Excellence in Compliance Testing

Certification Exhibit

FCC ID: SO4YX230
IC: 5544A-YX230

FCC Rule Part: CFR 47 Part 22 Subpart H, Part 24 Subpart E
IC Radio Standards Specification: RSS-131

ACS Report Number: 08-0003-LD

Manufacturer: Wireless Extenders Inc.
Model: YX230

RF Exposure

General Information:

Applicant:	Wireless Extenders
ACS Project:	08-0003-LD
Model:	YX230
Device Category:	Mobile
Exposure Conditions:	Uncontrolled/General Population

Technical Information:

Uplink Antenna Cable: 20 ft. RG-174 cable
Cable loss: 4dB (Cellular), 8dB (PCS)

Downlink antenna Cable: 10 ft. RG-174
Cable loss: 2dB (Cellular), 3dB (PCS)

Maximum EIRP is calculated as follows:
EIRP (dBm) = Antenna Gain (dBi) – Cable Loss (dB) + Transmitter Output Power (dBm)

CELLULAR OPERATION:

UPLINK:

Antenna Type:	Dipole
Antenna Gain Maximum:	2.15dBi
Antenna Cable Loss:	4dB
Max Transmitter Output Power:	19.75dBm
Max System EIRP:	17.90dBm / 0.062W

DOWNLINK:

Antenna Type:	Dipole
Antenna Gain Maximum:	1dBi
Cable Loss	2dB
Max Transmitter Output Power:	14.10dBm
Max System EIRP:	13.10dBm / 0.020W

PCS OPERATION:

UPLINK:

Antenna Type:	Dipole
Antenna Gain Maximum:	2.15dBi
Cable Loss:	8dB
Max Transmitter Output Power:	19.27dBm
Max System EIRP:	13.42dBm / 0.022W

DOWNLINK:

Antenna Type:	Dipole
Antenna Gain Maximum:	1dBi
Cable Loss	3dB
Max Transmitter Output Power:	10.74dBm
Max System EIRP:	8.74dBm / 0.007W

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.

The antenna gain listed was calculated to include the cable loss of the antenna cable.

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
849	19.75	0.57	94.41	-1.85	0.653	20	0.012	Uplink
881	14.1	0.59	25.70	-1	0.794	20	0.004	Downlink
1880	19.27	1.00	84.53	-5.85	0.260	20	0.004	Uplink
1960	10.74	1.00	11.86	-2	0.631	20	0.001	Downlink

Installation Guidelines

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

RF Exposure

In accordance with FCC requirements of human exposure to radio frequency fields, the radiating element shall be installed such that a minimum separation distance of 20 centimeters will be maintained.

Conclusion

This device complies with the MPE requirements by providing adequate separation between the device, any radiating structure and the general population.