

# Trailblazer™ Phone Extender

A multifunctional point-to-point digital radio providing POTS, leased lines and Ethernet data up to 512 kbps.



## The Trailblazer™ Phone Extender

Delivers a digital microwave radio for low teledensity rural POTS and data service. Configurable for up to eight, 64 kbps PCM voice channels with ranges up to 32 mi/50 km or more with repeaters. Features full fax and V.90 dial-up modem or Ethernet capability. 4-wire leased line configuration also available.

### TYPICAL APPLICATIONS:

- Rural WLL Telecommunications
- Inaccessible or Environmentally Sensitive Lands
- Retrofit for Exhausted Wireline Systems
- Internet Café or Calling Centers
- Temporary & Emergency Restoration
- Video or Security Monitoring

**All Trailblazer™ models offer an unmatched set of features:**

### Flexible and Programmable

All Trailblazer™ models are bench or field programmable. Configure the bandwidth, allocate voice and data, use installation and antenna alignment aids, and diagnostic tools. All models support all Class features, fax, and V.90 dial-up modems, with DSL equivalent connectivity.

### Advantages Over Wireline

All Trailblazer™ models deliver voice, data or both using state-of-the-art digital electronics and wireless links up to 32 mi / 50 km to provide network quality without the expense of right of way costs or wireline hard costs.

### Plug and Play Simplicity & Reliability

All components, including digital radio cards, multiplexer, power supplies & CPU are fully integrated into the 3kg / 8lb waterproof enclosure that installs easily.

### Easy Installation

Terminals mount on a 1"- 2.25" pipe or pole and use an external antenna. Both ends have their own power supply and operate on 12 VDC, easily powered by solar. Programming with a GUI and your laptop completes the job.

### Rugged & Weatherproof

Terminals are housed in a NEMA 4X waterproof enclosure, built to last in tough climates. Mounts on most poles or pipes.

### No License Required, yet Private and Secure

Uses the license-exempt (in most countries) 2.4 GHz or 5.8 GHz frequency bands, while providing fully encrypted, spread-spectrum CDMA modulations for your privacy.

### Low Power Draw, Solar Powerable

Point-to-Point systems draw low power and accept any DC Voltage from 12V to 24V. Solar powering kits available with up to 7 days of backup power.



Up to 8 POTS or LL  
8 Lbs. / 3.62 kg  
13 x 11 x 6 inches  
33 x 28 x 15 cm

# Trailblazer™ Series – Designed and Built for Plug-and-Play

## Specifications for Trailblazer™ Phone Extender

### System Specifications

Product Description	Digital Microwave Radio with POTS, Leased Line 10 BaseT/V.35 Port
Air Interface	Proprietary Time Division Duplexing with Direct Sequence Spread Spectrum CDMA
Overall Data Throughput Rate	64 - 512 kbps, selectable (Configuration GUI)
End-to-End System Latency	Between 8.8 and 4.4 ms
Operating Power	CPE TERMINAL: 3W (idle) to 9W (max) BASE TERMINAL: 2.5W (Typical)
Supply Voltage - Filtered DC	12V - 24V (32V max), Earth Ground Required, AC Adapter Available (100 - 260 VAC, 50 - 60 Hz)

### RF Performance

Frequency Range	2.400 to 2.4835 GHz
RF Channels	4 Non-overlapping channels + 1 Administrative
Spreading Codes	4 Auto-selectable Orthogonal Codes
Modulation Type	BPSK (256 kbs) or QPSK (512 kbs) DSSS
Transmitter Output Power	-20 to +20dBm, auto set for CDMA operation
Max System ERP	45 dBm (20 dBm + 25 dBi Antenna)
Receiver Sensitivity (10-6 BER)	-93 dBm/256 kbps; -90 dBm/512 kbps
Antenna	Various External Antennas
EMC Compatibility	FCC Part 15.247

### FXO Specifications

DS-O Lines	2, 4, 6, or 8
Line and Balance Impedance	Both resistive and reactive parameters can be factory set per country requirements
Maximum Loop Length	1500 ohms at 20 mA
Ring type and Ring Equivalent Number	Balanced sinusoidal, 0.3B per line
Ring Detect Threshold	24-110 Vrms, 17-34 Hz
2-Wire Port Return Loss	24 dB (min)
Regulatory	TIA/EIA/IS-968 (FCC), UL 1950, UL 60950 EN 60950, IEC60950, EN55022B, CISPR22B, EN55024, and TRB-21

### FXO Specifications

DS-O Lines	2, 4, 6, or 8
Line and Balance Impedance	Both resistive and reactive can be factory set per country requirements
Open Loop Voltage	36 - 48 Volts
Loop Current	20 mA (min) to 24 mA (max)
Maximum Loop Length	1200 ohms including instrument
Ringing Voltage, Waveform, and Load	60 VAC RMS, Balanced sinusoidal, 3 REN
TTX Generation	12 or 16 kHz, typically set to 200 mV rms
2-Wire Port Return Loss	24 dB min
Regulatory	LSSGR, TR57, ITU Q.552, and G.712

### User Data Interface

Data Port Interface	10BaseT Ethernet or V.35
Synchronous Data Rate (kbps)	512/256/128/64, selectable from config. GUI
	Transmit data and receive data clocks generated internally
	Will sync to an external clock on the master side for a "tail circuit" operation
Digital Latency, end to end	< 4.5 ms
Data Interface Connector	25 pin "D" type female

### Maintenance Data Interface

Command Console Port	RS-232 (9600bps, N, 8, 1)
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### Environmental Specifications

Operating Temperature and Humidity	-30° to 60°C, 0 to 90% Non-condensing
Exposure to the Elements (outside enclosure)	NEMA 4X, Rain, Wind, and Ice Protected
Shock and Vibration	Mil Standard 810 D
Mounting	25.4 - 57.15 mm (1 to 2.25") pipe/pole mount
Enclosure Material	GE Valox99® Polycarbonate w/ Neoprene Gasket
Unit Weight	8 lbs/ 3.7kg
Unit Dimensions	13 x 11 x 6 inches/ 33 x 28 x 15 centimeters

Certifications	US, Canada, Brazil, Mexico, Philippines, Morocco
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Warranty	1 Year Parts and Labor
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SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

AIRLINX Communications, Inc.  
Box 253  
Greenville, NH 03048  
E-mail: sales@airlinx.com  
Tel: (888) 224-6814  
Fax: (603) 878-0530