

Linear[®]

**Xtended
Range
by
Linear.**

**Wireless
that
goes
the
distance.**



Remote possibilities become realities with Xtended Range's extended family.

Linear developed Xtended Range with flexibility and variety in mind, so users can tailor long-distance links to their needs—remote monitoring, switching systems, networking, security, remote control. Different models and channel combinations can be mixed and matched to configure some very sophisticated systems.

XT-1 Single-Channel Stationary Transmitter

XT-4 Four-Channel Stationary Transmitter

XT-1H Single-Channel Handheld Transmitter

XT-2H Two-Channel Handheld Transmitter

XT-4H Four-Channel Handheld Transmitter

XR-1 Single-Channel Stationary Receiver
(Form "C" alarm output)

XR-4 Four-Channel Stationary Receiver
(Form "C" alarm output per channel)

XR-16 16-Channel Stationary Receiver
(open collector alarm outputs)

XR-D RS232 Data Output Receiver

Accessories

ANT-1 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-1

CON-180 Straight-Through Antenna Connector for ANT-1.

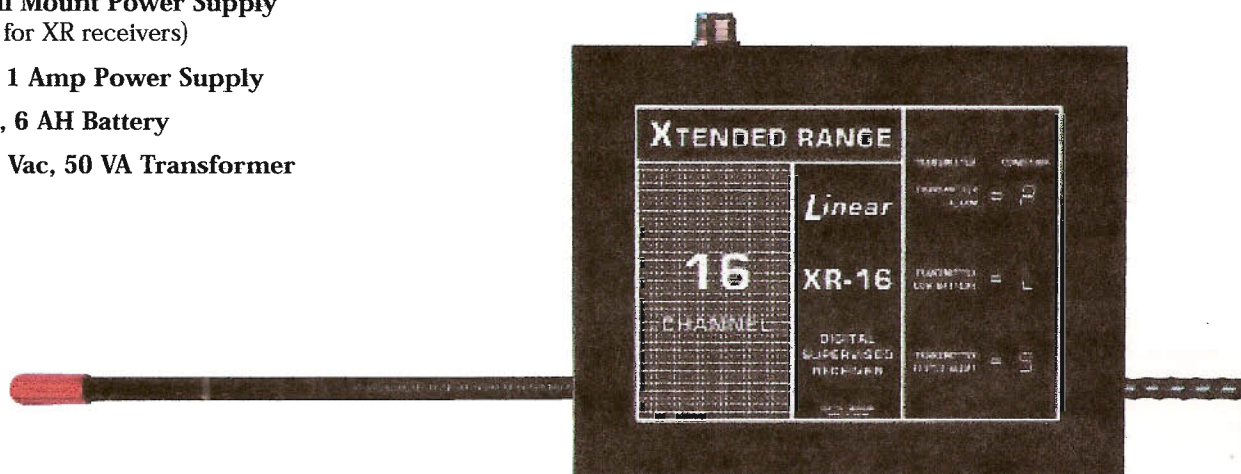
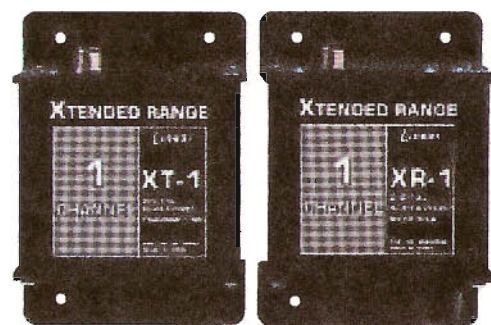
T-1224DC Wall Mount Power Supply
(recommended for XT transmitters)

T-124.8DC Wall Mount Power Supply
(recommended for XR receivers)

M-102 12 Vdc, 1 Amp Power Supply

B-1260 12 Vdc, 6 AH Battery

T-1650 120/16 Vac, 50 VA Transformer



Stationary Transmitters

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 μ A
typical standby

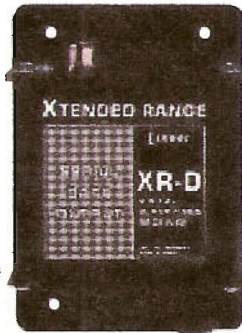
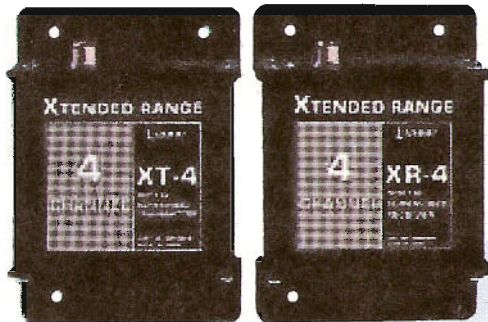
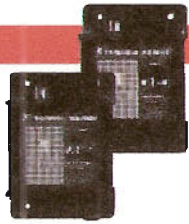
Input current protection: fused with reverse polarity
protection

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: -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

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

Handheld Transmitters

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 μ A standby

Reverse battery protection: yes

Batteries: 2-9 Vdc batteries

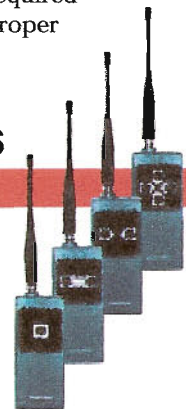
Antenna: 8-inch antenna (supplied)

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

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 maximum

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, XR-4, and XR-D

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)

Self-test switch (XR-D only): RS232 ASCII

Regulatory: FCC Part 95, no license required

Note: Requires ANT-1 with CON-90 or CON-180, or ANT-2 antenna kit

XR-1 and XR-4

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

XR-16

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

Weight: 1.5 lbs (0.680 kg)

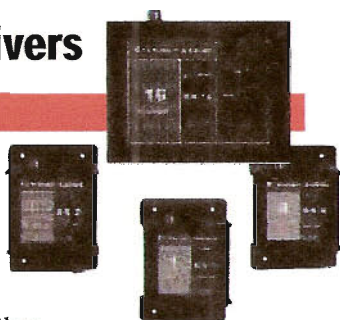
Current drain: 300 mA maximum @ 12 Vdc

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



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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. We say that without fear of contradiction because we used to make the next best mid-range equipment. Xtended Range is our latest generation.

Where we once offered the industry's top range at 5 miles, we now go to 10 miles. Maybe 15. (We stopped testing at 20, and the signal showed no sign of quitting.)

Xtended Range is the long-distance

leader over our previous mid-range line, and by definition, over everything else on the market.

2.5 times more powerful: Increased output capability from 4 watts to 10 watts minimum per channel, enabling more than double the operating range.

6 times more sensitive: Crystal controlled, FM-based receivers operate in CB band at 27.255 MHz and offer sensitivity of -115 dBm or better. Previous models had a carrier frequency of 27.145 MHz and sensitivity of 1 microvolt.

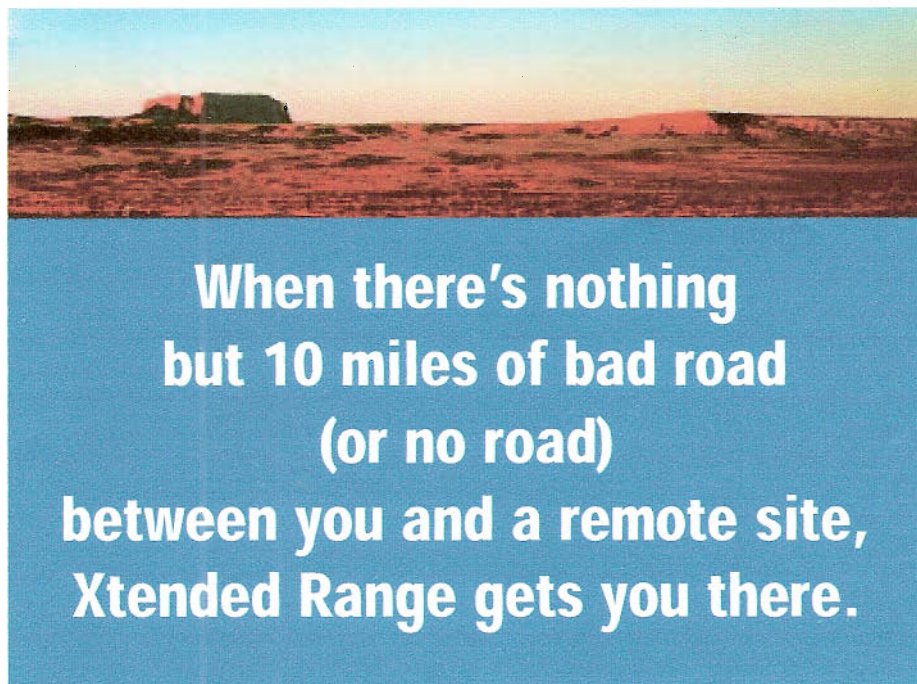
3 times more immune: Highly selective Xtended Range uses FSK rather than AM modulation, so it won't pick up trash. Absence of typical FM interference makes it an ultra-reliable long-distance link.

Size reduced: Surface mount technology packs maximum capability into minimum space, significantly boosting reliability.

Fully supervised: Xtended Range checks itself out, completely and automatically. Hourly status reporting. Low battery detection and reporting. Portal supervision. Field selectable "Auto Restore" causes momentary receiver

output when transmitter input is activated.

More capability and control: Form C NO/NC relay on receivers. Signal strength output measurable on the board. Transmitters



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

have internal RF test button and transmission indicator. Receivers have both power and RF activity indication and RF signal audio output.

More security: Code clashes are unlikely — Xtended Range has 64,000 available codes. Receivers and transmitters housed in improved weather-resistant cases with adjustable strain relief bushing to secure and shield wiring.

No licensing: Xtended Range receivers and transmitters do not require FCC license or registration.

Easy installation: Designed for quick setup. DIP switches simplify system coding and mode changes and allow addition or replacement of transmitters without having to visit both sites.

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

XR-D

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

Weight: 1 lb (0.454 kg)

Current drain: 40 mA, typical

Additional outputs:

RS232: ASCII, serial data output; data to be used by PC or printer

RS232 interface and programming:

Baud rate: 9600

Protocol: 8 bits, 1 stop bit, no parity, carriage return, line feed

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.

Important information for users outside of the United States of America.

The frequency and power output specifications supplied in this brochure denote FCC Part 95 product.

For areas of the world where it may not be legal to use the Xtended range transmitters and receivers at 27.255 MHz, or use transmitters with up to a 10 watt power output level, Linear has developed a product line at 26.995 MHz. Transmitter power output level has been reduced to a maximum of 5 watts. Maximum range is reduced to approximately five miles.

Stationary Transmitters

Frequency: 26.995 MHz \pm .0025%
(center frequency)

Bandwidth: 6 KHz

Power Output: 4 watts maximum

All other specifications and accessories are the same as those for the XT-1 and XT-4 transmitters.

Order the following Model Numbers:

XT-1/K, one-channel transmitter
XT-4/K, four-channel transmitter

Handheld Transmitters

Frequency: 26.995 MHz \pm .0025%
(center frequency)

Bandwidth: 6 KHz

Power Output: 2 watts maximum

All other specifications are the same as those for the XR-1H/K, XR-2H/K, and XR-4H/K handheld transmitters.

Order the following Model Numbers:

XT-1H/K, one-channel handheld transmitter
XT-2H/K, two-channel handheld transmitter
XT-4H/K, four-channel handheld transmitter

Stationary Receivers

Frequency: 26.995 MHz \pm .0025%
(center frequency)

All other specifications and accessories are the same as those for the XR-1, XR-4, XR-16, and XR-D receivers.

Order the following Model Numbers:

XR-1/K, one-channel receiver
XR-4/K, four-channel receiver
XR-16/K, sixteen-channel receiver
XR-D/K, data only receiver