



Excellence in Compliance Testing

Certification Exhibit

FCC ID: TFT-IDLMAX01

FCC Rule Part: 15.225

ACS Report Number: 10-0051.W04.11.A

Manufacturer: MaxID
Model: iDL500

RF Exposure

General Information:

Applicant: MaxID
 ACS Project: 10-0051
 FCC ID: TFT-IDLMAX01
 Environment: General Population/Uncontrolled Exposure
 Exposure Conditions: Mobile
 Simultaneous Transmit: Yes
 FCC KDB Reference: 341531 (allows for mobile RF exposure classification in handheld operating configurations)

Technical Information:

This device contains multiple simultaneous transmitting devices however the contribution of the low power 13.56 MHz RFID / smartcard reader to the overall MPE calculation is negligible and therefore not included in the power density calculations contained within this document.

Radio	802.11b/g FCC ID: TFT-W2SW0001	Bluetooth FCC ID: QOQWIT12	GSM/WCDMA FCC ID: RI7UC864G (850 Band)	GSM/WCDMA FCC ID: RI7UC864G (PCS 1900 Band)
Antenna Type	Dielectric Planar Inverted-F Type	Multilayer Chip	PCB omnidirectional	PCB omnidirectional
Antenna Gain	1.71dBi	0.5dBi	0.01 dBi	1.25dBi
Conducted Power	0.03W 14.77dBm	0.002W 3.46dBm	0.816W 29.11dBm	0.409W 26.11dBm
Maximum EIRP	0.044W	0.002W	0.818W	0.545W
Maximum ERP	0.027W	0.002W	0.498W	0.332W

* Note: The RI7UC864G is a GSM/WCDMA module, however only the GSM conducted power, EIRP, and ERP data is presented due to the WCDMA having much lower conducted power.

MPE Calculation:**Power Density**

The Power Density (mW/cm²) 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)

Source-Based Time-Averaging of GSM/WCDMA FCC ID: RI7UC864G

The FCC ID: RI7UC864G GSM/WCDMA module has a declared 50% source-based time-averaged duty factor. The maximum conducted output power level was corrected by a factor of 0.50 or 3dB to account for the source-based time-averaging.

Corrected Output Power Level 850 = 1.633W * 0.50 = 0.816W = 29.11dBm

Corrected Output Power Level 1900 = .818W * 0.50 = 0.409W = 26.11dBm

MPE Calculator for Mobile Equipment Limits for General Population/Uncontrolled Exposure*							
Transmit Frequency (MHz)	Radio Power (dBm)	Power Density Limit (mW/cm ²)	Radio Power (mW)	Antenna Gain (dBi)	Antenna Gain (mW eq.)	Distance (cm)	Power Density (mW/cm ²)
2437	14.77	1.00	29.99	1.71	1.483	20	0.009
2480	3.46	1.00	2.22	0.5	1.122	20	0.000
836.4	29.11	0.56	814.70	0.01	1.002	20	0.162
1880	26.11	1.00	408.32	1.25	1.334	20	0.108

Summation of Power Densities – Simultaneous Transmissions

This device contains multiple transmitters which can operate simultaneously and therefore the maximum RF exposure is determined by the summation of power densities.

The maximum power density as calculated by a summation of power densities for each simultaneous transmission combination as follows:

GSM/WCDMA 850, Bluetooth, 802.11b/g:

Bluetooth : 0.000 (mW/cm²)
 802.11b/g: 0.009 (mW/cm²)
 GSM 850 (GSM/WCDMA): 0.162 (mW/cm²)
TOTAL: 0.171 (mW/cm²)

GSM/WCDMA PCS 1900, Bluetooth, and 802.11b/g:

Bluetooth: 0.000 (mW/cm²)
 802.11b/g: 0.009 (mW/cm²)
 GSM 1900 (GSM/WCDMA): 0.108 (mW/cm²)
TOTAL: 0.117 (mW/cm²)

Installation Guidelines:

The installation manual shall contain text similar to the following advising how to install the equipment to maintain compliance with the FCC RF exposure requirements:

“RF Exposure (Intentional Radiators Only)

In accordance with FCC requirements of human exposure to radiofrequency fields, the radiating element shall be installed such that a minimum separation distance of 20cm is maintained from the general population.”

Conclusion:

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