Excellence in Compliance Testing

Certification Exhibit

FCC ID: 2AFWA-UMR-1

FCC Rule Part: 47 CFR Part 2.1091

ACS Project Number: 15-3040

Manufacturer: ILS Technology LLC
Model: UMR-1

RF Exposure

General Information:

Applicant: ILS Technology LLC
Device Category: Mobile
Environment: General Population/Uncontrolled Exposure

The UMR-1 is collocated and transmits simultaneously with the UMR-2 radio.

Technical Information:

Table 1: Technical Information

	ILSTechnology, LLC 802.11g Model UMR-1 FCC ID: 2AFWA-UMR-1	**ILSTechnology, LLC 802.11g Model UMR-2 FCC ID: 2AFWA-UMR-2**
Frequency Bands (MHz)	2405	906
Antenna Type(s)	Vertical Dipole	5/8 Wave over 5/8 Wave Collinear
Antenna Gain (dBi)	3	5
Conducted Power dBm	18.63	23.8

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)

Table 2: MPE Calculation (Including Collocated Devices)

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/cm²)	Radio
2405	18.63	1	72.95	3	1.995	20	0.029	A
906	23.8	0.6	239.88	5	3.162	20	0.151	B

Summation of MPE ratios – Simultaneous Transmissions
This device contains multiple transmitters which can operate simultaneously; therefore the maximum RF exposure is determined by the summation of MPE ratios. The limit is such that the summation of MPE ratios is ≤ 1.0.

Table 3: Summation of MPE Ratios

	Scenario 1
Radio A (UMR-1)	x
Radio B (UMR-2)	x
Radio A MPE Ratio	0.0290
Radio B MPE Ratio	0.250
MPE Ratio Summation:	0.279