MPE CALCULATION

Systems shall be operated in a manor that ensures that the public is not exposed to radio frequency energy levels in excess of the FCC guidelines.
The EUT will only be used with a separation of 20 centimetres or greater between the antenna and the body of the user or nearby persons.
The MPE calculation for this exposure is shown below.

<u>Using the Antennas with highest output power:</u>

The peak radiated output power (EIRP) is calculated as follows:

Antenna	Frequency (GHz)	Power input to the antenna (P) (dBm)	Power gain of the antenna (G) (dBi)	EIRP (P+G) (dBm)	EIRP Log-1(dBm/10) (mW)
WSS002 Series Swivel Type	2.4	19.82	2	21.82	152.05

EIRP = P + G
Where P = Power input to the antenna (mW).
G = Power gain of the antenna (dBi)

The numeric gain (G) of the antenna with a gain specified in dB is determined by:

Antenna	Frequency (GHz)	Antenna Gain (G) (dBi)	Numeric Antenna Gain Log-1(dBm/10) (dB)
WSS002 Series Swivel Type	2.4	2	1.582

$G = Log^{-1}$ (dB antenna gain/10)

Power density at the specific separation:

Antenna	Frequency (GHz)	Power input to the antenna (P) (mW)	Numeric Power Gain of the Antenna (G) (dB)	Maximum Power Spectral Density $S=PG/(4R^2\pi)$ (mW/cm^2)	Maximum Power Spectral Density Limit (mW/cm^2)
WSS002 Series Swivel Type	2.4	95.94	1.582	0.0302	1.00

$S = PG/(4R^2\pi)$
Where

S = Maximum power density (mW/cm^2)
P = Power input to the antenna (mW).
G = Numeric power gain of the antenna
R = Distance to the center of the radiation of the antenna (20cm = limit for MPE)

The maximum permissible exposure (MPE) for the general population is 1mW/cm^2.
The power density at 20cm does not exceed the 1mW/cm^2 limit. Therefore, the exposure condition is compliant with FCC rules.