



ALPS ELECTRIC CO., LTD

HEAD OFFICE :1-7, YUKIGAYA OTSUKA-CHO, OTA-KU, TOKYO, 145-8501 JAPAN
 PHONE:(03)3726-1211 FACSIMILE:(03)3728-1812

COMMUNICATION DEVICES DIVISION, SOMA PLANT
 1-2-1, OKINOUCHI, SOMA-CITY, FUKUSHIMA-PREF., 976-8501, JAPAN
 PHONE:+81-244-35-1207 FACSIMILE:+81-244-35-1602

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Federal Communications Commission
 Equipment Authorization Division
 Application Processing Branch
 7435 Oakland Mills Road
 Columbia, Maryland 21046

Declaration concerning RF Radiation Exposure

This module, UGPZ4 may be installed into any end product mobile applications. Because the module only radiates very low power levels, it complies with RF exposure requirements for the mobile and portable device. According to Supplement C, Edition 01-01 to OET Bulletin 65, spread spectrum transmitters are categorically excluded from routine environmental evaluation because of the low power level, where there is a high likelihood of compliance with RF exposure standards.

RF exposure calculations for mobile device

The following minimum separation distance between the EUT's antenna and the human body is calculated in accordance with the limits of uncontrolled exposure of FCC OET bulletin 65C below.

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz *Plane-wave equivalent power density

This calculation is based on the highest EIRP possible from the systems, considering maximum power and antenna gain, and considering a power density uncontrolled exposure limits.

The Friis formula used was:

$$S = P * G / 4 \pi R^2$$

Where;

S=Max. permissible exposure level (mW/cm²)

P=Max. conducted output power at antenna terminal (mW)

G=Max. antenna Gain (numeric gain)

R=Minimum safe distance (cm)

The following calculation presents the results of the maximum permissible exposure (MPE) level for the antenna, because the antenna has the maximum antenna gain of 0dBi.

S=1.0mW/cm² for 2400MHz: Limit value

P=1.422 mW (Maximum conducted power)

G=1.0 (numeric gain)=0dBi (Max. antenna Gain)

R=20cm

$$S = 1.422 * 1.0 / (4 \pi 20^2) = 0.000283 \text{ mW/cm}^2$$

Sincerely,

Signature:



Name: Masaaki Ueki

Title: Compliance Team Leader

Company: Alps Electric Co., Ltd Communication Devices Division