MPE CALCULATION

FCC ID: SSH-SYNKTX

RF Exposure Requirements:	47 CFR §1.1307(b)
RF Radiation Exposure Limits:	47 CFR §1.1310
RF Radiation Exposure Guidelines:	FCC OST/OET Bulletin Number 65
EUT Frequency Band:	5150-5700MHz
Limits for General Population/Uncontrolled Exposure in the band of:	300 – 1500 GHz
Power Density Limit:	1 mW/ cm^2;

Equation: $S = PG / 4\pi R^2$ or $R = \sqrt{PG / 4\pi S}$

Where, S = Power Density

P = Power Input to Antenna

G = Antenna Gain

R = distance to the center of radiated antenna

EUT has highest combined output power at 5560MHz channel, and since all different operating channels in 5GHz bands has same antenna gain, only the channel with highest power, which is 5560MHz, is evaluated for MPE, as the worst case representative.

Mid Channel: 5560MHz

TX-Chain1: Power = 8.55 dBm, Antenna Gain = 1.9 dBi, Prediction distance 20cm, **S1 = 0.0022 mW/cm^2**

TX-Chain2: Power = 6.27 dBm, Antenna Gain = 1.9 dBi, Prediction distance 20cm, **S2 = 0.0013 mW/cm^2**

TX-Chain3: Power = 10.34 dBm, Antenna Gain = 1.9 dBi, Prediction distance 20cm, **S3 = 0.0033 mW/cm^2**

TX-Chain4: Power = 9.70 dBm, Antenna Gain = 1.9 dBi, Prediction distance 20cm, **S4 = 0.0028 mW/cm^2**

Total S = S1 + S2 +S3 + S4 = 0.0022 mW/cm^2 + 0.0013 mW/cm^2 + 0.0033 mW/cm^2 + 0.0028 mW/cm^2 =0.0096 mW/ cm^2

Result

The Above Result had shown that Device complied with 1 mW/cm^2 Power density requirement for distance of 20cm.

Completed By : David Zhang

Date : Jan 7th, 2013