



# EMC Test Data

Client: TiVo, Inc.	Job Number: J98353
Model: Minos	T-Log Number: T98590
	Project Manager: Irene Rademacher
Contact: Jim Inokuchi	Project Coordinator: -
Standard: FCC Part 15B and C	Class: B

## SAR Exclusion Calculation

### Specific Details

Objective: Evaluate the RF Exposure per requirements of FCC 1.1310, 2.1091, 2.1093 and RSS-102.

Date: 7/2/2015

Engineer: David Bare

### General Notes

Power density calculation (when used) uses the free space transmission formula:

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

Where: S is power density (W/m<sup>2</sup>), P is output power (W), G is antenna gain relative to isotropic, d is separation distance from the transmitting antenna (m).

FCC SAR Exclusion calculation uses the formula:

$$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}]$$

### Summary of Results

Device complies with Power Density requirements at 20cm separation:	Yes
If not, required separation distance (in cm):	-

### Deviations From The Standard

No deviations were made from the requirements of the standard.

Wi-Fi module antenna gain assuming correlated transmissions on the two chains using formula from FCC KDB 662911 D01.

	Gain		
	Ant 1	Ant 2	Effective
2.4 GHz	3.3	3.6	6.4
5 GHz	1.7	3.1	5.4

BT antenna gain is 2.7 dBi



# EMC Test Data

Client: TiVo, Inc.	Job Number: J98353
Model: Minos	T-Log Number: T98590
	Project Manager: Irene Rademacher
Contact: Jim Inokuchi	Project Coordinator: -
Standard: FCC Part 15B and C	Class: B

Use: General

Band		Output Power		Antenna gain (Max)	EIRP		Channels Available	Channels Used	Total EIRP	
		Peak	Average		dBm	W			W	dBm
2425 - 2475	EUT	-	-9.8	2.7	-7.1	0.000	3	1	0.000	-7.1
2402 - 2480	Module	-	14.9	2.7	17.6	0.058	79	1	0.058	17.6
2412 - 2462	Module	-	23.0	6.4	29.4	0.876	11	1	0.876	29.4
Totals:								1	0.934	29.7

Band		Output Power		Antenna gain (Max)	EIRP		Channels Available	Channels Used	Total EIRP	
		Peak	Average		dBm	W			W	dBm
2425 - 2475	EUT	-	-9.8	2.7	-7.1	0.000	3	1	0.000	-7.1
2402 - 2480	Module	-	14.9	2.7	17.6	0.058	79	1	0.058	17.6
5180 -5240	Module	-	21.1	5.4	26.5	0.449	3	1	0.449	26.5
Totals:								3	0.507	27.1

Band		Output Power		Antenna gain (Max)	EIRP		Channels Available	Channels Used	Total EIRP	
		Peak	Average		dBm	W			W	dBm
2425 - 2475	EUT	-	-9.8	2.7	-7.1	0.000	3	1	0.000	-7.1
2402 - 2480	Module	-	14.9	2.7	17.6	0.058	79	1	0.058	17.6
5260 - 5320	Module	-	19.3	5.4	24.7	0.297	3	1	0.297	24.7
Totals:								3	0.355	25.5



# EMC Test Data

Client: TiVo, Inc.	Job Number: J98353
Model: Minos	T-Log Number: T98590
	Project Manager: Irene Rademacher
Contact: Jim Inokuchi	Project Coordinator: -
Standard: FCC Part 15B and C	Class: B

Band		Output Power		Antenna gain (Max)	EIRP		Channels Available	Channels Used	Total EIRP		
		Peak	Average		dBm	W			W	dBm	
2425 - 2475	EUT	-	-9.8	2.7	-7.1	0.000	3	1	0.000	-7.1	
2402 - 2480	Module	-	14.9	2.7	17.6	0.058	79	1	0.058	17.6	
5500 - 5580	Module	-	19.3	5.4	24.7	0.297	3	1	0.297	24.7	
Totals:								3		0.355	25.5

Band		Output Power		Antenna gain (Max)	EIRP		Channels Available	Channels Used	Total EIRP		
		Peak	Average		dBm	W			W	dBm	
2425 - 2475	EUT	-	-9.8	2.7	-7.1	0.000	3	1	0.000	-7.1	
2402 - 2480	Module	-	14.9	2.7	17.6	0.058	79	1	0.058	17.6	
5725 - 5850	Module	-	21.6	5.4	27.0	0.504	5	1	0.504	27.0	
Totals:								3		0.562	27.5

Maximum From Above	Power Density (S) at 20 cm mW/cm <sup>2</sup>	MPE Limit at 20 cm mW/cm <sup>2</sup>	Distance where S <= MPE Limit cm
0.934	0.186	1.000	8.6cm