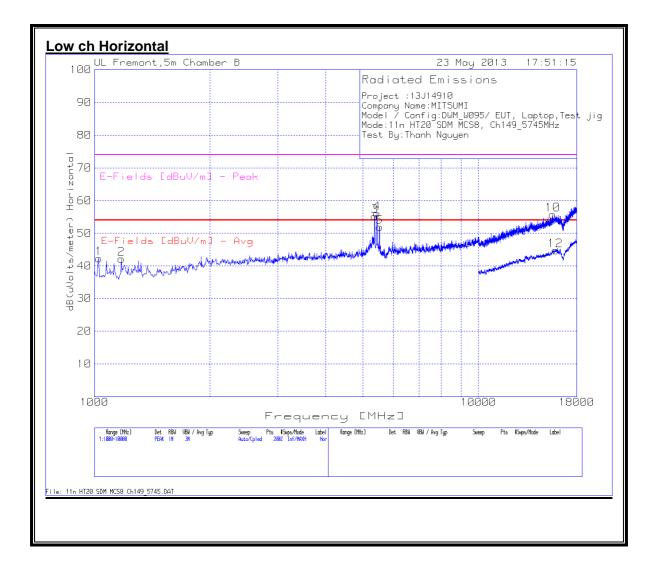
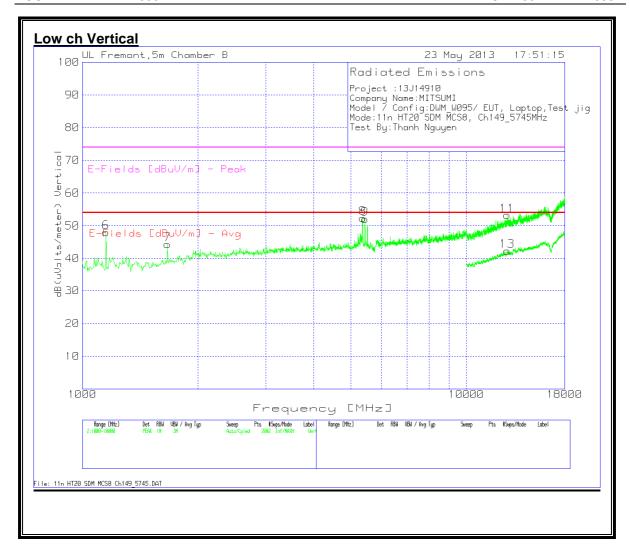
#### High ch data Project :13J14910 Company Name: MITSUMI Model / Config:DWM\_W095/ EUT, Laptop,Test jig Mode:11n HT20 CDD Ch165\_5825MHz Test By:Thanh Nguyen Horizontal 1000 - 10000MHz T345 Ant [dBuV/m] Avg [dBuV/m] Peak (MHz) [dB] 1026.987 47.95 27.5 42.75 53.97 -11.22 -31.25 Horz 43.9 44.48 47.69 31 34.9 34.9 44.1 51.98 -34.9 55.29 53.97 1.32 -18.71 0.1 100 Horz 5524.738 34.9 -34.9 56.41 68.2 -11.79 Horz 5601.199 44.35 35 52.25 -15.95 Vertical 1000 - 10000MHz Mete T345 Ant T145 Prear able Fact T163 BRF [dB] dB(uVolts F-Fields F-Fields ak Mare Height [cm] Polarity Reading (dBuV) Factor [dB/m] dBuV/m] Avg 1076.462 44.52 27.8 -35.9 39.72 53.97 -14.25 -34.28 Vert PK PK PK 28.6 34.9 34.9 3.4 7.5 7.6 1274.363 5443.778 44.11 -35.6 -34.9 0.1 40.61 51.59 68.2 74 -27.59 -22.41 400 53.97 -2.38 5524.738 10 43.94 -34.9 0.1 51.64 68.2 -16.56 Vert Horizontal 10000 - 18000M (MHz) Reading Factor Gain [dB] [dB] meter) [dBuV/m] Margin (dB) [dBuV/m] (dB) (dBuV) [dB/m] Horz 11 12 16388.806 33.66 PK 41.4 -32.5 13.9 0.2 56.66 68.2 -11.54 200 Horz 13 17476.262 34.61 PK 42 -31.6 14.5 0.2 59.71 68.2 -8.49 100 Horz Vertical 10000 - 18000MHz Meter T345 Ant 145 Prean E-Fields ak Margi eight [cm] Polarity [dBuV/m] Avg [dB] [dB/m] 14 12778.611 33.68 39.2 -32.1 12 0.2 52.98 68.2 -15.22 100 Vert 17476.262 33.87 42 14.5 58.97 68.2 100 Vert Horizontal 10000 - 18000MHz T345 Ant T145 Prear able Fac T163 BRF [dB dB(uVolt E-Fields E-Fields ak Marg Height (cm) Polarity [dBuV/m] Avg [dBuV/m] Peak (MHz) Gain [dB] [dB] Margin (dB) (dB) 16 15657.171 22.92 41.2 -32.9 13.5 0.2 44.92 53.97 -29.08 Horz 16332.834 17476.262 13.9 14.5 0.2 68.2 68.2 PK PK 41.4 44.74 18 42 -31.6 50.11 -18.09 Horz Vertical 10000 - 18000MHz Meter Reading (dBuV) T345 An E-Fields dBuV/m] Average Margin (dB) E-Fields dBuV/m] Factor [dB/m] Peak Avg 12742.629 17472.264 23.29 23.93 39.2 42 42.49 68.2 Horizontal 1000 - 10000MH 145 Pream Gain [dB] B(uVolt meter) E-Fields [dBuV/m] ak Margi (dB) t Freque (MHz) Average Margin (dB) [dB] Factor [dB/m] (dBuV) Avg Peak 5453.0507 17.43 34.9 -34.9 7.5 0.1 25.03 53.97 -28.94 139 Horz Vertical 1000 - 10000MHz T345 Ant T145 Prean Cable Fact E-Fields E-Fields eak Margir Height [cm] Polarity dBuV/m] Avg iBuV/m] Peak Reading (dBuV) Factor [dB/m] 5443.9851 12.22 34.9 -34.9 7.5 0.1 19.82 53.97 -34.15 Vert

QP - Quasi-Peak detecto Av - Average detector

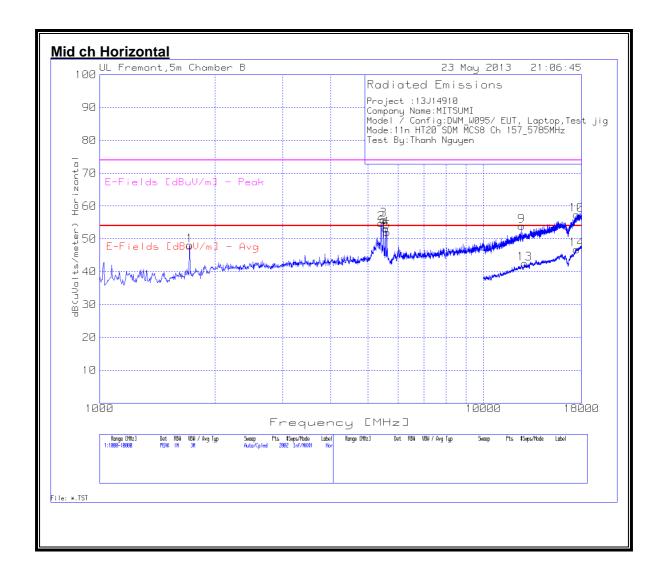
# 9.2.5 TX ABOVE 1 GHz 802.11n HT20 SDM MCS8 MODE, 5.8 GHz BAND

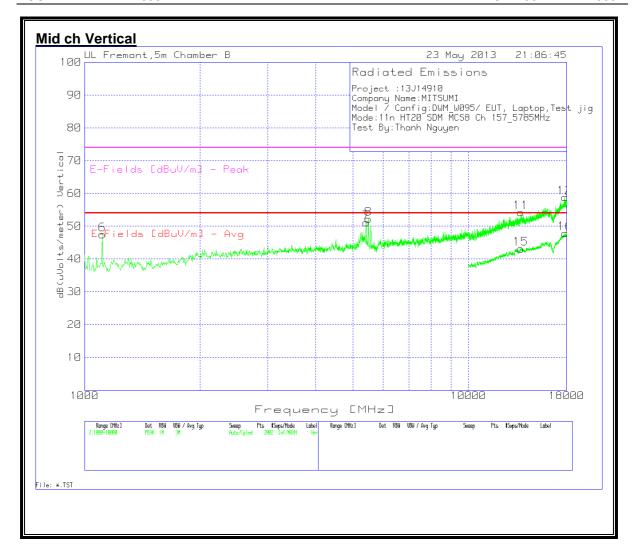
# **HARMONICS AND SPURIOUS EMISSIONS**





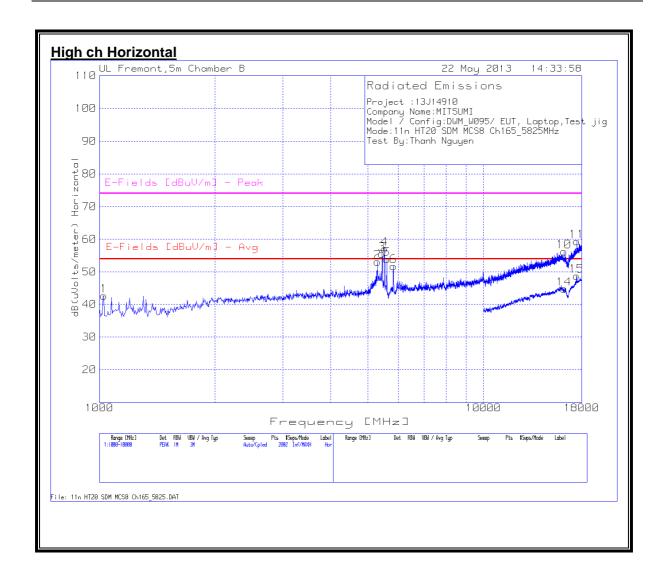
#### <u>OW CHANNEL DA</u>TA Company Name:MITSUMI Model / Config:DWM\_W095/EUT, Laptop,Test jig Mode:11n HT20 SDM MCS8, Ch149\_5745MHz Horizontal 1000 - 10000MHz T345 Ant T145 Prean FCC Part 150 Average Margin FCC Part 15C Peak Margin Height [cm] 15.209 Avg (MHz) Gain [dB] [dB] (dBuV) 53.97 -11.61 1026.98 42.36 -31.64 Horz 1175.412 46.25 28.2 -35.7 42.15 53.97 -11.82 -31.85 47.61 48.48 44.28 34.9 34.9 34.9 5371.814 5448.276 5529.235 -34.9 7.6 51.98 68.2 0.1 -16.22 Horz (145 Pream) Gain [dB] Test Freque (MHz) Average Margin [dB] 15.209 Avg eter) (dBuV) [dB/m] 1152.924 1665.667 5367.316 28.1 29.5 34.9 -25.96 -29.69 -21.6 -35.1 -34.9 -9.66 -1.57 53.97 Vert 5443.778 34.9 -34.9 52.04 53.97 -1.93 -21.96 T345 Ant FCC Part 150 Average Margin FCC Part 15C Peak Margin (MHz) Gain [dB] [dB] eter) 15.209 Avg Peak [dB/m] (dBuV) 33.89 41.1 55.79 -18.21 Vertical 10000 - 18000MHz FCC Part 150 15.209 Avg T345 Ant T145 Pream Gain [dB] [dB] Factor [dB/m] (dBuV) 11 12746.627 34.03 39.2 -32.2 12 0.2 53.23 68.2 -14.97 200 Vert Horizontal 10000 - 18000MHz T345 Ant T145 Preamp Cable Fac FCC Part 150 Average Margin FCC Part 15C Peak Margin Height [cm] Polarity 15.209 Avg (MHz) Readin Gain [dB] [dB] eter) 12 15873.063 -32.9 13.7 44.75 53.97 74 41.4 -9.22 -29.25 100 Horz Vertical 10000 - 18000MHz Average Margin (MHz) Gain [dB] [dB] eter) 15.209 Avg (dBuV) [dB/m] 13 12750.625 -32.2 12 42.36 68.2 Horizontal 1000 - 10000MHz Meter T345 Ant able Fact FCC Part 150 FCC Part 15C Height [cm] Reading (dBuV) Factor [dB/m] 5371.6068 -16.12 Horz 5449.4705 31.44 34.9 -34.9 7.5 39.04 53.97 -14.93 146 Vertical 1000 - 10000MHz Meter T345 Ant FCC Part 15C FCC Part 15C 15.209 Avg (MHz) Gain [dR] [dB] eter) Margin (dBuV) 5370.0111 53.97 Vert 5444.207 22.5 34.9 -34.9 7.5 30.1 53.97 -23.87 110 PK - Peak detector QP - Quasi-Peak detector

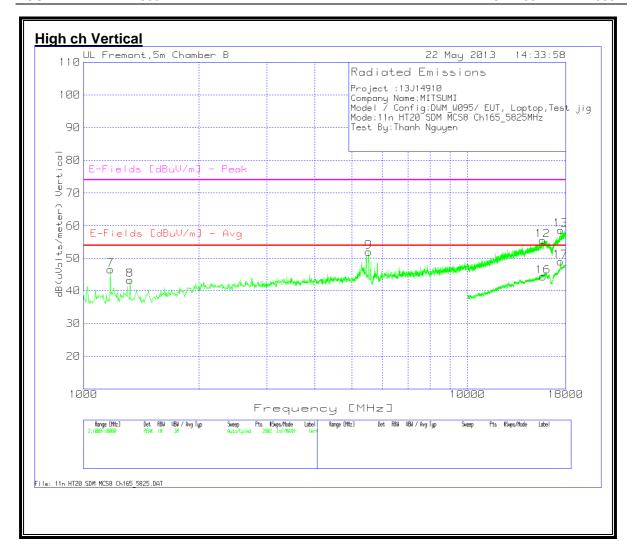




Project 421	HANN		117											
Project :13J														
	ame:MITSUMI													
	nfig:DWM_W09													
Mode:11n H	T20 SDM MCS8	Ch 157_5785	MHz											
Test By:Thai	nh Nguyen													
Horizontal 1	.000 - 10000MHz													
Marker No.	Test	Meter	Detector	T345 Ant	T145	Cable	T163 BRF	dB	FCC Part	Average	FCC Part	Peak	Height	Polarity
	Frequency	Reading		Factor	Preamp	Factor [dB]	[dB]	(uVolts/m	15C 15.209	Margin	15C Peak	Margin	[cm]	
	rrequency	(dBuV)		[dB/m]	Gain [dB]	ractor (ab)	[00]	eter)	Avg		2501 000		[c]	
1	1719.64	49.28	PK	29.9	-35.1	3.9	0.1	48.08	53.97	-5.89	74	-25.92	300	Horz
2	5412.294	47.13	PK	34.9	-34.9	7.5	0.1	54.73	53.97	0.76	74	-19.27	100	Horz
		48.17	PK										100	
3	5488.756			34.9	-34.9	7.6	0.1	55.87	-	-	68.2	-12.33		Horz
4	5565.217	45.41	PK	35	-34.9	7.6	0.1	53.21	-	-	68.2	-14.99	100	Horz
5	5605.697	44.17	PK	35	-34.9	7.7	0.1	52.07	-	-	68.2	-16.13	100	Horz
	0 - 10000MHz													
Marker No.	Test	Meter	Detector	T345 Ant	T145	Cable	T163 BRF	dB	FCC Part	Average	FCC Part	Peak	Height	Polarity
	Frequency	Reading		Factor	Preamp	Factor [dB]	[dB]	(uVolts/m	15C 15.209	Margin	15C Peak	Margin	[cm]	
	•	(dBuV)		[dB/m]	Gain [dB]			eter)	Avg			_		
6	1112.444	51.96	PK	27.9	-35.8	3.3	0.1	47.46	53.97	-6.51	74	-26.54	400	Vert
7	5412.294	43.56	PK	34.9	-34.9	7.5	0.1	51.16	53.97	-2.81	74	-22.84	200	Vert
8	5484.258	44.51	PK	34.9	-34.9	7.6	0.1	52.21	-		68.2	-15.99	200	Vert
	3404.230	44.51	FK	34.3	-54.5	7.0	0.1	52.21			00.2	-15.55	200	Veit
	0000 - 18000MH	-												
Marker No.	Test	Meter	Detector	T345 Ant	T145	Cable	T192 HPF	dB	FCC Part	Average	FCC Part	Peak	Height	Polarity
	Frequency	Reading		Factor	Preamp	Factor [dB]	[dB]	(uVolts/m	15C 15.209	Margin	15C Peak	Margin	[cm]	
		(dBuV)		[dB/m]	Gain [dB]			eter)	Avg					
9	12566.717	35.01	PK	39.2	-32.4	11.9	0.2	53.91	-	-	74	-20.09	100	Horz
10	17484.258	32.11	PK	42	-31.5	14.5	0.2	57.31	-	-	68.2	-10.89	200	Horz
Vertical 100	00 - 18000MHz													
Marker No.	Test	Meter	Detector	T345 Ant	T145	Cable	T192 HPF	dB	FCC Part	Average	FCC Part	Peak	Height	Polarity
warker No.	Frequency	Reading	Detector	Factor	Preamp	Factor [dB]	[dB]	(uVolts/m	15C 15.209	Margin	15C Peak	Margin	[cm]	Polarity
	rrequency	(dBuV)		[dB/m]	Gain [dB]	ractor [ub]	[GB]	eter)	Avg	Iviaigiii	13C FEAR	Iviaigiii	[Cilij	
11	13690.155	34.38	PK	39.1	-32	12.5	0.2	54.18	Avg		68.2	-14.02	200	Vert
12	17820.09		PK			14.7	0.2	58.77	-		74		100	Vert
12	1/820.09	33.07	PK	42.2	-31.4	14.7	0.2	38.77	-	-	/4	-15.23	100	vert
	0000 - 18000MH													
Marker No.	Test	Meter	Detector	T345 Ant	T145	Cable	T192 HPF	dB	FCC Part	Average	FCC Part	Peak	Height	Polarity
	Frequency	Reading		Factor	Preamp	Factor [dB]	[dB]	(uVolts/m	15C 15.209	Margin	15C Peak	Margin	[cm]	
		(dBuV)		[dB/m]	Gain [dB]			eter)	Avg					
13	12798.601	23.21	PK	39.2	-32.1	12	0.2	42.51	-	-	68.2	-25.69	200	Horz
14	17476.262	21.75	PK	42	-31.6	14.5	0.2	46.85	-	-	68.2	-21.35	200	Horz
Vertical 100	00 - 18000MHz													
Marker No.	Test	Meter	Detector	T345 Ant	T145	Cable	T192 HPF	dB	FCC Part	Average	FCC Part	Peak	Height	Polarity
widtker NO.			Detector	Factor	l .		[dB]		15C 15.209	_	15C Peak			Polarity
	Frequency	Reading			Preamp	Factor [dB]	[aB]	(uVolts/m		Margin	15C Peak	Margin	[cm]	
		(dBuV)		[dB/m]	Gain [dB]			eter)	Avg					
15	13686.157	23.4	PK	39.1	-32	12.5	0.2	43.2	-	-	68.2	-25	100	Vert
16	17848.076	22.1	PK	42.2	-31.3	14.7	0.2	47.9	53.97	-6.07	74	-26.1	200	Vert
Horizontal 1	.000 - 10000MHz													
Marker No.	Test	Meter	Detector	T345 Ant	T145	Cable	T163 BRF	dB	FCC Part	Average	FCC Part	Peak	Height	Polarity
	Frequency	Reading		Factor	Preamp	Factor [dB]	[dB]	(uVolts/m	15C 15.209	Margin	15C Peak	Margin	[cm]	
	requeriey	(dBuV)		[dB/m]	Gain [dB]	. actor [ab]	[30]	eter)	Avg	шавш	250 reun		į	
2	5412.0665	<u> </u>	Av		-34.9	7.5	0.1	28.66	53.97	25.24	-		163	Horz
	3412.0665	21.06	AV	34.9	-54.9	7.5	0.1	28.00	55.97	-25.31	-	-	103	HOTZ
	0 - 10000MHz													
Marker No.	Test	Meter	Detector	T345 Ant	T145	Cable	T163 BRF	dB	FCC Part	Average	FCC Part	Peak	Height	Polarit
	Frequency	Reading		Factor	Preamp	Factor [dB]	[dB]	(uVolts/m	15C 15.209	Margin	15C Peak	Margin	[cm]	
		(dBuV)		[dB/m]	Gain [dB]			eter)	Avg					
7	5413.421	20.56	Av	34.9	-34.9	7.5	0.1	28.16	53.97	-25.81	-		116	Vert

QP - Quasi-Peak detector Av - Average detector



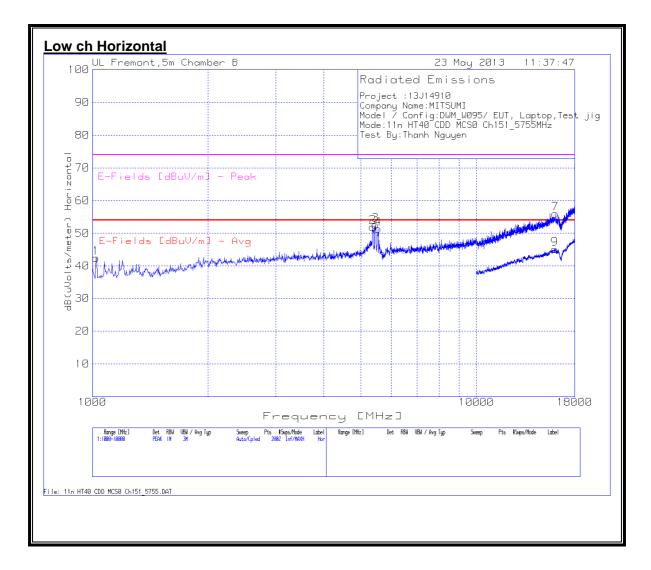


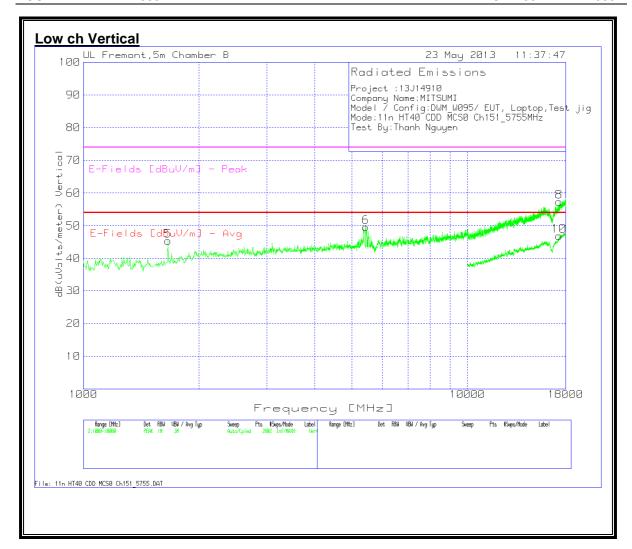
#### **HIGH CHANNEL DATA** Project :13J14910 Company Name:MITSUMI Model / Config:DWM\_W095/ EUT, Laptop,Test jig Mode:11n HT20 SDM MCS8 Ch165\_5825MHz Test By:Thanh Nguyen Horizontal 1000 - 10000MHz Marker Test Meter Detector T345 Ant T145 Cable T163 BRF Corrected E-Fields Margin E-Fields Margin Height Polarity No. Reading [dBuV/m] [dBuV/m] Frequency Factor Preamp Factor [dB] Reading (dB) (dB) [cm] (MHz) (dBuV [dB/m] Gain [dB] [dB] dB(uVolt - Peal /meter) 1026.987 47.75 PK 27.5 -36 3.2 0.1 42.55 53.97 -11.4274 -31.45 100 Horz 5299.85 45.68 34.9 -34.9 7.4 0.1 53.18 68.2 -15.02 100 Horz 5448.276 48 PK 34.9 -34.9 7.5 0.1 55.6 53.97 1.63 74 -18.4 200 Horz 5526.987 49.43 PK 34.9 -34.9 7.6 0.1 57.13 68.2 -11.07 200 Horz 5601.199 46.04 PK 35 -34.9 7.7 53.94 68.2 -14.26 100 Horz 0.1 5830.585 43.35 PK 35.4 -34.9 7.8 0.1 51.75 68.2 -16.45 Horz Vertical 1000 - 10000MHz Detecto T345 Ant T145 T163 BRF Corrected E-Fields Margin E-Fields Margin Height Polarity Reading Factor Facto [dBuV/m] [dBuV/m] [dB] (MHz) (dBuV) [dB/m] Gain [dB] [dB] dB(uVolts - Avg - Peak /meter) 1175.412 50.63 PK 28.2 -35.7 3.3 0.1 46.53 53.97 -7.44 74 -27.47 300 Vert 8 1323,838 46.6 PK 28.5 -35.5 3.5 0.1 43.2 53.97 -10.77 74 -30.8 200 Vert 44.4 34.9 7.6 5529.235 PK -34.9 0.1 52.1 68.2 -16.1 200 Vert Horizontal 10000 - 18000MHz Marker Test Meter Detector T345 Ant T145 Cable T167 HPF Corrected F-Fields Margin E-Fields Margin Height Polarity Reading [dBuV/m] Facto [dB] [dBuV/m] (dB) (dB) No. requenc Reading Factor Preamp [cm] (MHz) Sain [dB dB(uVolt - Avg /meter) 10 16204.898 33.52 PK 41.4 -32.7 13.8 0.2 56.22 68.2 -11.98 200 Horz 17480.26 34.21 PK 42 68.2 400 11 -31.6 14.5 0.2 59.31 -8.89 Horz Vertical 10000 - 18000MHz T167 HPI E-Fields Test Detecto T345 Ant T145 Cable Corrected E-Fields Height Polarity Marker Meter Margin Margir Reading [dBuV/m] (dB) [dBuV/m] - Avg (MHz) (dBuV) [dB/m] Gain [dB] [dB] dB(uVolts - Peak /meter) 15709.145 33.41 PK 41.2 -32.9 13.6 0.2 55.51 -18.49 200 Vert 13 17472.264 33.58 PK 42 -31.6 14.5 0.2 58.68 68.2 -9.52 200 Vert Horizontal 10000 - 18000MHz Meter Detecto T345 An Corrected E-Fields Margin E-Fields Margin Height Polarity Reading Factor Facto [dBuV/m] [dBuV/m] [dB] (dB) (MHz) (dBuV) [dB/m] Gain [dB] [dB] dB(uVolts - Avg - Peak /meter) 16196.902 22.03 PK 41.4 -32.7 13.8 0.2 44.73 53.97 74 -29.27 400 Horz -9.24 15 17472.264 23.73 PK 42 -31.6 14.5 0.2 48.83 68.2 -19.37 100 Horz Vertical 10000 - 18000MHz Margin Meter Detector T345 An T145 Cable T167 HPI Corrected E-Fields E-Fields Height Polarity No. Frequenc Reading Factor Preamp Factor [dB] Reading [dBuV/m] (dB) [dBuV/m] (dB) [cm] (MHz) [dB/m] (dBuV) Gain [dB] [dB] dB(uVolts - Peak - Avg /meter) 16 15717,141 22,21 PK 41.2 -32.9 13.6 0.2 44.31 53.97 -9.66 74 -29,69 300 Vert 17 17472.264 24.01 PK 42 -31.6 14.5 0.2 49.11 68.2 -19.09 100 Vert Horizontal 1000 - 10000MHz Marker Test Meter Detecto T345 Ant T145 Cable T163 BRF Corrected E-Fields Margin E-Fields Margir Height Polarity No. Frequenc Reading Factor Preamp Factor [dB] Reading [dBuV/m] (dB) [dBuV/m] (dB) [cm] [dB/m] ain [dB /meter) 5448.4369 22.18 Αv 34.9 -34.9 7.5 0.1 29.78 53.97 -24.19 153 Horz

PK - Peak detector QP - Quasi-Peak detector Av - Average detector

# 9.2.6 TX ABOVE 1 GHz 802.11n HT40 CDD MCS0 MODE, 5.8 GHz BAND

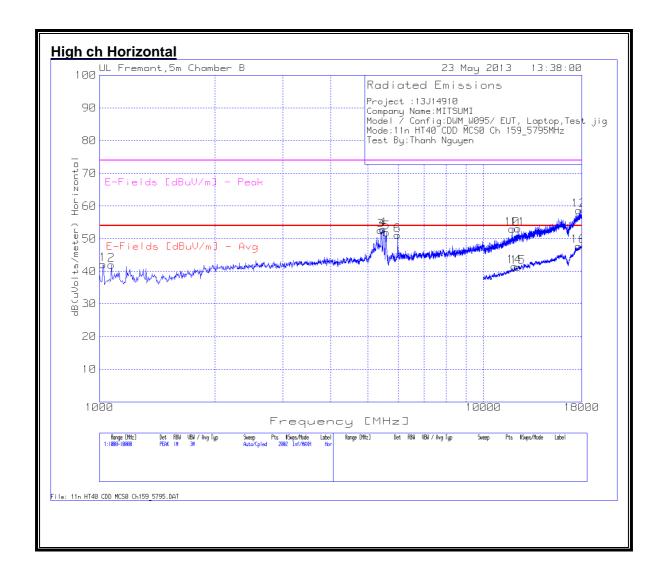
# **HARMONICS AND SPURIOUS EMISSIONS**

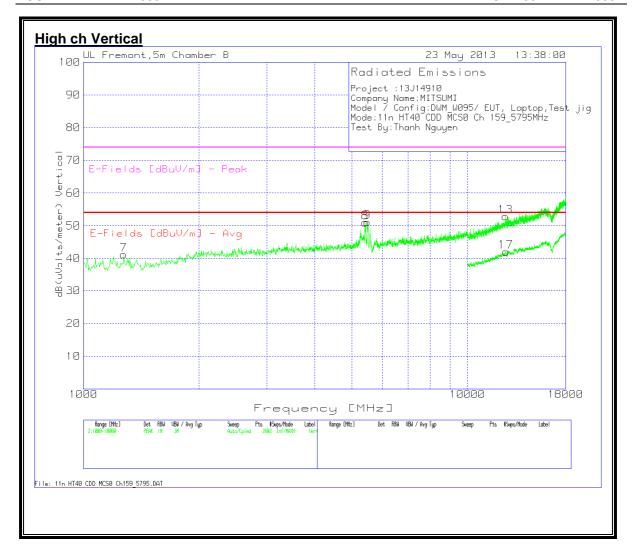




#### **LOW CHANNEL DATA** Project :13J14910 Company Name:MITSUMI Model / Config:DWM W095/EUT, Laptop.Test jig Mode:11n HT40 CDD MCS0 Ch151\_5755MHz Test By:Thanh Nguyer Horizontal 1000 - 10000MHz T345 Ant T145 T163 BR E-Fields E-Fields Test Corrected Margir Margin Height Polarity Reading Frequenc Readin Factor actor [dB] [dB] [dBuV/m] (dB) [dBuV/m] (dB) [cm] Gain [dB] (dBuV) [dB/m] dB(uVolts/ Avg Peak meter) 47.67 1022.489 27.5 3.2 0.1 42.47 53.97 -11.5 74 -31.53 100 Horz 5371.814 Horz -2.07 -22.1 5461.769 44.9 PK 34.9 -34.9 7.6 0.1 52.6 68.2 -15.6 100 Horz 5547.226 43.59 35 -34.9 7.6 0.1 51.39 68.2 -16.81 100 Horz Vertical 1000 - 10000MH Mete T345 Ant T145 Corrected E-Fields Polarity Frequency Reading Factor actor [dB] [dB] Reading [dBuV/m] (dB) [dBuV/m] (dB) [cm] [dB/m] dB(uVolts/ Avg meter) 1661.169 47.09 29.4 -35.1 45.39 53.97 -28.61 100 3.9 0.1 -8.58 Vert 5434.783 42.03 PK 34.9 -34.9 7.5 0.1 49.63 53.97 -4.34 74 -24.37 200 Vert Marker No Test Meter Detector T345 Ant T145 Cable T167 HP Corrected E-Fields Margir E-Fields Margin Height Polarity Frequency [dB] [dBuV/m] (dB) [dBuV/m] (dB) [cm] (dBuV) [dB/m] Gain [dB] dB(uVolts/ Avg Peak meter) 16036.982 33.27 PK 41.6 -32.9 13.8 0.2 55.97 74 -18.03 100 Horz Vertical 10000 - 18000MH Marker No Test Meter Detector T345 Ant T145 Cable T167 HPF Corrected E-Fields E-Fields Margin Height Polarity Frequency Factor [dB] Reading [dBuV/m] (dB) [dBuV/m] (dB) Preamp [cm] (dBuV) [dB/m] Gain [dB] dB(uVolts/ Avg Peak meter) 17324.338 32.52 PK 41.7 -31.6 14.5 0.2 68.2 -10.88 100 Vert Horizontal 10000 - 18000MHz Meter Detector T345 Ant T145 Cable T167 HPF Corrected F-Fields F-Fields Margin Height Polarity [dBuV/m] Frequency [dBuV/m] Factor [dB] Reading (dB) (dB) Preamp actor [dB] [cm] [dB/m] Gain [dB] dB(uVolts/ Peak meter) 16004.998 22.59 PK 41.6 13.7 45.19 53.97 -8.78 74 -28.81 -32.9 0.2 200 Horz Vertical 10000 - 18000MH Detecto T345 An T145 Cable T167 HP Corrected E-Fields E-Fields Height Polarity Frequency [dBuV/m] [dBuV/m] Factor Preamp actor [dB] [dB] Reading (dB) (dB) [cm] Avg [dB/m] Gain [dB] dB(uVolts/ meter) 17316.342 46.89 22.09 -31.6 14.5 0.2 68.2 -21.31 100 Vert Horizontal 1000 - 10000N Test Meter Detecto T345 An T145 Cable T163 BR Corrected E-Fields E-Fields Polarity [dBuV/m] Frequency Factor Preamp actor [dB] [dB] Reading [dBuV/m] (dB) (dB) [cm] [dB/m] Gain [dB] dB(uVolts/ Avg meter) 5372.762 31.28 Αv 34.9 -34.9 7.5 38.88 53.97 -15.09 143 Horz 0.1 Vertical 1000 - 10000MHz T345 An E-Fields Frequency Readin Factor Preamp actor [dB] [dB] Reading [dBuV/m] (dB) [dBuV/m] (dB) [cm] [dB/m] dB(uVolts/ (dBuV) Avg meter) 36.53 5444.342 28.93 34.9 -34.9 7.5 53.97 -17.44 Αv 0.1 164 Vert

PK - Peak detector Av - Average detector

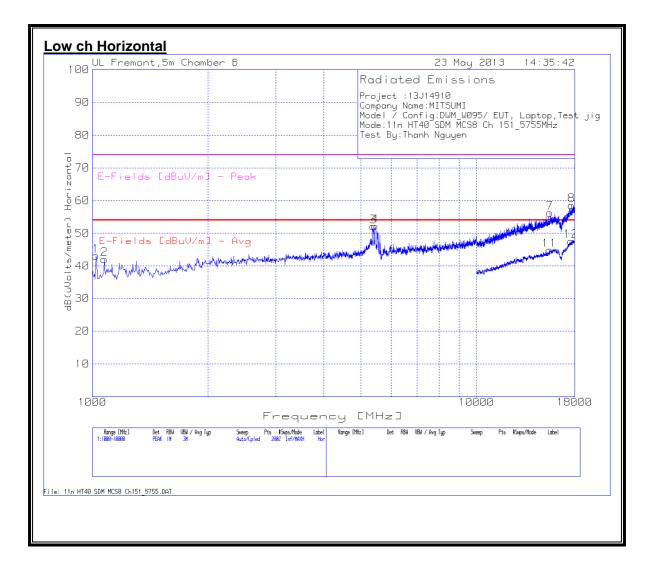


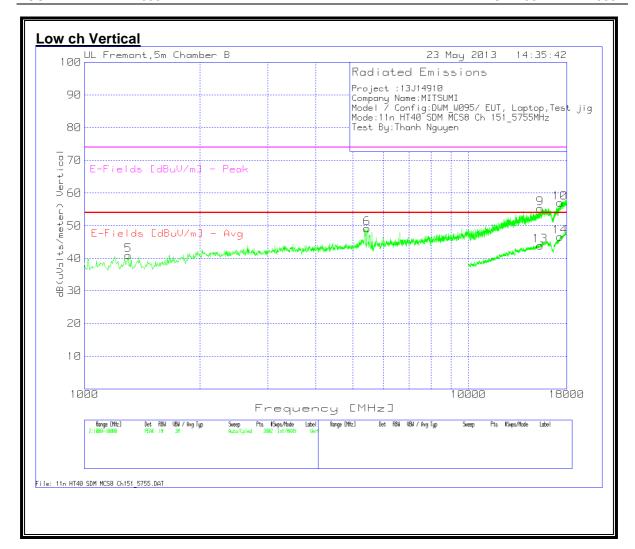


#### **HIGH CHANNEL DATA** Company Name:MITSUMI Model / Config:DWM\_W095/ EUT, Laptop,Test jig Mode:11n HT40 CDD MCS0 Ch 159\_5795MHz Test By:Thanh Nguyer Marker No. Test Freque (MHz) Meter Reading (dBuV) T345 Ant Factor [dB/m] 1022.489 47.39 -34.9 35 35.8 0.1 68.2 -16.32 Horz 5979.01 42.29 -34.9 0.1 51.19 68.2 -17.01 T345 Ant Factor [dB/m] E-Fields BuV/m] - # (145 Pream Gain (dB) t Freque (MHz) eading(d V) B(uVolts/ 44.68 43.36 43.39 28.6 34.9 34.9 41.18 50.96 51.09 -35.6 -34.9 -34.9 -27.02 -23.04 -17.11 53.97 -3.01 Horizontal 10000 - 18000MHz Meter T345 Ant T167 HPF [dR] Corrected E-Fields F-Fields Margin (dB) eter) 11863.068 35.58 39.1 -33.4 11.5 0.2 52.98 -21.02 200 Horz 11 12282.859 11.7 12 17732.134 33.02 42.2 -31.4 14.7 0.2 58.72 -15.28 E-Fields E-Fields (MHz) Factor [dB/m] Gain [dB] [dB] uV/m] - A V) dB(uVolts/ 13 12554.723 34.02 39.2 -32.5 11.9 74 -21.18 100 Horizontal 10000 - 18000MHz T345 Ant T145 Prea E-Fields Margin (dB) E-Fields Margin (dB) Height [cm] (MHz) Factor [dB/m] Gain [dB] [dB] Reading BuV/m] - A uV/m] - Pe 23.81 39.2 41.51 12018.991 -33.3 11.6 0.2 53.97 -12.46 -32.49 100 Horz 12278.861 23.15 -32.9 11.7 0.2 41.35 53.97 -12.62 Horz 16 17668.166 22.27 42.1 -31.4 14.6 47.77 53.97 -26.23 Horz Corrected Reading Aargin (dB) (MHz) teading(d V) Factor [dB/m] Gain [dB] [dB] BuV/m] - Av BuV/m] - Pe B(uVolts/ 17 12574.713 23.13 39.2 -32.4 11.9 53.97 -11.94 74 -31.97 Horizontal 1000 - 10000MHz T345 Ant T145 Preami able Factor T163 BRF [dB] Corrected E-Fields Margin (dB) E-Fields Margin (dB) Height [cm] Polarity Reading B(uVolts/ Gain [dB] [dB] uV/m] - A uV/m] - Pea eter) 5403.4223 28.05 34.9 53.97 -18.32 137 -34.9 7.5 35.65 Horz Vertical 1000 - 10000MHz Corrected Reading IB(uVolts/r E-Fields BuV/m] - Av E-Fields uV/m] - Pe eter) 5414,7553 20.77 34.9 -34.9 28.37 53.97 -25.6 292 Vert QP - Quasi-Peak detector Av - Average detecto

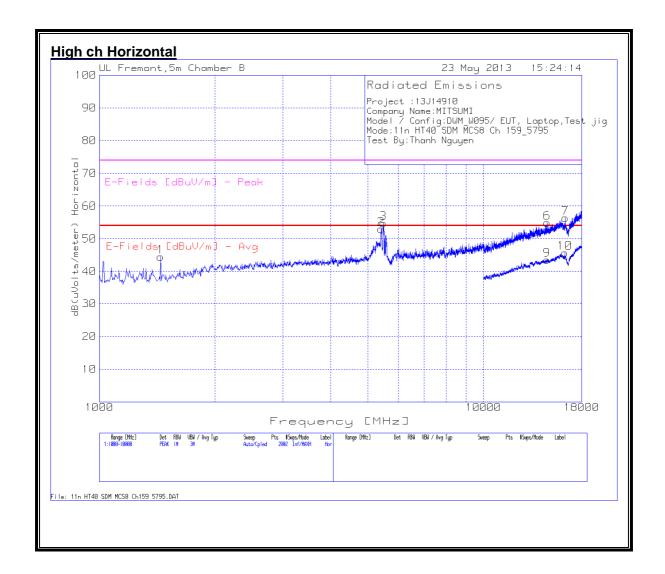
# 9.2.7 TX ABOVE 1 GHz 802.11n HT40 SDM MCS8 MODE, 5.8 GHz BAND

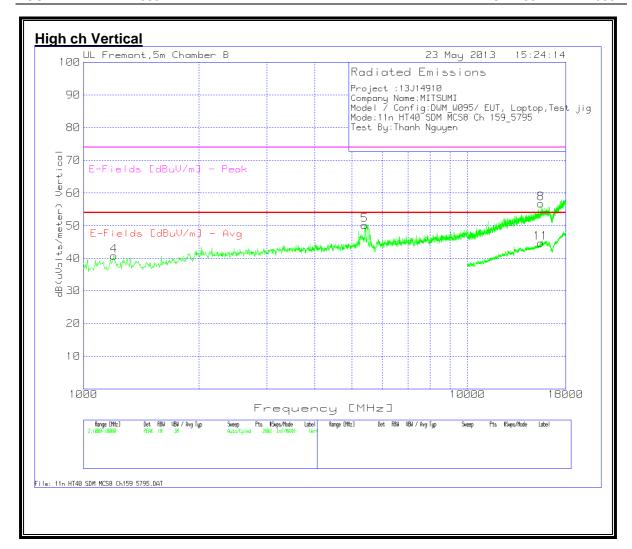
# **HARMONICS AND SPURIOUS EMISSIONS**





#### <u>OW CHANN</u>EL DATA Project :13J14910 Company Name:MITSUMI Model / Config:DWM\_W095/ EUT, Laptop,Test jig Mode:11n HT40 SDM MCS8 Ch 151\_5755MHz Test By:Thanh Nguyen Horizontal 1000 - 10000MHz T345 An T145 Prea [dBuV/m] dBuV/m1 (dB) B(uVolts/ eter) 1022.489 48.29 27.5 43.09 53.97 30.91 Horz 46.82 44.54 44.61 PK PK PK -31.98 -21.86 42.02 52.14 53.97 53.97 -11.95 -1.83 0.1 5385.307 5448.276 Horz 34.9 -34.9 7.5 0.1 52.21 53.97 -1.76 -21.79 Horz (MHz) Margin (dB) Gain [dB] [dB] Reading [dBuV/m] [dBuV/m] (dB) (dBuV) [dB/m] dB(uVolts/ Avg Peak 44.32 -13.05 Vert PK 5448.276 41.64 34.9 -34.9 7.5 0.1 49.24 53.97 -4.7374 -24.76 200 Vert E-Field (MHz) Factor [dB/m] Gain [dB] [dB] Reading [dBuV/m] Margin (dB) [dBuV/m] (dB) (dBuV) B(uVolts/ Peak eter) 15513.243 Horz 17700.15 32.93 42.2 -31.4 14.7 58.63 -15.37 Horz T345 Ant E-Field Reading IB(uVolts/ Margin (dB) (MHz) Gain [dB] [dB] [dBuV/m] [dBuV/m] (dB) [dB/m] Peak eter) 34.03 15369.315 Vert 10 17300.35 32.42 PK 41.7 -31.7 14.4 57.02 68.2 -11.18 T345 An E-Field (MHz) Factor Gain [dB] [dB] Reading [dBuV/m] Margin (dB) [dBuV/m] (dB) (dBuV) Peak eter) 44.84 15501.249 23.14 53.97 11 40.9 -32.9 13.5 -9.13 -29.16 Horz 12 17648.176 22.18 42.1 -31.5 14.6 47.58 68.2 -20.62 Test Frequ T345 Ant T145 Pream E-Fields E-Fields Height [cm] Reading IB(uVolts/ eter) (MHz) Gain [dB] [dB] [dBuV/m] Margin (dB) [dBuV/m] (dB) 13 15357.321 22.61 -32.9 43.91 53.97 -10.06 Vert 14 17316.342 21.86 PK 41.7 -31.6 14.5 46.66 68.2 -21.54 200 Horizontal 1000 - 10000MHz Meter T345 Ant Corrected E-Fields E-Fields eak Marg Height [cm] (MHz) Factor [dB/m] Gain [dB] [dB] [dRuV/m] [dRuV/m] (dB) eter) 5383.889 22.54 34.9 -34.9 53.97 -23.83 362 Horz 5447.326 21.33 34.9 -34.9 0.1 28.93 53.97 -25.04 222 Vertical 1000 - 10000MHz Test Freque (MHz) T345 Ant T145 Pream T163 BRF [dB] Corrected E-Fields E-Fields eak Marg Height [cm] Polarity Reading B(uVolts/ Avg eter) 5449.526 21.25 34.9 -34.9 28.85 53.97 -25.12 270 Vert PK - Peak detecto QP - Quasi-Peak detector Av - Average detector





Processing   Pro	HIGH	CHAN	NEL D	ATA											
Company Manager   Conf.   Co			ILL D	<u> </u>											
Mode   ConfigUNM   Work   Cut   Lipsch   Cut   Substitution   Su															
Mode:Tan Part   SOMM MCSK (2) 159,5795			JT, Laptop,Test jig												
Notice															
Marker No.   Test Frequency   Meter Reading   Control   Test	Test By:Thanh	Nguyen	-												
Marker No.   Nest Frequency   Meter Reading   Meter Reading		•													
Marker No.   Gebardy   Gebardy   Factor   Gain [dill]	Horizontal 100	0 - 10000MHz													
1   1463-277   77.75   PK   23   3-53,3   3.6   0.1   44.45     68.2   2-25.5   100   Hor.	Marker No.	Test Frequency	Meter Reading	Detector	T345 Ant	T145 Preamp	Cable Factor	T163 BRF [dB]	dB(uVolts/m	E-Fields	Average	E-Fields	Peak Margin	Height [cm]	Polarit
1   1445.277   47.75   PK   28.3   -35.3   3.6   0.1   44.85   -   -   68.2   -22.55   100   1907   3   5479.76   47.1   PK   34.9   34.9   34.9   7.5   0.1   53.08   53.97   -0.39   74   -20.29   100   1907   3   5479.76   47.1   PK   34.9   34.9   34.9   7.5   0.1   55.88   -     -     -     66.2   -19.2   100   1907   Wertical 1009 - 100000MHz   Wertical 10000 - 1000000MHz   Wertical 10000 - 100000MHz   Wertical 10000 - 1000000MHz   Wertical 10000 - 10000000MHz   Wertical 10000 - 10000000MHz   Wertical 10000 - 100000000000000000000000000000		(MHz)	(dBuV)		Factor	Gain [dB]	[dB]		eter)	[dBuV/m] -	Margin (dB)	[dBuV/m] -	(dB)		
2					[dB/m]					Avg		Peak			
3   5479.76   47.1   PK   34.9   7.6   0.1   54.8	1	1445.277	47.75	PK	28.3	-35.3	3.6	0.1	44.45		-	68.2	-29.55	100	Horz
Marken No.   Text Frequency (Mint)   Meter Reading (Mint)   Meter	2	5412.294	45.48	PK	34.9	-34.9	7.5	0.1	53.08	53.97	-0.89	74	-20.92	100	Horz
Marker No.   Test Frequency   Meter Reading   Callbury   Factor   Callbury   Callbury	3	5479.76	47.1	PK	34.9	-34.9	7.6	0.1	54.8		-	68.2	-19.2	100	Horz
Marker No.   Test Frequency   Meter Reading   Callbury   Factor   Callbury   Callbury															
Chief   Chie	Vertical 1000 -	10000MHz													
	Marker No.	Test Frequency	Meter Reading	Detector	T345 Ant	T145 Preamp	Cable Factor	T163 BRF [dB]	dB(uVolts/m	E-Fields	Average	E-Fields	Peak Margin	Height [cm]	Polarit
4   1202.399		(MHz)	(dBuV)		Factor	Gain [dB]	[dB]		eter)	[dBuV/m] -	Margin (dB)	[dBuV/m] -	(dB)		
S															
Height [m]   Polar										53.97	-13.17		-33.2	100	Vert
Marker No.   Test Frequency (MRtz)   Meter Reading (dBuV)   Meter Reading (dBuV)   Margin (d	5	5403.298	42.57	PK	34.9	-34.9	7.5	0.1	50.17	53.97	-3.8	74	-23.83	200	Vert
Marker No.   Test Frequency (MRtz)   Meter Reading (dBuV)   Meter Reading (dBuV)   Margin (d															
Marker No.   Test Frequency (MHz)   Meter Reading (MHz)   Meter															
Company   Comp	Marker No.	Test Frequency	Meter Reading	Detector	T345 Ant	T145 Preamp	Cable Factor	T163 BRF [dB]	dB(uVolts/m	l .	Average	1	Peak Margin	Height [cm]	Polarit
6		(MHz)	(dBuV)			Gain [dB]	[dB]		eter)	[dBuV/m] -	Margin (dB)	[dBuV/m] -	(dB)		
Tissue					[dB/m]					Avg		Peak			
Vertical 10000 - 18000MHz															Horz
Marker No.   Test Frequency (MHz)   Meter Reading (dBuV)   Meter Reading (dBuV)   Margin (dB	7	16332.834	33.55	PK	41.4	-32.6	13.9	0.2	56.45		-	68.2	-17.55	200	Horz
Marker No.   Test Frequency (MHz)   Meter Reading (dBuV)   Meter Reading (dBuV)   Margin (dB															
Margin (dB   GBuV/m]		- 18000MHz													
Barrier   Barr	Marker No.			Detector				T163 BRF [dB]					1 -	Height [cm]	Polarit
S		(MHz)	(dBuV)			Gain [dB]	[dB]		eter)		Margin (dB)		(dB)		
Horizontal 10000-18000MHz															
Marker No.   Test Frequency (MHz)   Meter Reading (BuV)   Meter	8	15513.243	35.17	PK	40.9	-32.9	13.5	0.2	56.87	-	-	74	-17.13	200	Vert
Marker No.   Test Frequency (MHz)   Meter Reading (BuV)   Meter															
Margin (dB   Margin (dB   GBuV/m] - Margin															
Section   Peak   Peak	Marker No.			Detector				T163 BRF [dB]	dB(uVolts/m	l .				Height [cm]	Polarit
9 14625.687 23.19 PK 39.8 -32.7 13 0.2 43.49 68.2 -30.51 200 Hor.  10 16300.85 22.85 PK 41.4 -32.6 13.9 0.2 45.75 68.2 -28.25 100 Hor.  Vertical 10000 - 18000MHz  Marker No.   Test Frequency (MHz)   Gain [dB] (dB/m)   Factor (dB/m)   Peak    11 15505.247 23.01 PK 40.9 -32.9 13.5 0.2 44.71 53.97 -9.26 74 -29.29 100 Vertical 1000 - 10000MHz  Marker No.   Test Frequency (MHz)   Meter Reading (dBwv)   Detector (dB/m)   Factor (dB/m)    12 5412.2983 13.04 Av 34.9 -34.9 7.5 0.1 20.64 53.97 -33.33 30.4 Hor.  Vertical 1000 - 10000MHz  Marker No.   Test Frequency (MHz)   Meter Reading (dBwv)   Detector (dB/m)   Factor (dB/m)    13 55 61		(MHz)	(dBuV)			Gain [dB]	[dB]		eter)	[dBuV/m] -	Margin (dB)	[dBuV/m] -	(dB)		
10															
Vertical 10000 - 18000MHz											-				Horz
Marker No.   Test Frequency (MHz)   Meter Reading (BuV)   Meter	10	16300.85	22.85	PK	41.4	-32.6	13.9	0.2	45.75			68.2	-28.25	100	Horz
Marker No.   Test Frequency (MHz)   Meter Reading (BuV)   Meter															
Margin (dB   Margin (dB ) Mar															
IdB/m	Marker No.			Detector	I			T163 BRF [dB]				1		Height [cm]	Polarit
11   15505.247   23.01   PK   40.9   -32.9   13.5   0.2   44.71   53.97   -9.26   74   -29.29   100   Verthorizontal 1000-10000MHz   Factor [dB/m]   Factor		(MHz)	(dBuV)		I	Gain [dB]	[dB]		eter)	[dBuV/m] -	Margin (dB)		(dB)		
Horizontal 1000 - 10000MHz															
Marker No.   Test Frequency (MHz)   Meter Reading (dBuV)   Meter Reading (dBuV)   Factor (dBuV)   Factor (dBur)   Factor (dB	11	15505.247	23.01	PK	40.9	-32.9	13.5	0.2	44.71	53.97	-9.26	74	-29.29	100	Vert
Marker No.   Test Frequency (MHz)   Meter Reading (dBuV)   Meter Reading (dBuV)   Factor (dBuV)   Factor (dBur)   Factor (dB															
Margin (dB   Mar		0 - 10000MHz													
Column   C	Marker No.		_	Detector			l .	T163 BRF [dB]	dB(uVolts/m		_			Height [cm]	Polarit
2 5412.2983 13.04 Av 34.9 -34.9 7.5 0.1 20.64 53.97 -33.33 304 Hor.  Vertical 1000 - 10000MHz  Marker No.   Test Frequency   Meter Reading   Detector   T345 Ant   T145 Preamp   Cable Factor   T163 BRF [dB]   dB(uVolts/m   E-Fields   Margin (dB)   E-Fields   Margin (dB)   Height [cm]   Polari		(MHz)	(dBuV)		I	Gain [dB]	[dB]		eter)	[dBuV/m] -	Margin (dB)		(dB)		
Vertical 1000 - 10000MHz  Marker No. Test Frequency Meter Reading Detector T345 Ant T145 Preamp Cable Factor T163 BRF [dB] dB(uVolts/m E-Fields Margin (dB) E-Fields Margin (dB) Height [cm] Polari												Peak			
Marker No.   Test Frequency   Meter Reading   Detector   T345 Ant   T145 Preamp   Cable Factor   T163 BRF [d8]   d8[uVolts/m   E-Fields   Margin (d8)   E-Fields   Margin (d8)   Height [cm]   Polari	2	5412.2983	13.04	Av	34.9	-34.9	7.5	0.1	20.64	53.97	-33.33	-	-	304	Horz
Marker No.   Test Frequency   Meter Reading   Detector   T345 Ant   T145 Preamp   Cable Factor   T163 BRF [d8]   d8[uVolts/m   E-Fields   Margin (d8)   E-Fields   Margin (d8)   Height [cm]   Polari															
	Vertical 1000 -	10000MHz													
(MHz)   (dBuV)   Factor   Gain (dB]   [dB]   eter)   [dBuV/m] -   [dBuV/m] -	Marker No.	Test Frequency	Meter Reading	Detector	T345 Ant	T145 Preamp	Cable Factor	T163 BRF [dB]	dB(uVolts/m	E-Fields	Margin (dB)	E-Fields	Margin (dB)	Height [cm]	Polarit
		(MHz)	(dBuV)		Factor	Gain [dB]	[dB]		eter)	[dBuV/m] -		[dBuV/m] -			

PK - Peak detector

QP - Quasi-Peak detector

5403.8379

11.27

[dB/m]

-34.9

7.5

18.87

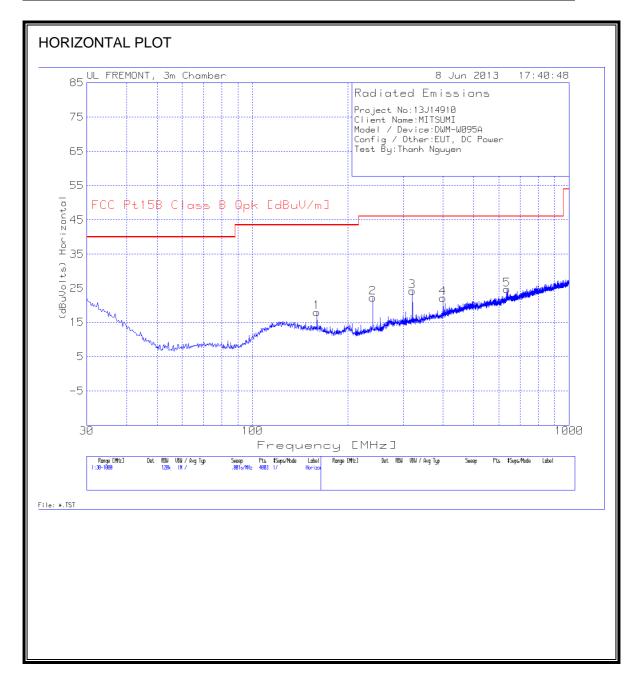
Avg 53.97

Av - Average detector

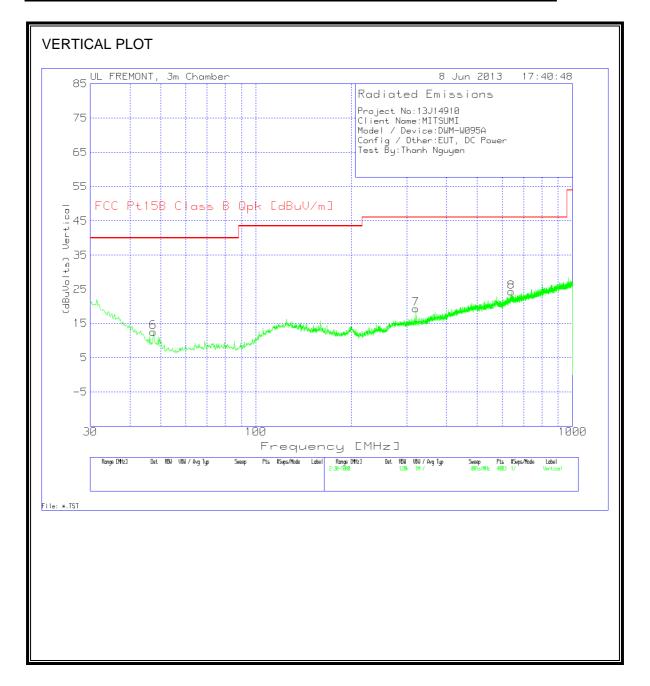
Vert

# 9.3. WORST-CASE BELOW 1 GHz

## SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)



#### SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, VERTICAL)



her:EUT, DO										
Test Frequency	Meter Reading	Detector	Antenna T185	3m Loop	DC Corr [dB]	(dBuVolts)	FCC Pt15B Class B Qpk [dBuV/m]	Margin (dB)	Height [cm]	Polarity
		DV	12.2	26.2	0.1	17.02	42.52	25.50	201	Llows
			-							Horz
635.311			19.6	-25.3	0.1	24.73	46.02	-21.29		Horz
- 1000MHz										
47.4469	30.65	PK	9	-27.3	0.1	12.45	40	-27.55	99	Vert
320.055	30.59	PK	13.8	-25.2	0.1	19.29	46.02	-26.73	249	Vert
639.4304	29.73	PK	19.7	-25.3	0.1	24.23	46.02	-21.79	99	Vert
-	Test Frequency 30 - 1000Mi 159.8826 239.8476 320.055 400.02 635.311 - 1000MHz 47.4469 320.055	Reading   Reading	Test Reading Detector Reading SO - 1000MHz 159.8826 31.83 PK 239.8476 36.03 PK 400.02 32.26 PK 635.311 30.33 PK - 1000MHz 47.4469 30.65 PK 320.055 30.59 PK	Test Meter Reading Detector Antenna T185  30 - 1000MHz  159.8826 31.83 PK 12.2 239.8476 36.03 PK 11.6 320.055 35.44 PK 13.8 400.02 32.26 PK 15.4 635.311 30.33 PK 19.6  - 1000MHz  47.4469 30.65 PK 9 320.055 30.59 PK 13.8	Test Reading Detector Antenna 3m Loop T185  30 - 1000MHz  159.8826 31.83 PK 12.2 -26.2 239.8476 36.03 PK 11.6 -25.5 320.055 35.44 PK 13.8 -25.2 400.02 32.26 PK 15.4 -25.7 635.311 30.33 PK 19.6 -25.3  - 1000MHz  47.4469 30.65 PK 9 -27.3 320.055 30.59 PK 13.8 -25.2	Test Reading Detector Antenna 3m Loop DC Corr [dB]  30 - 1000MHz  159.8826 31.83 PK 12.2 -26.2 0.1 239.8476 36.03 PK 11.6 -25.5 0.1 320.055 35.44 PK 13.8 -25.2 0.1 400.02 32.26 PK 15.4 -25.7 0.1 635.311 30.33 PK 19.6 -25.3 0.1  - 1000MHz  47.4469 30.65 PK 9 -27.3 0.1 320.055 30.59 PK 13.8 -25.2 0.1	Test Reading Detector Antenna T185 T185 T185 T185 T185 T185 T185 T185	Test Reading Prequency Reading Process Antenna T185 Process B Qpk [dBuV/m]  30 - 1000MHz  159.8826 31.83 PK 12.2 -26.2 0.1 17.93 43.52 239.8476 36.03 PK 11.6 -25.5 0.1 22.23 46.02 320.055 35.44 PK 13.8 -25.2 0.1 24.14 46.02 400.02 32.26 PK 15.4 -25.7 0.1 22.06 46.02 635.311 30.33 PK 19.6 -25.3 0.1 24.73 46.02 -1000MHz  47.4469 30.65 PK 9 -27.3 0.1 12.45 40 320.055 30.59 PK 13.8 -25.2 0.1 19.29 46.02	Test Reading R	Test Reading R

# 10. AC POWER LINE CONDUCTED EMISSIONS

### **LIMITS**

FCC §15.207 (a)

RSS-Gen 7.2.2

Frequency of Emission (MHz)	Conducted I	Limit (dBuV)
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

Decreases with the logarithm of the frequency.

## **TEST PROCEDURE**

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.4.

The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both NEUTRAL and HOT lines.

DATE: JULY 10, 2013

IC: 4250A-DWMW095A

REPORT NO: 13J14910-5 DATE: JULY 10, 2013 FCC ID: EW4DWMW095A IC: 4250A-DWMW095A

#### **RESULTS**

#### **6 WORST EMISSIONS**

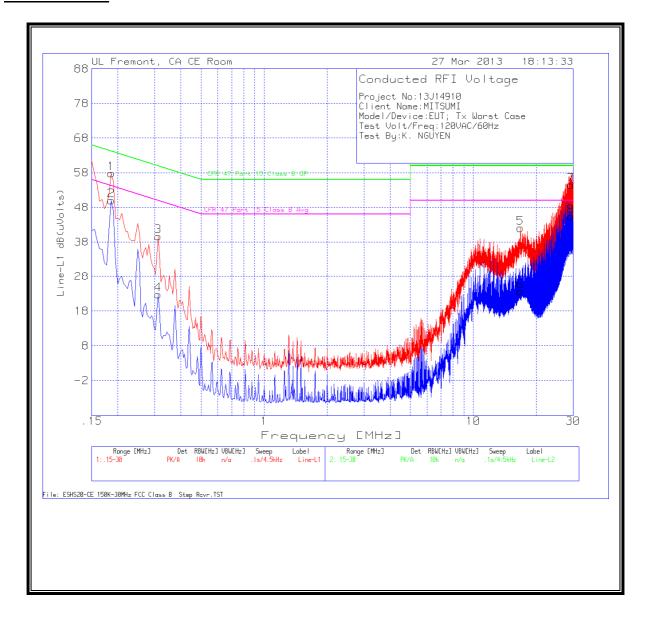
Project No:13J14910 Client Name:MITSUMI

Model/Device:EUT; Tx Worst Case Test Volt/Freq: 120VAC/60Hz

Test By: K. NGUYEN Line-L1.15 - 30MHz

Line-LI .15 -	SUIVIHZ								
						CFR 47		CFR 47	
						Part 15		Part 15	
Test	Meter		T24 IL	LC Cables		Class B		Class B	
Frequency	Reading	Detector	L1.TXT (dB)	(dB)	dB(uVolts)	QP	Margin	Avg	Margin
0.186	57.75	PK	0.1	0	57.85	64.2	-6.35	-	-
0.186	49.88	Av	0.1	0	49.98	-	-	54.2	-4.22
0.312	39.52	PK	0.1	0	39.62	59.9	-20.28	1-	-
0.312	22.68	Av	0.1	0	22.78	-	-	49.9	-27.12
16.8135	41.62	PK	0.2	0.2	42.02	60	-17.98	1-	-
16.8135	23.21	Av	0.2	0.2	23.61	-	-	50	-26.39
29.3325	53.71	PK	0.5	0.3	54.51	60	-5.49	-	-
29.3325	44.56	Av	0.5	0.3	45.36	-	-	50	-4.64
Line-L2 .15 -	30MHz								
						CFR 47		CFR 47	
						Part 15		Part 15	
Test	Meter		T24 IL	LC Cables		Class B		Class B	
Frequency	Reading	Detector	L2.TXT (dB)	(dB)	dB(uVolts)	QP	Margin	Avg	Margin
0.186	56.96	PK	0.1	0	57.06	64.2	-7.14	-	-
0.186	52.72	Av	0.1	0	52.82	¥7	-	54.2	-1.38
0.312	36.34	PK	0.1	0	36.44	59.9	-23.46	-	-
0.312	30.58	Av	0.1	0	30.68	-	-	49.9	-19.22
16.818	38.56	PK	0.2	0.2	38.96	60	-21.04	-	-
16.818	22.94	Av	0.2	0.2	23.34	-	-	50	-26.66
29.454	50.58	PK	0.5	0.3	51.38	60	-8.62	-	-
50 cec 1	32 33		1219	12/12/	22.12			25	11 22

### **LINE 1 RESULTS**



### **LINE 2 RESULTS**

