5/19/2015

Subject: MPE Calulations

Re: FCC ID: 2AEQM-KATALYST

To Whom It May Concern:

The MPE calculations for model Kika Katalyst signal booster were generated for all frequency bands tested which were 700 MHz 800 MHz Band 1700/2100 MHZ Band 1900 MHZ Band All calculations were made for antenna kitted was calculated to show the worst case scenario for both the uplinks/downlinks that will be connected to the signal booster to include exterior and interior antennas. The order of the attached calculations are as follows:

EIRP= Power Out (Watts)*Duty Cycle Percent*Antenna Gain (non□log)*Coax loss (non□log)

The power density (mW/cm^2) is calculated using the following formula:

Calculated Power Density=1000*EIRP (Watts)/(4*π*(Distance from Antenna (cm)^2))

A booster's uplink power must not exceed 1 watt equivalent isotropic radiated power (EIRP) for each band of operation. Composite downlink power must not exceed 0.05 watt EIRP for each band of operation (20.21(e)(8)(i)(D)). The following formul a was used to calculate the equivalent isotropic radiated Power.

Exterior antennas: 1. 700MHz Bands 12,17 model# FY14E-7213 2. 700Mhz Band 13 model# ETB-3162 3.800 MHz Band 5 model# FY14E-7231 4. 1700/2100MH model #FY9E-7231 5. 1900MHz band 25 model# FY9E-7230

Interior antennas: 1. 700MHZ Bands 12,17, model#IPA-8734 2.700MHz Band 13 model#IPA-8734 3. 800MHz Band 5 model# IPA-8734 4. 1700/2100 MHz model# IPA-8734 5. 1900 MHz antenna model# IPA-8734.

Regards,

Ricardo Salguero

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Input Data:					
External Antenna Model Number used for Calculations :	FY14E-7231	ETA-3162	FY14E-7231	FY9E-7230	FY9E-7230
Frequency / Up-Link (MHz.) :	698 - 716	776 - 787	824 - 849	1710 - 1755	1850 - 1910
Maximum Conducted RF Output Power (dBm.):	26.51	25.57	25.25	26.64	25.32
Maximum Conducted RF Output Power (mW.) :	447.713	360.579	334.965	461.318	340.408
Maximum Antenna Gain (dBi.) :	7.22	5.54	5.40	6.97	6.01
Coax Cable Loss (dB.) :	4.97	3.88	5.55	7.91	8.18
Net Antenna Gain (Antenna Gain - Coax Cable Loss (dBi) :	2.25	1.66	-0.15	-0.94	-2.17
Distance from Antenna (cm.) :	20	20	20	20	20
Effects of Ground Reflections Used:	No	No	No	No	No

Results of Calculations:					
Maximum Conducted RF Output Power (mW.) :	447.713	360.579	334.965	461.318	340.408
Net Antenna Gain (Antenna Gain - Coax Cable Loss (dBi) :	2.25	1.66	-0.15	0.94	-2.17
Distance from Antenna (cm. to ft.) :	0.656168	0.656168	0.656168	0.656168	0.656168
FCC Maximum RF Power Density (mW / cm²) :	0.47133	0.52133	0.55733	1.00000	1.00000
Calculated RF Power Density (mW / cm²) :	0.1495	0.1051	0.0644	0.0739	0.0411

Input Data:					
Internal Antenna Model Number used for Calculations :	IPA-8734	IPA-8734	IPA-8734	IPA-8734	IPA-8734
Frequency / Down-Link (MHz.) :	728 - 746	746 - 757	869 - 894	1930 - 1990	2110 - 2155
Maximum Conducted RF Output Power (dBm.):	14.90	15.24	15.44	16.01	11.65
Maximum Conducted RF Output Power (mW.) :	30.903	33.420	34.995	39.902	14.622
Maximum Antenna Gain (dBi.) :	3.28	4.71	5.58	5.76	6.89
Coax Cable Loss (dB.) :	6.41	6.81	7.77	7.91	8.18
Net Antenna Gain (Antenna Gain - Coax Cable Loss (dBi) :	-3.13	-2.10	-2.19	-2.15	-1.29
Distance from Antenna (cm.) :	20	20	20	20	20
Effects of Ground Reflections Used:	No	No	No	No	No

Results of Calculations:					
Maximum Conducted RF Output Power (mW.) :	30.903	33.420	34.995	39.902	14.622
Net Antenna Gain (Antenna Gain - Coax Cable Loss (dBi) :	-3.13	-2.10	-2.19	-2.15	-1.29
Distance from Antenna (cm. to ft.) :	0.656168	0.656168	0.656168	0.656168	0.656168
FCC Maximum RF Power Density (mW / cm²) :	0.4963	0.5063	0.5923	1.0000	1.0000
Calculated RF Power Density (mW / cm²) :	0.0030	0.0041	0.0042	0.0048	0.0022