



Network Combiner Connectivity for Radio Links

NCB/RF



NCB/RF™
Network
Combiner

Usage

The NCB/RF™ Network Combiner is a member of CTI Product's growing family of WON™ Wide Operating Network devices that, when used in pairs, allows multiple LONWORKS® networks to be connected in real-time, spanning distances beyond the reach of conventional network wiring.

No cabling is necessary between these radios. Data transfer between distant networks via an NCB/RF pair is "live."

Features

- **No Wire Lines Required**
 - Links networks between buildings
 - Connects networks across parking lots, roads, rivers, hazardous areas
 - Ideal for temporary installations
 - Replaces leased telephone lines
- **Radios**
 - Models can be supplied in Short, Mid and Long-Range Configurations
 - Ranges up to 50 Miles, line-of-sight unobstructed in ideal conditions
 - Data rates up to 57,600 BPS
 - 900 MHz and 2.4 GHz ISM Bands only

- **LONWORKS Router technology**
 - Full LONWORKS system interoperability is maintained.
 - Supports all LONTALK® protocol message services.
 - Configured with standard LONWORKS network management tools.
 - Subnet and group segmentation can be used to maximize network performance.
- **Fully Interoperable LONWORKS Peer-to-Peer Communication Via RF Links**
 - Any node can communicate with any other node, regardless of the location of each.
 - No complex custom software to write, debug, or maintain.
- **Supports Echelon standard transceivers:**
 - FTT10A, TP/XF78 & 1250, LPT-10
 - SMX transceivers including power line and RS485.
- **Typical Applications:**
 - Building Automation
 - HVAC
 - Utilities
 - Industrial
 - Remote Monitoring/Control
 - Remote Diagnostics
 - Security / Access Control

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NCB-RF Module (less radio) Specifications:

Network Connections:	FTT-10A, TPT/XF-78, TPT/XF-1250, SMX, RS485, PLT22 Pluggable terminal strip and Dual RJ45 connectors
Power:	10 to 32 VDC, Negative Ground, Externally Current Limited 2 watts max. without SMX transceiver / 7 watts max. with SMX power line transceiver North American and International Power Supplies available.
Size:	7.5" D x 5.6" W x 1.6" H
Mounting:	Desktop with integral non-slip feet Wall mount or 19" rack mount with optional adapters
Temperature:	0 to +60°C standard
Humidity:	10-95% non-condensing
Listings:	UL1459, CSA C22.2, EC EN60950
EMI:	Complies with FCC part 15 Class A, DOC Class A (Canada) EN55022 Class A (European Union)
EMC:	Complies with EN50082-1 (European Union)
European:	Carries the CE Mark
Configuration:	Router set as a repeater by factory default. Bridge, Configured, or Learning type set using standard LONWORKS network management tools capable of configuring routers.

900 MHz & 2.4 GHz ISM Band Long Range Radio Specifications:

Transmit Power:	800 mW
Sensitivity:	-104 dBm typical
Frequency:	903 to 927 MHz (North America only) or 2.446 to 2.482 GHz
Modulation:	BPSK or QPSK Direct Sequence Spread Spectrum
Antenna:	External (sold separately)
Throughput:	57,600 BPS
Range:	Up to 30 miles, under ideal conditions*
Dimensions:	6" D x 4.125" W x 1.5" H
Power Source:	7.2 VDC 0.6A Receive ; 1.1A Transmit, 120 VAC adaptor supplied
Temperature:	-40 to +70 C
FCC License	Not Required for use in the United States or Canada
Point to Multipoint Mode	Not Supported with NCB-RF Long Range

900 MHz ISM Band Mid & Short-Range Radio Specifications:

Transmit Power:	40 mW
Sensitivity:	-90 dBm typical
Frequency:	907.45, 914.81, or 921.10 MHz (selectable) (North America only)
Modulation:	Direct Sequence Spread Spectrum
Antenna:	Short Range: Internal Mid Range: External (sold separately)
Throughput:	38,400 BPS
Range:	Short Range: 300 feet typical indoors, 3000 feet typical unobstructed line-of-sight* Mid Range: up to 8.5 miles with 13 dBd antennas and unobstructed line-of-sight*
Dimensions:	7.0" D x 4.0" W x 2.0" H
Power Source:	10 VAC 0.6A, 120 VAC Adaptor supplied
Temperature:	Short Range: 0 to +50°C Mid Range: -30 to +60°C
FCC License:	Not Required for use in the United States or Canada
Point to Multipoint Mode	Supported for limited bandwidth networks

*Unobstructed line-of-sight with appropriate antennas, antenna heights and clearances for topographic features, earth's curvature and Fresnel zone. Local interference sources can also affect range. Contact radio manufacturer for specific application assistance.



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