

## 3.7 RF Exposure

### 3.7.1 Test Instruments

Description	Manufacturer	Model No.	Serial No.	Next of Calibration
Spectrum Analyzer	Advantest	R3273	121100554	Jun. 15, 2010
RF Test Room	-	-	-	-

*Note :* 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to RRL, KRISS, KTL and HCT.  
 2. The calibration interval of horn ant. and loop ant. is 24 months

### 3.7.2 Limit

According to §15.247(b)(4) and §1.1307(b)(1), Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

According to §1.1310 and §2.1093 RF exposure is calculated.

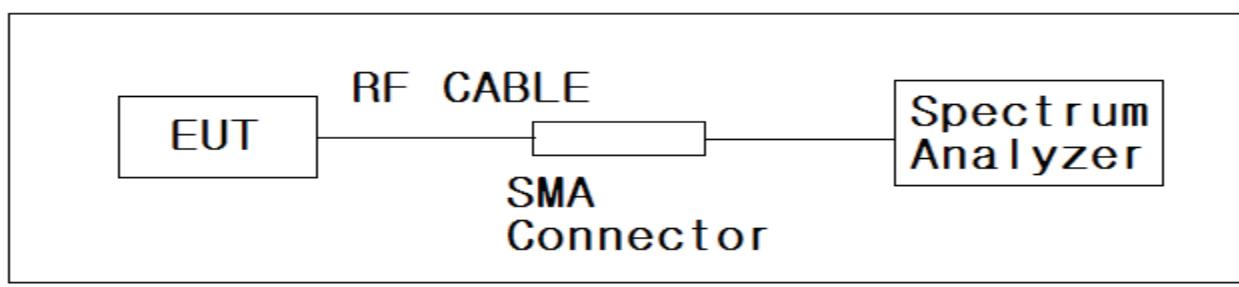
#### Limits for Maximum permissive Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (minute)
Limits for General Population/Uncontrolled Exposure				
0.3 – 1.34	614	1.63	*(100)	30
1.34 – 30	824/f	2.19/f	*(180/f <sup>2</sup> )	30
30 – 300	27.5	0.073	0.2	30
300 – 1500	/	/	f/1500	30
1500 - 15000	/	/	1.0	30

f=frequency in MHz

\*=Plane-wave equivalent power density

### 3.7.3 Test Configuration



## 3.7.4 Test Result

EUT	VTV-A10
Operating Frequency band	2412 ~ 2472 MHz
Device category	Portalbe ( <20 cm separation)
Exposure classification	General Population/ Uncontrolled exposure ( $S = 1\text{mW/cm}^2$ )
Max. output power	13.96 dBm (24.89 mW)
Antenna gain(Max)	1.05 dBi (Numeric gain : 1.273)
Evaluation applied	MPE Evaluation

Note :

1. The maximum output power is 13.96 dBm (24.89 mW) at 2472 MHz ( with 1.273 numeric antenna gain)
2. For mobile or fixed location transmitters, no SAR consideration applied. The minimum separation generally be used is at least 20 cm, even if the caluculations indicate that the MPE distance would be lesser.

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

- S = Power density
- P = Power input to 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

Maximum peak output power at antenna input terminal : 13.96 (dBm)

Maximum peak output power at antenna input terminal : 24.89 (mW)

Antenna Gain(typical) : 1.05 (dBi)

Maximum antenna gain : 1.273(numeric)

Prediction distance : 20 (cm)

Predication frequency : 2472 (MHz)

MPE limit for uncontrolled exposure at prediction frequency : 1 ( $\text{mW/cm}^2$ )

Power densit at predication frequency : 0.006 ( $\text{mW/cm}^2$ )

*Note : The power density at 20 cm does not exceed the  $1\text{mW/cm}^2$  limit. Therefore, the exposure condition is compliant with FCC rules.*