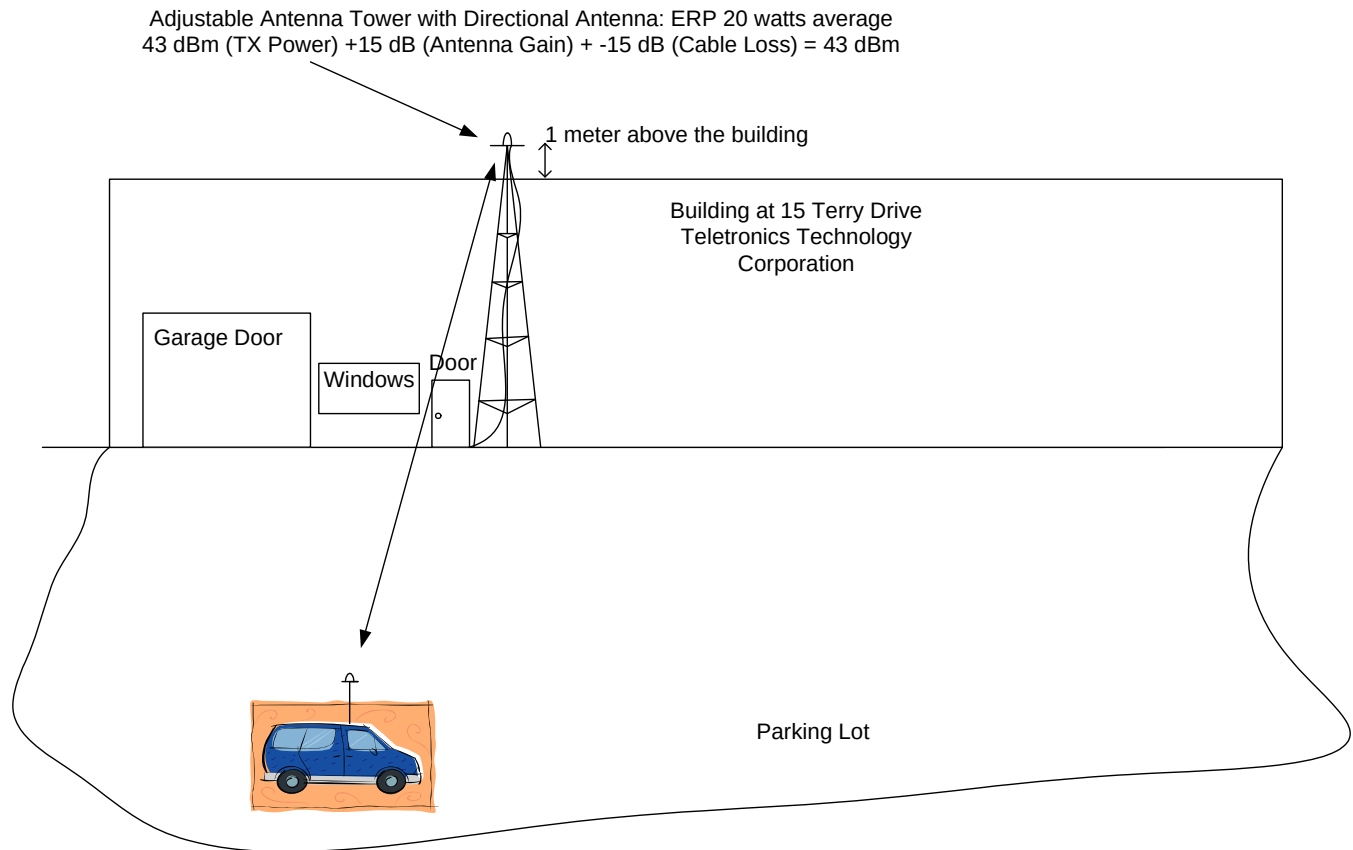


STA Confirmation Number: tbd  
STA File Number: tbd  
Call Sign: WE9XDZ  
Date: 10 Dec 2010  
Teletronics Technology Corporation

Max Tower Height is 30 Ft. The Tower Directional Antenna has a gain of 18 dBi with a cable loss of +15dB minimum.



The nXCVR 21X0 series of IP transceivers are designed for air-to-ground and ground-to-air wireless OFDM-based communications. The transceivers work together to perform the function of a router, transparently interconnecting up to 32 wireless networks into a hub and spoke configuration. Bandwidth is shared among all the remote networks, each network receiving one or more timeslots for transmitting and receiving packets between itself and the hub transceiver. Timeslots are statically allocated by the user during the network configuration process.

The transceivers include a 10/100/1000BASE-T Ethernet interface as the primary routed interface, multiple serial ports for external device control, a high-speed RISC processor and a power-efficient RF transmitter and receiver module. The transceivers incorporate the latest modulation and power-efficient technologies to provide maximum transmission and reception distance under harsh environmental conditions.

The transceivers are OFDM modulation-based and have a fixed **signal bandwidth of 16.5 MHz**. The nXCVR-21X0 data rate is dependent on the received RF signal power.

STA Confirmation Number: tbd  
STA File Number: tbd  
Call Sign: WE9XDZ  
Date: 10 Dec 2010  
Teletronics Technology Corporation

The 21X0 IP transceivers exceed the IEEE 802.11a standard for processing speed, waveform compliance, and RF output power and support Simple Network Management Protocol (SNMP) for remote management.

The nXCVR-21X0 series of transceivers provide the following I/O connectors that include one GPS antenna connector, a power connector and two RF antenna connectors.

The wiring interfaces are summarized below and are described in detail in the following sections:

- **Diagnostic serial/Fast Ethernet port:** A serial console port on J1 provides access to the transceiver chassis for configuration and troubleshooting. A single 100BASE-T Ethernet port on J1 can be used for management, software updates and statistics gathering.
- **Gigabit Ethernet port:** J2 is a gigabit Ethernet port that supports 10/100/1000BASE-T. This port transfers packet data into and out of the transceiver.
- **General I/O port:** J3 is used for the following I/O functions:
  - Antenna control: controls an antenna (for example, for beam steering) (*for future use*)
  - Inertial measurement unit: acquires vehicle inertial data (*for future use*)
  - Differential test output: outputs a Bit Error Rate (BER) test pattern or PCM clock and data
  - General-purpose output: an Opto-isolated output (switch closure)
  - IEEE 1588 PTP one pulse per second output: synchronized to the PTP time
  - Key load: loads encryption key data into the transceiver (*for future use*)
- **GPS antenna port:** J4 is used to connect to a GPS antenna. Active and passive antennas are supported.
- **RF antenna port, input:** RF2 connects to the receive antenna. Impedance is 50 Ohms.
- **RF antenna port, output:** RF1 connects to the transmit antenna. Impedance is 50 Ohms.
- **Power port:** JP1 is the input connector for +28VDC.

STA Confirmation Number: tbd  
 STA File Number: tbd  
 Call Sign: WE9XDZ  
 Date: 10 Dec 2010  
 Teletronics Technology Corporation



**Figure 1 nXCVR-2130B Photograph**

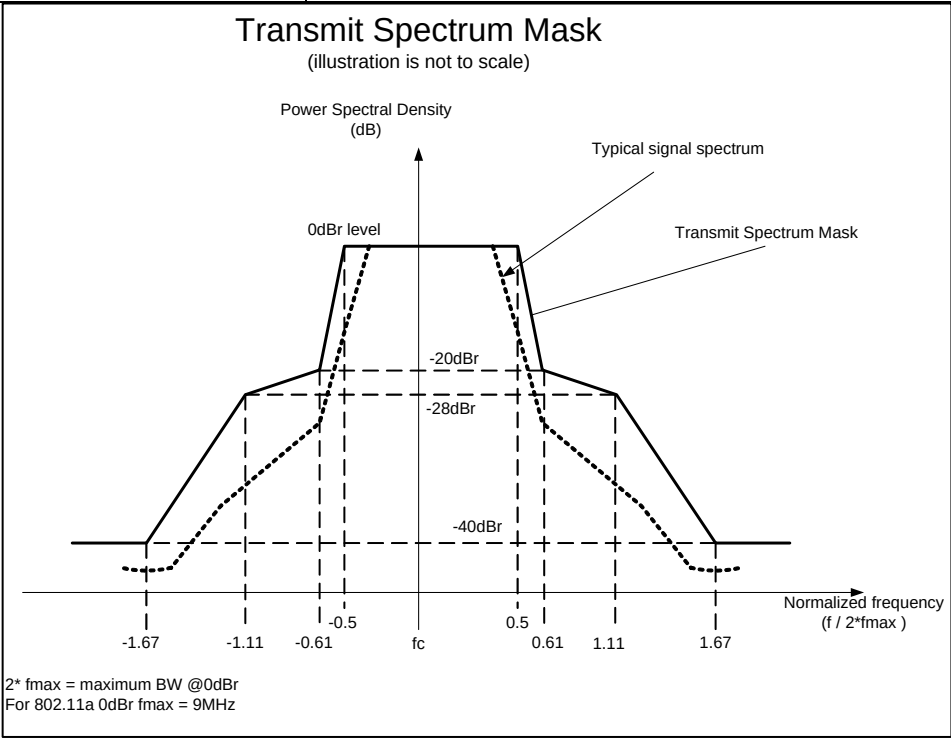
**Table 1 Performance Characteristics**

| <b>General</b>                           |                                                           |
|------------------------------------------|-----------------------------------------------------------|
| Size                                     | 6.26" W x 6.60" D x 2.93" H (159 mm x 167.6 mm x 74.4 mm) |
| Weight                                   | 6lbs. 6 oz. (1534g)                                       |
| Connectors                               | MDM, SMA, MS and TNC styles                               |
| Compliance                               | MIL-STD-461                                               |
| Status information                       | LED1-LED6, various port and system status indicators      |
| General purpose output current           | 50 mA maximum over full temperature range                 |
| General purpose output isolation voltage | 1500 Vrms                                                 |
| <b>Ethernet</b>                          |                                                           |
| Protocols                                | IP, TCP, UDP, SNMP                                        |
| Ethernet ports                           | Two ports: one 100BASE-T, one 10/100/1000BASE-T, IPv4     |
| Interface type                           | Electrical (copper wiring)                                |
| IEEE 1588 time                           | Boundary clock VI                                         |
| Routing                                  | Static routing                                            |
| Communication                            | Unicast, broadcast, multicast                             |
| Time reference                           | IEEE 1588 grandmaster, slave or GPS                       |
| <b>RF Characteristics</b>                |                                                           |
| Transmit power                           | <b>80 W peak; 20 W average</b>                            |
| Receive power                            | +10 dBm (maximum)                                         |
| Receiver sensitivity                     | -82 dBm typical                                           |
| <b>Center frequencies</b>                |                                                           |
| nXCVR-2120B:                             | Tunable from 2200-2300 MHz (future)                       |
| nXCVR-2130B:                             | Tunable from 2300-2400 MHz (in production)                |
| Center frequency stability               | ±.002%                                                    |
| RF port impedance                        | 50 Ohms                                                   |
| <b>Electrical</b>                        |                                                           |
| Power input                              | +28 ± 6 VDC                                               |
| Supply current                           | 3 Amp @ 28 V (estimated)                                  |

STA Confirmation Number: tbd  
STA File Number: tbd  
Call Sign: WE9XDZ  
Date: 10 Dec 2010  
Teletronics Technology Corporation

|                   |                                            |
|-------------------|--------------------------------------------|
| Power consumption | 84 W maximum (estimated)                   |
| Grounding         | Isolated power, signal and chassis grounds |

| Environmental         |                                                                                                                                                                                              |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating temperature | -40° C to +85° C.<br><br><b>Note:</b> Baseplate temperature must be maintained within the above specified temperature range. Do not operate the unit without a properly installed heat sink. |
| Storage temperature   | -55° C to +100° C                                                                                                                                                                            |
| Random vibration      | 15 grms, 20 to 2,000 Hz, 10 minutes, any axis                                                                                                                                                |
| Acceleration          | 25 g indefinite duration, any axis                                                                                                                                                           |
| Shock                 | 15g, half-sine, 11 mS, 6 shocks, any axis                                                                                                                                                    |
| Humidity              | 5-95% RH, non-condensing                                                                                                                                                                     |
| Altitude              | 0 to 70,000 ft. (for up to 200,000 ft. contact TTC)                                                                                                                                          |
| EMI/EMC               | Per MIL-STD-461                                                                                                                                                                              |



Spectrum Mask (16.5 MHz)