Node-C1943 RF Enhancer

Large Area Coverage, Capacity, and High Speed Data for 1900 MHz CDMA

Now designers of 1900 MHz CDMA systems can get an RF enhancer with intelligence and performance.

The Andrew Node-C1943 is an RF enhancer for CDMA systems with up to 15 MHz of adjacent spectrum. This primary network element is ideal for the first phase of the network rollout and for any subsequent phase where cost, coverage, and quality need to be optimized. Although the Node-C1943's primary function is to increase signal strength between a mobile and a base station in areas where high-quality voice or high-speed data service is not available, it also enhances air-interface capacity and increases the network data rate.

The Node-C1943 is a dedicated CDMA device. It requires no additional hardware upgrades as a network migrates from J-STD-8 to CDMA2000 1X and beyond. The programmable radio may be upgraded locally through a USB based web connection or remotely via a wireless modem, and the modem may be circuit switch or packet data based. This provides the network management system with on-demand, alarm generated, or heartbeat monitoring via the always-connected packet features.

Features and functions may be locally or remotely monitored and changed via a web browser. In addition, Andrew provides a dedicated OMC and has implemented a standard SNMP based MIB that can easily integrate into any 3rd party OMC platform. The graphical browser provides an intuitive setup menu, including a wizard that allows users, regardless of skill level, to correctly setup the equipment without any additional equipment.

The Node-C1943 is self-diagnosing, self-adaptive, and virtually maintenance free. It is designed to provide more than 10 years of service under virtually any condition.

- One man lift form factor
- Auto wizard setup for easy installation
- Digital filtering
- Uniform phase and magnitude amplification
- Automatic interference cancellation
- Decreased isolation requirements
- Virtual measurement equipment
- CDMA quality diagnostics
- SNMP and web-based GUI

An excellent choice for any area, from the urban core to the rural highway.

Specifications for Node-C1943 RF Enhancer

Electrical

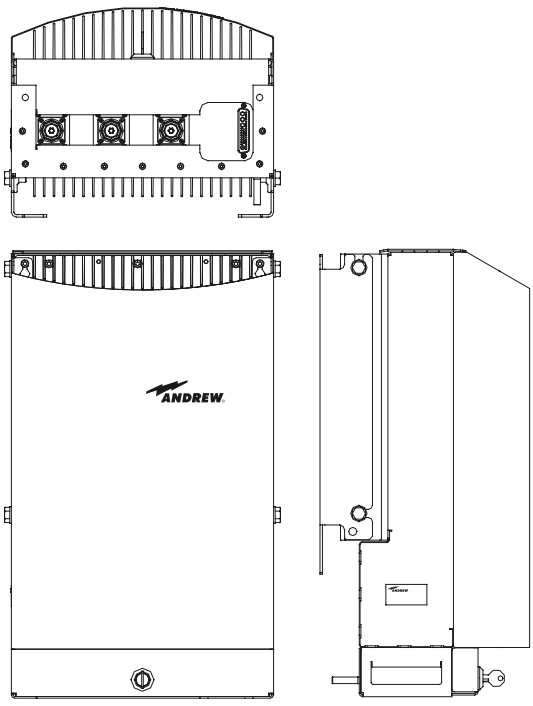
Frequency, *MHz*	Uplink:	1850-1910
	Downlink:	1930-1990
CDMA carriers	Option 1:	1-11 adjacent (per module), 1.23 MHz carriers
	Option 2:	1-3 adjacent (per module), 5 MHz carriers
Maximum downlink output power, *dBm*		+43.0 (1 CDMA carrier) +40.0 (2 CDMA carriers) +37.0 (4 CDMA carriers)
Maximum uplink composite output power		+23 dBm
Output power step size		1 dB
Output power accuracy over all conditions		±1.5 dB
Minimum downlink input power at full output power		-60 dBm
Maximum input power without damage		+10 dBm
Minimum antenna isolation for maximum gain		83 dB minimum
Uplink noise figure over all gain conditions		3.5 dB
Delay, *µs*	Option 1:	< 5.7
	Option 2:	< 8.0

Maximum gain		103 dB (automatic setting)
Gain adjust range		53 dB to 103 dB
Return loss		>15 dB
Uplink diversity		Standard
Spectral emission mask, *dBc*		-45 @ 750 kHz -60 @ 1.98 MHz
Out of band gain (rejection), *dB*	Option 1:	Gain -40 in 750 kHz
	Option 2:	Gain -70 in 750 kHz
Modulation accuracy		RHO > 0.96
Spurious emissions		-13 dBm
Far off selectivity (ultimate rejection)		70 dB
Power supply	Standard:	110 Vac/40-60 Hz
	Optional:	36-72 Vdc
Power consumption, *watts*		430 idle 610 full output power
RF connectors	Standard:	7-16 DIN female
	Optional:	N female
Weatherproofing		IP 55
Temperature range		-33°C to +50°C

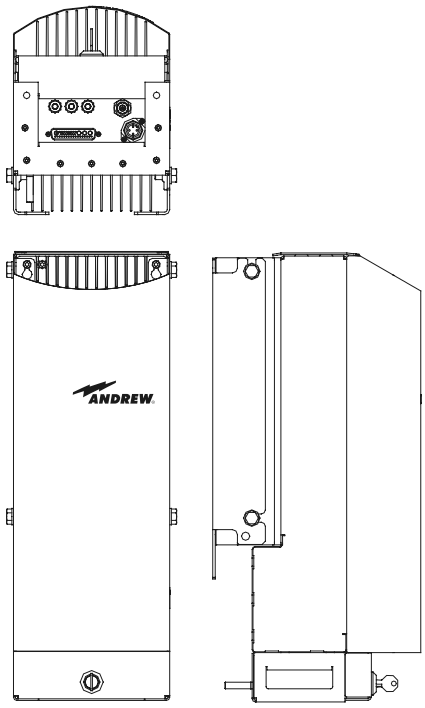
Mechanical

Height, width, depth, *in (mm)*	**Node-C1943**	**Interface Unit**
	21.5 x 12.5 x 10.25 (546 x 320 x 260)	21.5 x 7.5 x 10.25 (546 x 190 x 260)
Weight, *lb (kg)*	**Node-C1943**	**Interface Unit**
	55 (25)	29 (13)

Cooling	twin redundant fans
Acoustic noise, *dBA*	47 @ 25°C 55 @ 50°C



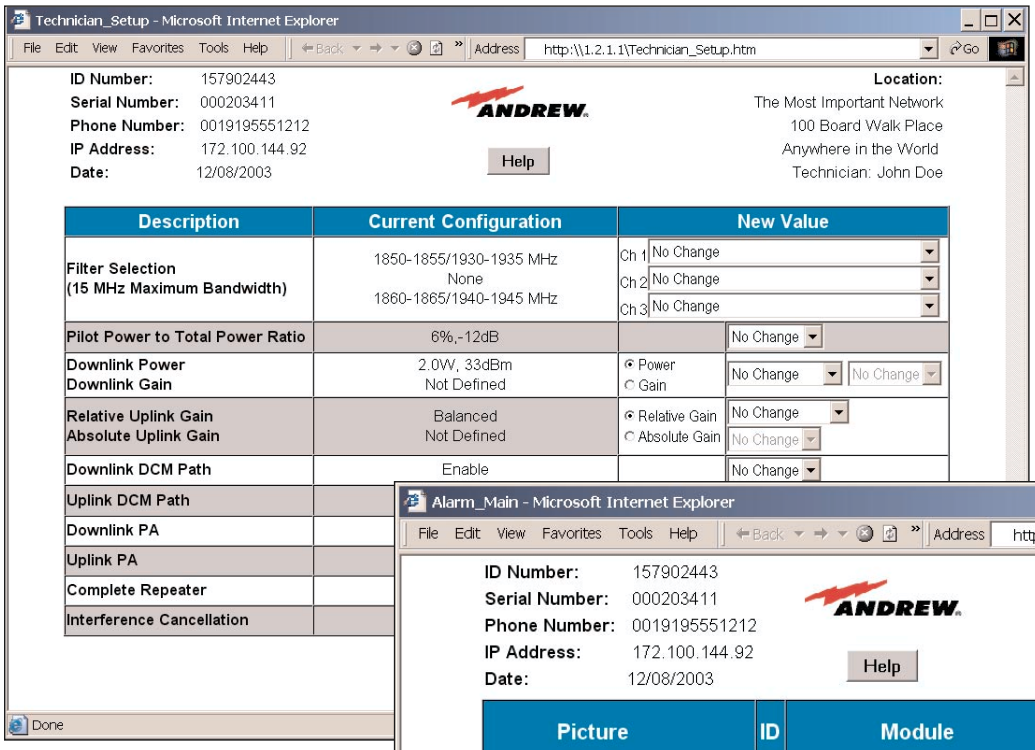
Node-C1943



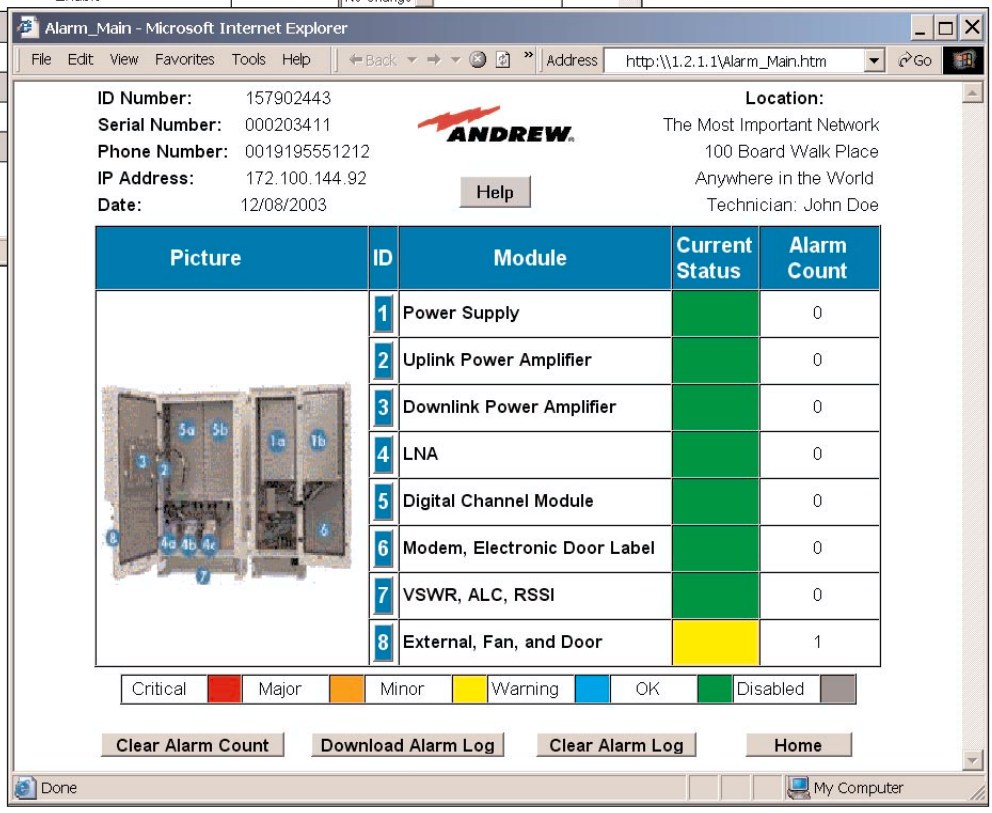
Interface Unit

Features

Items measured	Measurement of pilot power, sync power, Ec/Io, VSWR, RSSI, multipath signal, system identification, EVM, and channel usage.
Interference cancellation equipment (ICE)	Electronic improvement of antenna isolation. Channel or multichannel capable of greater than 35 dB of enhancement.
Diversity	Spatial to time diversity implementation.
Auto configuration	Setup based on downlink power requirements, not gain. Uplink gain is automatically setup based on the downlink settings.
Access	Web browser based local access and remote access. Packet data and circuit switched data options. OMC connectivity via SNMP.
Contact relays	2 active low connections
Mounting	Pole mounting kit and free standing option

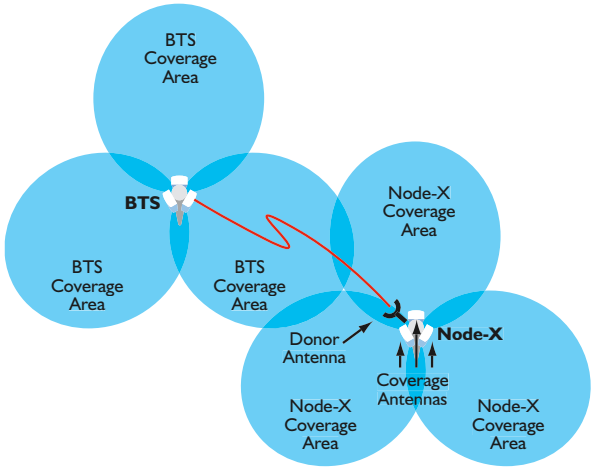


Setup Menu

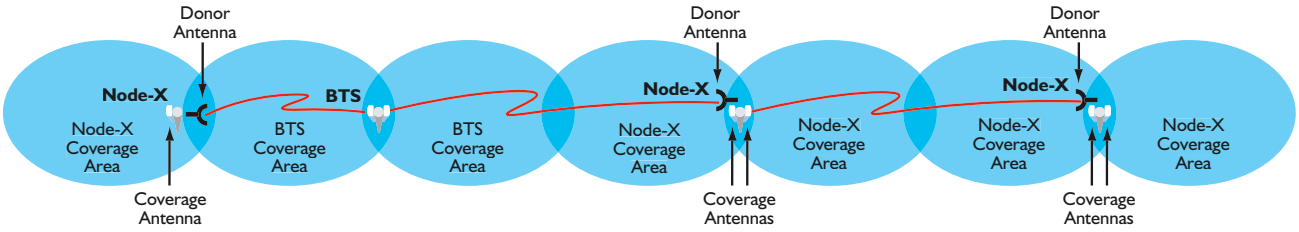


Alarm Menu

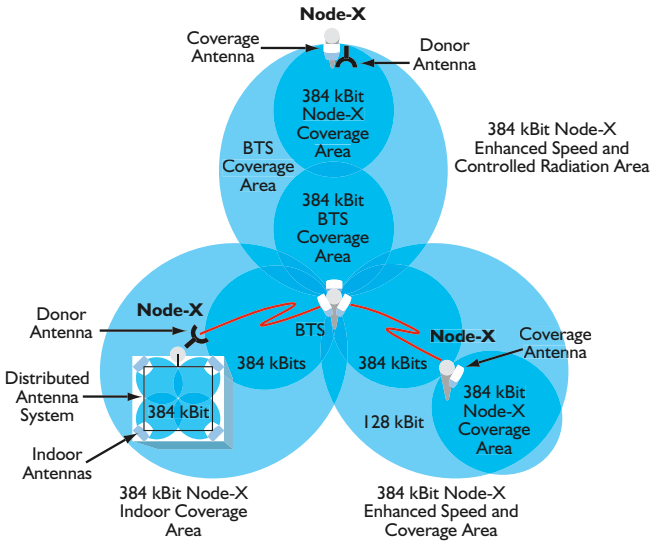
Scenario 1: 3 Sector Coverage for suburban and urban wide area coverage



Scenario 2: Road and Rail Coverage



Scenario 3: Urban hole filling and speed enhancement



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