FCC Part 22/24
Transmitter Certification

Test Report

FCC ID: SO4YX510

**FCC Rule Part: CFR 47 Part 22 Subpart H,
CFR 47 Part 24 Subpart E**

ACS Report Number: 06-0291-22H, 06-0291-24E

Manufacturer: Wireless Extenders
Equipment Type: Dual Band Bi-Directional Signal Booster
Model: YX510-PCS-CEL

RF Exposure

General Information:

Applicant:	Wireless Extenders
ACS Project:	06-0291
FCC ID:	SO4YX510
Device Category:	Uplink – Fixed, Downlink - Mobile
Exposure Conditions:	Uncontrolled/General Population

Technical Information:

Note: Multiple antennas are available with this device. Antennas specified below indicate the antennas with the maximum gain for each path.

CELLULAR OPERATION:

UPLINK:

Antenna Type:	Yagi
Antenna Gain Maximum:	7dBi
Max Transmitter Output Power:	25.48dBm
Max System EIRP:	32.48dBm / 1.8W
Operating Configuration:	Fixed

DOWNLINK:

Antenna Type:	Directional Panel
Antenna Gain Maximum:	6dBi
Max Transmitter Output Power:	3.94dBm
Max System EIRP:	9.94dBm / 0.010W
Operating Configuration:	Mobile

PCS OPERATION:

UPLINK:

Antenna Type:	Directional Panel
Antenna Gain Maximum:	13dBi
Max Transmitter Output Power:	25.96dBm
Max System EIRP:	38.96dBm / 7.9W
Operating Configuration:	Fixed

DOWNLINK:

Antenna Type:	Directional Panel
Antenna Gain Maximum:	9dBi
Max Transmitter Output Power:	13.36dBm
Max System EIRP:	22.36dBm / 0.172W
Operating Configuration:	Mobile

NOTE: Multiple antennas are available for both the uplink and downlink applications. Listed above are antennas with the highest gain.

MPE Calculation

The Power Density (mW/cm^2) is calculated as follows:

$$S = \frac{PG}{4\pi R^2}$$

Where:
S = power density (in appropriate units, e.g. mW/cm2)
P = power input to the antenna (in appropriate units, e.g., mW)
G = power gain of the antenna in the direction of interest relative to an isotropic radiator
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

Calculations were performed at the frequencies with the highest output power as determined during testing.

Maximum Permissible Exposure (MPE) General Population/Uncontrolled Exposure								
Transmit Frequency (MHz)	**Radio Power (dBm)**	**Power Density Limit (mW/Cm2)**	**Radio Power (mW)**	**Antenna Gain (dBi)**	**Antenna Gain (mW eq.)**	**Distance (cm)**	**Power Density (mW/cm^2)**	**Configuaration**
836	25.48	0.56	353.18	7	5.012	20	0.352	Uplink
894	3.94	0.60	2.48	6	3.981	20	0.002	Downlink
1850	25.96	1.00	394.46	13	19.953	26	0.926	Uplink
1990	13.36	1.00	21.68	9	7.943	20	0.034	Downlink

Installation Guidelines

End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.