

FCC Part 24 Transmitter Certification **Test Report**

FCC ID: SO4YX500-PCS

FCC Rule Part: CFR 47 Part 24 Subpart E

ACS Report Number: 04-0364-24E

Manufacturer: Wireless Extenders
Equipment Type: PCS Band Bi-Directional Booster
Model: YX500-PCS

Theory of Operation

Wireless Extenders Model YX500-PCS Cell Phone Signal Booster

Theory of Operation:

As a BDA, the YX500-PCS amplifies both the downlink (tower to phone, 1930-1990 MHz) and the uplink (phone to tower, 1850-1910 MHz). The outdoor network signal (downlink) is captured by the Signal Antenna, transferred through the coaxial cable, and arrives at the Base Unit. Inside the Base Unit, a duplexer diverts the downlink signal, amplifies the full band, isolates it from the uplink, and detects the power level. The downlink band is then recombined with another duplexer where the Base Unit Antenna sends the signal inside the home or office.

Similarly, the cell phone signal (uplink) is captured by the Base Unit Antenna and, inside the Base Unit, a duplexer diverts the uplink signal, amplifies the full band, isolates it from the downlink, and detects the power level. The uplink band is then recombined with another duplexer where it exits the Base Unit, is transferred through the coaxial cable to the Signal Antenna which sends the signal to the outdoor network.

The detected power levels are monitored by a microcontroller. The microcontroller limits the maximum output power to keep the amplifiers linear without interfering with the network power control. It also detects low-level self-oscillation and either corrects it or alerts the user with LED outputs.