

FCC Part 22 Transmitter Certification

Test Report

FCC ID: SO4YX500-CEL

FCC Rule Part: CFR 47 Part 22 Subpart H

ACS Report Number: 05-0343-22H

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

Theory of Operation

Theory of Operation:

As a BDA, the YX500-CEL amplifies both the downlink (tower to phone, 869-894 MHz) and the uplink (phone to tower, 824-849 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. The downlink final amplifier operates class A at 3.6V and 50mA.

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 uplink PA operates class AB at 3.6V and 200mA – 800mA.

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. Patent pending circuitry and algorithms also detect low-level self-oscillation and either corrects it or shuts down while alerting the user with LED outputs.