Linear developed the Xtended Range suite of products with flexibility and variety in mind, so users can tailor long-distance links to their needs – remote monitoring, switching systems, networking, security, or remote control. Different models and channel combinations can be mixed and matched to accomplish your most sophisticated projects.*

## Accessories

### ANT-1A 8-Inch Antenna

(for applications under one mile; for use with XR Receivers only)



### ANT-2 3-Foot Whip Antenna

(for maximum range and difficult applications; required for XT-1, XT-4 Transmitters)



### CON-90 Right Angle Antenna Connector for ANT-1A



### T-1224DC Wall Mount Power Supply

(recommended for XT transmitters)



### T-124.8DC Wall Mount Power Supply

(recommended for XR receivers)



## Ordering Information

**XT-1 Single-Channel Stationary Transmitter - Order number: SST00083**

**XT-4 Four-Channel Stationary Transmitter - Order number: SST00084**

**XT-1H Single-Channel Handheld Transmitter - Order number: SNT00395**

**XT-2H Two-Channel Handheld Transmitter - Order number: SNT00396**

**XT-4H Four-Channel Handheld Transmitter - Order number: SNT00397**

**XR-1 Single-Channel Stationary Receiver - Order number: SSR00068**

(Form "C" alarm output)

**XR-4 Four-Channel Stationary Receiver - Order number: SSR00069**

(Form "C" alarm output per channel)

**XR-16 16-Channel Stationary Receiver - Order number: SSR00066**

(open collector alarm outputs)

**WARNING:** These products should not be used in life safety applications. FCC Rules allow unlicensed high-power transmissions at or near the operating frequency of these products, which may interfere with, or even disable, normal operation of the radios.

Specifications subject to change without notice.

