EXHIBIT 9.

MDR–8000 Operational Description

In the transmit direction the MDR–8000 uses a modulation structure where the I and Q baseband signals modulate the in–phase and quadrature phase components of the transmitter.

The DS1/E1 I/O interface converts the format of the incoming DS1/E1 data streams to I, Q, data, and clock. The DS1/E1 I/O interface module uses the DS1/E1 signals to generate 32 or 128 trellis code amplitude modulated (TCM) baseband signals The transmitter processes the TCM baseband signals to generate the modulated TCM RF signal. The RF signal is then amplified and applied directly to the antenna branching or further amplified by a solid–state amplifier (optional) and applied to the antenna branching.

The DS3 I/O interface converts the format of the incoming DS3 and Wayside (WS) DS1 data streams to I, Q, data, and clock. The I/O interface module uses the DS3 signals to generate 64 Quadrature Amplitude Modulated (QAM) baseband signals. The transmitter processes the QAM baseband signals to generate the modulated QAM RF signal. The RF signal is then amplified and applied directly to the antenna branching or further amplified by a solid–state amplifier (optional) and applied to the antenna branching.

In the receive direction, the MDR–8000 uses a demodulation conversion structure. The received TCM or QAM RF signal is fed into a filter followed by a receiver module. The receiver module directly converts the RF signal to I and Q baseband signals and provides all of the acquisition loops. The receiver also provides countermeasures to dynamic path distortions. Clock and digital data are extracted from the analog channels and passed on to the I/O interface. The digital data is processed by the I/O interface module and converted to a DS1/E1 or DS3 format.

In-Band PCS development requirements:

Four components need to be developed:

- Transmitter
- Receiver
- Power Amplifier
- RF filters.

The Transmitter, Receiver and Power Amplifier are all modified versions of the Canadian band modules. The filters are application dependent. Diplexing filters will be used when both the up and down link can be used and T/R separation is above 65 MHz. Band pass filters with a band reject cell will be used for co-locating situations.

Transmitter:

- The main development of the Transmitter is to improve the out-of-band noise floor.
- One goal is to increase the frequency flexibility of the current 2GHz Transmitter to accommodate the PCS, Canadian Band and unlicensed applications.
- The transmitter design is based on a phase locked VCO which is a stepping stone to a synthesized transmitter in the future.
- The requirements are as follows:
  - **T/L PN**: 3EM11962AAAA
    - PB/RF: 3EM11960ABAA
    - PBA/RF: 3EM11961AAAB
    - BB ASSY: 3DH03139 (same as 8 GHz)
  - **Frequency range**: 1850 – 1990 MHz (PCS Band)
    2025 – 2285 MHz (Canadian Band)
    2400 – 2483 MHz (Unlicensed Band)
    There will most likely be 3 realization variants of the RF PBA and T/L assemblies.
  - **RF DC requirements**: +/- 5 VDC, +10.5 VDC, +/- 12 VDC
  - **Interface requirement**:
    - **Baseband interface**: 20 pin, thru hole male connector
      - I/Q inputs:------- -10dBm
      - RF detect:------ 500mV +/- 50mV
      - DC:---------- +10.5 +/- .2 VDC
        +5 +/- .1 VDC
        -5 +/- .1 VDC
        +12 +/- .2 VDC
        -12 +/- .2 VDC
      - Freq Ctrl---------- +3.0 VDC
      - VVA control------ 0 to 3 VDC

    - **LO interface**: 10 pin ribbon connector
      - LO level: --------- +10 dBm +/- 2 dB

    - **LO monitor**: BNC connector
      - LO level: --------- -10 dBm +/- 2 dB

    - **RF monitor**: SMA connector
      - Level: ---------- 0 dBm +/- 2 dB

    - **RF monitor**: SMA connector
      - Level: ---------- +18 dBm

Receivers:

- The Receiver effort will be an effort to maximize T/I performance, modifying some baseband filtering and optimizing gain/linearity of the design. The design is based on a phase locked VCO. As with the transmitter, receiver frequency flexibility is required.
- The requirements are as follows:
  - **T/L PN**: 3EM11964AAAA
    - PB/RF: 3EM11963ABAA
    - PBA/RF: 3EM11963AAAB
    - BB ASSY: 3EM11554AA
  - **Frequency range**: 1850 – 1990 MHz (PCS Band)
    2025 – 2285 MHz (Canadian Band)
    2400 – 2483 MHz (Unlicensed Band)
    There will most likely be 3 realization variants of the RF PBA and T/L assemblies.
  - **RF DC requirements**: +/- 5 VDC, +/- 12 VDC
  - **Interface requirement**:
    - **Baseband interface**: 20 pin, thru hole male connector
      - DC:---------- +5 +/- .1 VDC
        -5 +/- .1 VDC
        +12 +/- .2 VDC
        -12 +/- .2 VDC
      - Freq Ctrl---------- +3.0 VDC
      - AFC ---------- 0 to 3 VDC
    - **LO interface**: 10 pin ribbon connector
      - LO level: --------- +10 dBm +/- 2 dB
    - **LO monitor**: BNC connector
      - LO level: --------- -10 dBm +/- 2 dB
    - **RF input**: SMA connector
      - Input Level: ---- -15 to -92 dBm
      - RF Gain: ----------28 dB max.
      - NF: ---------- 2.8 dB max.

Power Amplifiers:

- The Power amplifier will be a slight modification of the Canadian 2GHz.
  - **RF input**: SMA connector
    - Input Level: ---------- -12 dBm
    - RF Gain: ----------20 dB max.
  - **RF Output**: SMA connector
    - RF Output Pwr: ------+33 dBm max.