



Trailblazer™ Hybrid

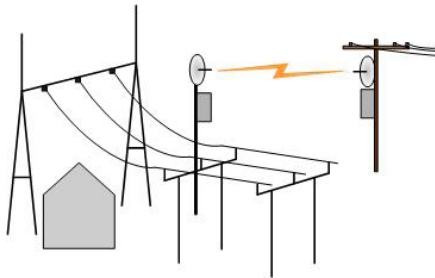


A POINT-TO-POINT DIGITAL RADIO PROVIDING POTS, LEASED LINES AND ETHERNET DATA

Trailblazer™ radios use TrueTDM™ fixed latency technology to provide perfect wire line quality telephone service to residences and businesses beyond existing phone lines. 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. Additionally, 4-wire E&M leased line configuration and multipoint systems are available.

APPLICATIONS:

- Locations Inaccessible by Wirelines
- SCADA Telemetry
- Oil, Gas and Mining Infrastructure
- Transportation Communications
- Video or Security Monitoring
- Substation Isolation



Substation application

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 Carrier Class features, fax, and Ethernet connectivity.

Fixed Latency Radio for Perfect Wireline Quality

Carlson Wireless' exclusive TrueTDM technology offers low (less than 5 milliseconds) fixed latency signaling that is compatible with all voter receiver/comparators. TrueTDM™ also eliminates the need to equip your voter comparators/receivers with a jitter buffer and/or GPS oscillators, saving you money and time.

Advantages Over Wireline

All Trailblazer™ models deliver voice, data or both up to 32 mi / 50 km. Using Carlson's exclusive TrueTDM™ technology and state-of-the-art digital electronics and wireless links, Trailblazer™ radios provide network quality and reliability 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 and CPU are fully integrated into the outdoor 3 kg / 8 lb waterproof enclosure or a standard aluminum rackmount.

Easy Installation

ODUs are easily installed with a simple wall or pole mount and built-in power supply. 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.

No License Required, yet Private and Secure

Uses the license-exempt (in most countries) 900 MHz*, 2.4 GHz, 5.4 GHz, or 5.8 GHz frequency bands. Licensed 4.9 GHz and 5.9 GHz models are also available. Trailblazer™ uses TDMA framing for additional over the air security.

Low Power Draw, Solar Powerable

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





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SYSTEM SPECIFICATIONS

Product Description	Digital microwave radio with POTS, 4-Wire E&M, 2-Wire Bidirectional and 10 Base T/V.35 port
Air Interface	Proprietary Time Division Duplexing with Direct Sequence Spread Spectrum CDMA
Overall Data Throughput Rate	64 - 512 kbps, Selectable (Configurable GUI)
End to End System Latency	Fixed latency, Less than 5 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 adaptor available (100 - 260 VAC, 50 - 60 Hz)

RF PERFORMANCE

Frequency Range	2.412 to 2.472 GHz, 4.940 to 4.980 GHz, 5.250 to 5.925 GHz. 902 to 928 MHz also available with additional equipment
RF Channels	20 MHz
Spreading Codes	4 auto-selectable orthogonal codes
Modulation	BPSK (256 bbs) or QPSK (512 kbps) DSSS
Tx Power	+20 dBm
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	1, 2, 3 or 4
4-Wire E&M Circuit	1, 2, 3 or 4
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 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, EN60950, IEC60950, EN55022B, CISPR22B, EN55024 and TRB-21

FXS SPECIFICATIONS

DS-O Lines	1, 2, 3 or 4
4-Wire E&M Circuit	1, 2, 3 or 4
Line and Balance Impedance	Both resistive and reactive parameters 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
Ring 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
4-Wire E&M Interface	RJ45
2-Wire POTS	Screw-Down Terminals
Synchronous Data Rate (kbps)	512/256/128/64, selectable from configurable GUI
Digital Latency, End to End	< 4.5 ms
Data Interface Connector	25 pin "D" type female

MAINTENANCE DATA INTERFACE

Command Console Port	RS-232 (9600 bps, N, 8, 1)
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ENVIRONMENTAL SPECIFICATIONS

Operating Temperature & Humidity	-30° to 60 °C, 0 to 90% non-condensing
Exposure to the Elements (ODU)	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

