

CETECOM™

CETECOM ICT Services
consulting - testing - certification >>>



Maximum Permissible Exposure (MPE) & Exposure evaluation

Report identification number: 1-0047/15-02-05_MPE

Certification numbers and labeling requirements	
FCC ID	TA8AUKL50158-21L
IC number	287AB-AN5015821L
HVIN (Hardware Version Identification Number)	MINI-LINK 6351 60/21L
PMN (Product Marketing Name)	MINI-LINK 6351
FVIN (Firmware Version Identification Number)	N/A
HMN (Host Marketing Name)	N/A

This test report is electronically signed and valid without handwriting signature. For verification of the electronic signatures, the public keys can be requested at the testing laboratory.

Document authorized:

Karsten Gerald
Lab Manager
Radio Communications & EMC



EUT technologies:

Technologies:	Max. power: (AVG)	Max. gain:	Min. pathloss:
microwave link	8 dBm (+2 dB)	32.6 dBi	0 dB (if applicable)

Prediction of MPE limit at given distance - FCC

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = PG / 4\pi R^2$$

where: S = Power density
 P = Power input to the antenna
 G = Antenna gain
 R = Distance to the center of radiation of the antenna

The table below is excerpted from Table 1B of 47 CFR 1.1310 titled "Limits for Maximum Permissible Exposure (MPE), Limits for General Population/Uncontrolled Exposure"

Frequency Range (MHz)	Power Density (mW/cm ²)	Averaging Time (minutes)
300 - 1500	f/1500	30
1500 - 100000	1.0	30

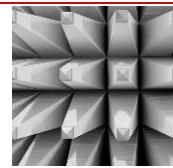
where f = Frequency (MHz)

RSS-102, Issue 5, 2.5.2

RF exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows:

- below 20 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1 W (adjusted for tune-up tolerance);
- at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $4.49/f^{0.5}$ W (adjusted for tune-up tolerance), where f is in MHz;
- at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance);
- at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $1.31 \times 10^{-2} f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz;
- at or above 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 5 W (adjusted for tune-up tolerance).

Frequency range	Exposure characteristics	Equivalent plane wave power density S_{eq} (W/m ²)	Average time period (min)
6 – 150 GHz	occupational	50	6
	general public	10	6



Prediction: worst case

	< 1500 MHz	> 1500 MHz
Technology		
P Max power input to the antenna		10 dBm
G Antenna gain		32.6 dBi
S MPE limit for uncontrolled exposure		1 mW/cm ²
R Calculated Distance		38 cm

This prediction demonstrates the following:

The power density level for IC and FCC at a distance of 38 cm are theoretically below the maximum level allowed by regulations.