Maximum Permissible Exposure Evaluation

FCC ID: 2APCO-S02C915

1. Client Information

Applicant	:	V-chip Microsystems, Inc.
Address	:	6floor, Longtang Building, NanShan Cloud Valley Innovation Industrial Park, No.1183, LiuXian Road, NanShan District, ShenZhen, China
Manufacturer	:	V-chip Microsystems, Inc.
Address	:	6floor, Longtang Building, NanShan Cloud Valley Innovation Industrial Park, No.1183, LiuXian Road, NanShan District, ShenZhen, China

2. General Description of EUT

EUT Name	:	Ultra-Low Power Long Range RF Module	
Models No.	:	VT-S02C-915	
Product Description	:	Operation Frequency:	904MHz~920MHz
		Number of Channel:	18 Channels
		RF Output Power:	9.456dBm(Max)
		Antenna Gain:	2.5dBi Internal Antenna
		Modulation Type:	2-GFSK
		Bit Rate of Transmitter:	50kbps
Power Supply	:	DC Voltage supplied by Host System	
Power Rating	:	DC 3.3V by Host System	
Connecting I/O Port(S)	:	Please refer to the User's Manual	
Note: More information about the RF function, please refer the RF test reports.			

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MPE Calculations for 904~920MHz

1. **Antenna Gain:**
   Internal Antenna: 2.5dBi.

2. **EUT Operation Condition:**
   Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

3. **Exposure Evaluation:**
   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: 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

4. **Test Result:**

Worst Maximum MPE Result								
Mode	N_{TX}	Freq. (MHz)	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/cm^2) [S]
GFSK	1	904	9.456	9±1	10	2.5	20	0.00354
		911	9.415	9±1	10	2.5	20	0.00354
		920	9.026	9±1	10	2.5	20	0.00354

Note:
(1) N_{TX}= Number of Transmit Antennas
(2) RF Output power specifies that Maximum Conducted Peak Output Power.

5. Conclusion:

As specified in Table 1B of 47 CFR 1.1310- Limits for Maximum Permissible Exposure (MPE),

Limits for General Population/ Uncontrolled Exposure

Frequency Range (MHz)	Power density (mW/cm^2)
300-1,500	F/1500
1,500-100,000	1.0

For 904~920 MHz
MPE limit S: 0.6026mW/ cm^2
The MPE is calculated as ***0.00354***mW / cm^2 < limit 0.6026mW / cm^2. So, RF exposure limit warning or SAR test are not required.

The EUT will only be used with a separation of 20cm or greater between the antenna and nearby persons and can therefore be considered a mobile transmitter per 47 CFR2.1091 (b).

The RF Exposure Information page from the manual is included here for reference.

Note

For a more detailed features description, please refer to the RF Test Report.

-----END OF REPORT-----