



**ALERT**

## ERT-A2 ALERT2/ALERT STATION, REPEATER, BASE RECEIVER

Reliable Flood warning and Disaster management communications

### DESCRIPTION

ELPRO's Industrial Wireless Solutions has 30 years of expertise in solving critical industrial communications in flood warning applications. The ERT-A2 is a new generation ground up redesigned product that extends on the successful ERTS™ product line.

Designed to meet local conditions the ERT-A2 provides a single product to support remote stations, repeater and base receiver applications. Supporting a large variety of environmental sensors, critically rain fall, river height gauging data collection to support environmental, flood warning and SCADA applications.

The ELPRO ERT-A2 remote station-repeater in a single unit provides the flexibility in mounting, sensors and power sources required to support installations in sometime very remote or city-based situations in traditional tree, platform, or cabinet.

### APPLICATIONS

- Rain Fall and Flood Warning Management
- Automatic Weather Station
- Detection and Indication of Flooded Roads
- Water Quality and Environmental logging
- Tailings leakage and movement detection
- Pipeline monitoring for Environmental protection
- Wellhead monitoring
- Remote I/O connectivity with no fixed power available

#### Order Codes

EL-ERT-A2-MGR-1X	Mil Spec, Internal Batt	148-174Mhz
EL-ERT-A2-MGE-1X	Mil Spec, External Batt	148-174Mhz
EL-ERT-A2-CGR-1X	Cable Gland, Internal Batt	148-174Mhz
EL-ERT-A2-CGE-1X	Cable Gland, External Batt	148-174Mhz
EL-ERT-A2-MXR-XA	Mil Spec, Internal Batt	Cellular
EL-ERT-A2-MXE-XA	Mil Spec, External Batt	Cellular
EL-ERT-A2-CXR-XA	Cable Gland, Internal Batt	Cellular
EL-ERT-A2-CXE-XA	Cable Gland, External Batt	Cellular
EL-ERT-A2-MXR-1A	Mil Spec, Internal Batt	148-174Mhz & Cell
EL-ERT-A2-MXE-1A	Mil Spec, External Batt	148-174Mhz & Cell
EL-ERT-A2-CXR-XS	Cable Gland, Internal Batt	Satellite

**If selection is unavailable, please contact ELPRO Sales for other communication configuration options.**

### FEATURES

- ALERT™ protocol supporting Field station transmitter, repeater and receiver functions in the one unit saving on spares
- Licenced/licence-free VHF/UHF radio transceiver, and/or 4G/LTE Cellular or Satellite modem options.
- Simple migration of existing ALERT1 equipment with compatible connections and optional ERTS™ upgrade kit
- Flexible weatherproof enclosure design allows for simple installation in tree (standpipe), cabinet or outdoor situations
- Enhanced security for both cyber and data transmission
- Two Analog inputs (4-20mA) with separate internally generated configurable 24V loop supply
- 4 Discrete inputs capable of pulsed, encoder or simple on/off use
- SDI-12 Interface for Smart Sensors such as ice, wind, level, ground moisture and weather station applications
- Logging support, internal Flash memory for recorded data retrieval
- Innovative power management system including integrated smart solar regulator, internal or external battery, external power options
- Extremely low power field station <200uA
- Wireless Bluetooth BLE configuration/diagnostic interface.

#### General

Size (H x W x D)	190mm x 197mm x 98mm (7.5" x 7.8" x 3.8")
Housing	Aluminum cast enclosure with removable door, IP66 rated
Mounting	Panel Mount standard
Temperature rating	-40 to +70°C (-40 to +158°F)
Humidity rating	0-90% RH noncondensing
Weight	1.7 kg (4 lb) not including battery.
Altitude	0-3000m (0-10000ft)

#### Compliance

Regulatory (radio)	Australia: RCM, Europe:CE/RED, USA: FCC, Canada: IC FCC CFR47 Part 90; IC RSS 119; EN 300 113; EN 300 220; AS/NZS4295; AS/NZS4268
Regulatory (Cell)	CE: EN 301 441, EN301 489-20, EN60950 FCC: CFR47 Part 2, 15, 25 IC: RSS170
Regulatory (Sat)	RCM, FCC, IC, Anatel, JATE/TELECOM, NCC, GCF
EMC	FCC CFR47 Part 15; EN 301 489
Safety	EN/IEC 62368
Hazardous area	Class I, Division 2 IEC EX Zone 2; ATEX Zone 2 – Pending

# SPECIFICATIONS



# ELPRO EL-ERT-A2 ALERT2/ALERT FIELD STATION, REPEATER, BASE RECEIVER

## Operation

Modes— unit types Field Station, Repeater and Base Station Receiver

## Communication - UHF/VHF Internal Radio

Frequency <sup>a</sup>	C1: 148 – 174MHz C3: 340 – 400MHz C4: 400 – 480MHz C5: 470 – 520MHz
Transmit power – peak <sup>a</sup>	C1: 10mW - 5W (+37dBm) C3,C4,C5: 10mW - 10W (+40dBm) All Configurable
Receiver sensitivity	ALERT2™: 2-FSK -117dBm
Channel spacing	6.25, 12.5, 25.0 kHz (software configurable)
Typical range	62 miles (100 km)
Antenna connector	N Type female

## Communication - 4G/LTE Cellular Modem

Model	AU Austalia New Zealand South America Asia	AU North America	AU EMEA / Thailand
LTE Bands	B1/B2/B3/ B4/B5/ B7/ B8/B28/ B40	B2/B4/B5/B12/ B13/ B14/B66/ B71	B1/B3/B7/B8/ B20/ B28A
WCDMA Bands	B1/B2/B5/ B8	B2/B4/B5	B1/B8
GSM/EDGE Bands	B2/B3/B5/ B8		B3/B8
Carriers	Telstra, Optus, Vodafone Rogers/Telus	Verizon/AT&T/ T-Mobile/U.S. Cellular/ Deutsche Telecom	Vodafone, O2, Three, Orange, Deutsche Telecom
Connections	2 x Ethernet 10/100 - Gateway Version only		

## Communications - External Satellite Iridium Modem

Frequency Band	1616-1626.5Mhz
RF Power (Avg)	1.6W
RX Sensitivity	-117dBm

## Protocols and configuration

User Configuration	Local Access: USB or RS232 (Legacy)
Configurable Parameters	ALERT2™ Binary/ASCII, field/repeater/receiver station, communications setup, unit ID, reporting times, input configuration, analog loop power warmup, date/time, SDI sensor power, logging
RS485	ALERT2 output (Base Receiver output to decoder) ALERT2 Repeater redundancy to Cell/Sat (Future)

## LED Indications & Diagnostics

LED Indication	Power/OK, Radio TX/RX, Config Enabled, Maintenance Mode, digital I/O status
Push Buttons	Front Panel: Maintenance mode/ Send data Internal Test: Maintenance mode/send data/save logged data to USB/Firmware update Internal Boot: Boot or Reset unit

## Reported diagnostics

Radio diagnostics	Monitoring communications, Radio Signal Strength, antenna Fail, back-ground noise.
Logging	Internal data logging for I/O and other events. Logging memory 32 MB recovered by USB or terminal menu
Inputs	All Physical Inputs

## Connections

Serial	1 x RS-232,Alert2 or configuration 1 x RS485 Alert2 <sup>b</sup>
USB Type A	Firmware Updates & Retrieval of logged data to USB memory stick
USB Type B	Local Unit configuration (Terminal Menu)
I/O/Sensors/Power/RS232/Solar (Options)	<b>Milpsec:</b> Multi-pin connector with standard Alert1 pinouts. <b>Cable gland:</b> M20 cable gland 5-13mm cable dia. <b>NPT Pipe:</b> 1/2" NPT Conduit connection.
Terminals	Internal wiring terminals (push connect) 0.20 - 1.5mm <sup>2</sup> (24-16 AWG)
GPS	SMA Female
Primary Antenna	N-Type Female

## Input and output

Discrete input/output	4 Digital I/O ( Discrete/Pulsed, Rain or River encoder)
Analog inputs	2 Differential analog inputs configurable mA 0-20mA current loop, 16 Bit resolution
Sensor loop power	Analog: 24Vdc, max 50mA SDI-12: 12Vdc max 500mA
SDI-12	Max 15 Sensors, one SDI-12 bus, up to 200 variables
Heater Output	Open Collector Output 2A
GPS (Optional)	Time Synchronization for Logging, location data, ALERT2 TDMA sync

## Power supply

Nominal supply	11-30 Vdc, undervoltage/overvoltage protection		
Idle current draw	Field Station - 200µA mA Repeater Station - 50mA		
Battery Options	<b>Lithium Iron Phosphate (LFP):</b> Internally connected <b>Sealed Lead Acid (Pb):</b> 12V Battery Externally connected		
Battery Charger/Solar Reg	External power supply/MPTT Solar panel charges internal (LFP) or Ext Lead Acid battery. Up to 2Amp charge from 5-30W Solar panel. Auto Temp compensation/protection.		
Battery Life VHF (Rain only)	LFP -No charging = 8Mths		
Battery Life VHF (Rain/River 10min sample)	LFP -No charging = 5Mths		
Transmit current draw	<b>UHF/VHF Radio</b>	<b>4G/LTE Cellular Iridium Sat Modem</b>	
Quiescent current	Field Station - 200µA Repeater - 50mA	154mA avg @13.8Vdc	18mA avg, 80mA Peak @13.8Vdc
Transmit current	2.5A @ 13.8Vdc (10W RF)	192mA Peak	580mA Peak @13.8Vdc

- Available RF power and frequency may vary depending on country and model selected. Please confirm with local regulatory body.
- SDI-12 disabled when used. RS485 can be used for external communications, ALERT1 data input, ALERT2 output for redundant communications.
- See Communication Specifications Compliance detail.
- ALERT2 is a trademark of the National Hydrologic Warning Council.
- Connectivity only available for 4G/LTE Integrated Gateway Router options.
- Specifications subject to change

# CONTACT

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# HOW TO ORDER

Simply send us an email at

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