

Subject: Operational Description of DU 1900 FULL BAND

**The Full Band PCS DU**

The PCS DU is a 60MHz wide amplifier outdoor unit that receives the RF signal from the SpotCell 141/142 Dual Band CU and Spotcell 111/112 Split Band CU and transmits it to the Base Station and receives downlink RF signals from the base station to the CU for processing. The PCS DU is powered by a DC power that is transmitted with the same RF signal on the Coax cable from the CU. The PCS DU is also provided with a diplexer that separates the Cellular band RF signals from AP2 and transmits it the Cellular DU through a 1meter coax RF cable. The PCS DU is also provided with an integrated antenna with a peak gain of 11.5dBi. The PCS DU has a fixed gain on the downlink and on the uplink. It is also provided with an RSSI level indicator LED for installation. All the hardware is housed in a plastic housing for outdoor deployment. The PCS DU is also provided with a grounding stud for lightning protection.

The protection/regulatory circuitry is also capable of shutting down the final stage amplifier on the uplink when the system decides to do so due to high in-band signal, under/over input voltage, high downlink in-band signal, high out-band signals, minimum Downlink signal, an isolation that can compromise the stability of the system and if the synthesizers get unlocked.

**Tune-Up Procedure and DC voltage of the last stage Amplifier.**

The final stage of the PCS DU on the downlink is a GaAs HBT linear amplifier, part N° **SXA-389**, from Sirenza Microdevices. (See attached datasheet for SXA-389). The device is operated at 5Vdc @120mA. The Uplink final stage of the PCS DU on the uplink is a GaAs HBT linear amplifier, part N° **SPA-2318**, from Sirenza Microdevices. (See attached datasheet for SPA-2318). The devices is operated at 5vdc @ 400mA.

There is no tune-up on the PCS DU. The PCS DU has a fixed gain of 23dB on the Downlink and an UL gain of 20dB. Please refer to the block diagram of the PCS Full band DU, Doc N° 761-00015-01.