Responses to FCC Request for Information.   **06/06/00**

1)   Indicate compliance with the RF safety requirements:

The BLT LAN Transceiver 26-0612 is not a portable or a mobile unit. The BLT LAN Transceiver is a stationary device mounted in an enclosure that is mounted onto power or streetlight poles. The BLT LAN transceiver does not transmit more than +30 dBm. As a part 15 Radio Frequency Device that is neither a millimeter wave device, nor an unlicensed personal communications service device, the unit is excluded by 47 CFR 1.1307 (b)(1): …"all other facilities…are categorically excluded…" from making an exposure study.

2)   Indicate the manufacturer of the spread spectrum chip:

The CellNet Data Systems part number for the custom ASIC chip that generates the spread spectrum is 14-9005 and is made for CellNet Data Systems by NEC Electronics Inc.

3)   The peak output power was 426.6 mW while 1 watt was requested.

The designed output power for the LAN Transmitter is +27dBm ± 3dB for temperature and unit-to-unit manufacturing tolerance. The 426.6mW test unit is +26.3 dBm, which was within 0.7 dB of the nominal design center. The FCC spec 47 CFR 15.247 (B) - (1) states "…and for all direct sequence systems: 1 watt." Therefore, the requested level for max level is 30dBm (1 Watt). For CellNet's previous LAN transceiver, the DSP LAN transceiver, a peak output power of 1 watt was requested and granted. The grant was under FCC ID H6N26113097. Measured peak output power for the test unit was 420 mW or +26.2 dBm.

4)   It appears that the device can operate as a computer peripheral.

The RS-232 serial data interface is used for obtaining detailed information while performing tests; in actual field operation, the internal digital capability is used only to enable operation of the radio frequency part of the device, and the digital capability does not control additional functions or capabilities. So the device is excluded from the definition of a digital device, according to 47CFR 15.3 (k).

However, since the requirements of 15.109 for Class B digital devices are a subset of the requirements of 15.209 for Certificated intentional radiators, the BLT Transceiver 26-0612 meets the 15.109 requirements for Class B digital devices.

5)   Provide data showing compliance with Section 15.207.

The BLT LAN Transceiver does not connect to the power line hence no stand-alone 'line conducted emissions' testing is required. The BLT LAN Transceiver will either operate stand-alone while receiving dc power from a unit called the Selective Repeater or operate under the control of, and while receiving dc power from, a unit called the Micro Cell Controller.

The Selective Repeater passed the conducted emissions requirements for class B digital devices under FCC ID H6N26113097.

The MCC passed the conducted emissions requirements for class B digital devices under FCC ID H6N262101296.

6 & 7) Indicate compliance with Section 15.203.
The device was tested with a 5 dBi antenna model number ASPG918 with a 0.25 meter cable. Verify that this is the only antenna configuration that will be used.

The antenna connection to the BLT LAN Transceiver is professionally installed only by installers trained and certified by CellNet Data Systems. Therefore, 15.203 does not apply.
The ASPG918 antenna has 5-dBi gain and the antenna cable, which has a type N connector on one end and a standard OSX on the other end, has at least .8 dB loss. The ASPG918 antenna is the highest gain antenna used with this unit. The antenna cable used in the test is the shortest cable used with this unit.

8)   Redo power spectral density.

The rate of the spreading / despreading code is 19.2655K code sequences per second. The signal carries another modulation at 642 Hz; thus, the spectral line spacing is 642 Hz which is less than 3 KHz. The testing for spectral density is performed according to FCC Public Notice 54797 for devices with spectrum line spacing equal to, or less than, 3 KHz. The spectral density was taken at a resolution bandwidth lower than 3 kHz per the public notice and the power was normalized to a 3 kHz bandwidth. The sweep time was longer than normal due to the rule that sweep time shall be (span/resolution bandwidth). As the resolution bandwidth was set low enough resolve individual lines the sweep time had to be increased.

9)   Indicate theoretical process gain. What are the data rates?

The chipping rate is 1.2137 Mega-chips per second, and the data symbol rate is 19.2655K code sequences per second, so the chips per symbol ratio is 63, and the theoretical process gain is 10log 63 = 17.99 dB.

10 & 11)   Why more than one process gain unit?

The process gain report included with the previous submission was a result of our normal verification of manufacturability on a new product. The jammer and signal levels were measured at each receiver to insure that each unit met process gain requirements. The process gain measurements were redone and a report of testing on a single unit has been uploaded to the RF Exposure Folder on the 731 Form. The name of the file is "New Process Gain Data".

12)   OOK or CCSK modulation?

OOK (on-off keying) is a worst case test condition (compared to CCSK). The difference is the switching transients occurring from turning on and off the transmit power amp during OOK transmit which could increase spurious emissions and are not required for CCSK data modulation. So, OOK data modulation was used for testing per 15.209 and 15.247. All such emissions were well within FCC specifications. The device uses both OOK and CCSK data modulation.