Maximum Permissible Exposure Evaluation

FCC ID: 2ARXM9502PP

1. Client Information

Applicant	:	Shenzhen Huitonexing Electronic Co.,Ltd.
Addres	:	Floor 4. East Block, F#, North No.2, Bantian, Longgang District, Shenzhen, China
Manufacturer	:	Shenzhen Huitonexing Electronic Co.,Ltd.
Address	:	Floor 4. East Block, F#, North No.2, Bantian, Longgang District, Shenzhen, China

2. General Description of EUT

EUT Name	:	RFID Reader	
Models No.	:	9502, 9502E, 9511, 9511E, 9512, 9512E, 9514, 9514E, 9518, 9518E, 8201, 8201E, 8203, 8203E, 8502, 8502E, 8503, 8503E	
Model Difference	:	All these models are identical in the same PCB, layout and electrical circuit, the only difference is model name.	
Product Description	:	Operation Frequency:	902.5MHz~927NHz
		RF Output Power:	26.48dBm
		Antenna Gain:	8dBi Circular Polarized Antenna
Power Rating	:	Input: DC 9.0 V/3A from the AC/DC Adapter.(ADS-18H-12-2 0918G)	
Software Version	:	N/A	
Hardware Version	:	N/A	
Connecting I/O Port(S)	:	Please refer to the User's Manual	

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MPE Calculations

1. Antenna Gain:

PCB Antenna: 8dBi.

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:

Antenna gain=8dBi(Numeric= 6.30957344), π=3.1416,R=30cm

Frequency (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/ cm2) [S]	Limit for Power Density (mW/ cm2) [S]
902.5	26.48	26±1	27	8	30	0.27961	3.008
915	26.08	26±1	27	8	30	0.27961	3.050
927	25.65	25±1	26	8	30	0.22211	3.090

5. Conclusion:

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

Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Power density (mW/cm^2)
300-1,500	F/300
1,500-100,000	5.0

For 902.5~927 MHz
MPE limit S: 3.008mW/ cm^2
The MPE is calculated as ***0.27961mW / cm^2 < limit 3.008mW / 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.

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