

ATTACHMENT B to File No.: T34968-00-00HU

Maximum permissible exposure (MPE)
Model: RRU4-ETG-U6

1.1

For test instruments and accessories used see section 6 Part **CPC 2**.

1.1.1 Description of the test location

Test location: AREA4

1.1.2 Applicable standard

According to FCC Part 15, Section 15.247(i):

Systems operating under the provisions of this section shall be operated in a manner that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines.

The test methods used comply with ANSI/IEEE C95.1, "IEEE Standard for Safety Levels with respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz".

This test report shows the compliance with the limits for Maximum Permissible Exposure (MPE) specified in FCC Part 1, Section 1.1310 and the criteria to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified in FCC Part 1, Section 1.1307(b).

1.1.3 Description of Measurement

The maximum total power input to the antenna has been measured conducted as described in clause 5.3 of this document. Through the Friis transmission formula, the known maximum gain of the antenna and the maximum power, the MPE can be calculated in a defined distance away from the product.

$$\text{Friis transmission formula: } P_d = \frac{P_{out} * G}{4 * \Pi * r^2}$$

where

P_d = power density (mW/cm²)

P_{out} = output power to antenna (mW)

G = gain of antenna (linear scale)

r = distance between antenna and observation point (cm)

ATTACHMENT B to File No.: T34968-00-00HU

1.1.4 Test result

a) Power setting 28.5 dBm

Antenna 520 10087: antenna gain 7.5 dBi

Channel No.	Frequency (MHz)	Max power output to antenna (dBm)	Antenna gain (dBi)	Cable loss (dB)	Power density (mW/cm ²)	Limit of power density (mW/cm ²)
1	902.25	27.7	588.8	7.5	1.0	0.523
26	914.75	27.4	549.5	7.5	1.0	0.488
52	927.75	27.0	501.2	7.5	1.0	0.445

b) Power setting 30 dBm

Antenna 520 10073: antenna gain 5.2 dBi

Antenna 520 10085: antenna gain -15 dBi

Antenna 520 10092: antenna gain -30 dBi

MPE was calculated with the worst case antenna with 5.2 dBi

Channel No.	Frequency (MHz)	Max power output to antenna (dBm)	Antenna gain (dBi)	Cable loss (dB)	Power density (mW/cm ²)	Limit of power density (mW/cm ²)
1	902.25	28.3	676.1	5.2	1.0	0.354
26	914.75	28.1	645.7	5.2	1.0	0.338
52	927.75	27.8	602.6	5.2	1.0	0.315

Limits for maximum permissible exposure (MPE):

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minutes)
(B) Limits for General Population / Uncontrolled Exposure				
0.3 – 3.0	614	1.63	100	30
3.0 – 30	824/f	2.19/f	180/ f ²	30
30 - 300	27.5	0.073	0.2	30
300-1500	---	---	f/1500	30
1500-100000	---	---	1.0	30

f = Frequency (MHz)

According to FCC Rules 47CFR 2.1093(b) the EUT is not a portable device. The EUT is designed to be used that radiating structures are more than 20 cm outside of the body of the user. (r = 20 cm).

Note: The manufacturer shall state in the manual the minimum cable length for each antenna. Additionally this shall be stated on the label of the EuT.

The requirements are **FULFILLED**.

Remarks:
