7.4. POWER SPECTRAL DENSITY

LIMITS

FCC Part15 (15.247) Subpart C RSS-247 ISSUE 2						
Section		Test Item	Limit	Frequency Range (MHz)		
_	15.247 (e) 247 5.2 (b)	Power Spectral Density	8 dBm in any 3 kHz band	2400-2483.5		
Note:	1. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi. 2. Limit=8dBm – (Directional gain -6)dBi Directional gain = Gant + 10 log(Nant) dBi, where Nant is the number of outputs, Gant is the Antenna gain.					

DATE: August 02, 2018

TEST PROCEDURE

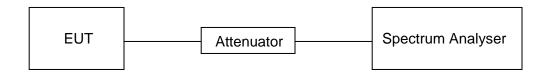
Connect the UUT to the spectrum analyser and use the following settings:

Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	3 kHz ≤ RBW ≤ 100 kHz.
VBW	≥3 × RBW
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple.

Allow trace to fully stabilize and use the peak marker function to determine the maximum amplitude level within the RBW.

If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

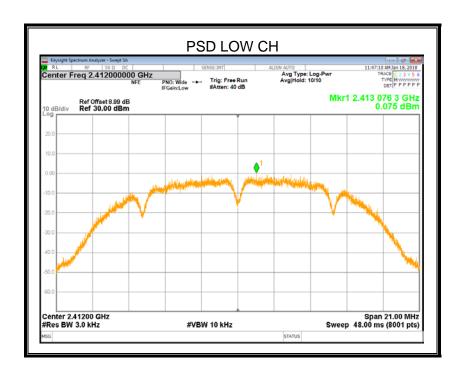
TEST SETUP

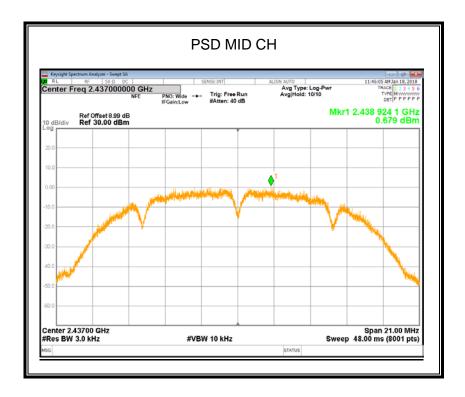


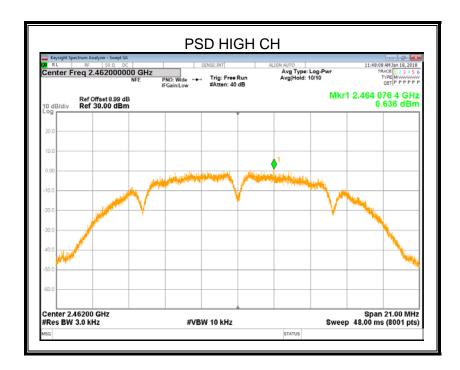
Page 35 of 316

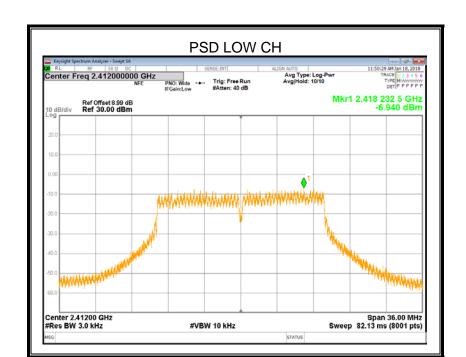
7.4.1. 1TX Mode

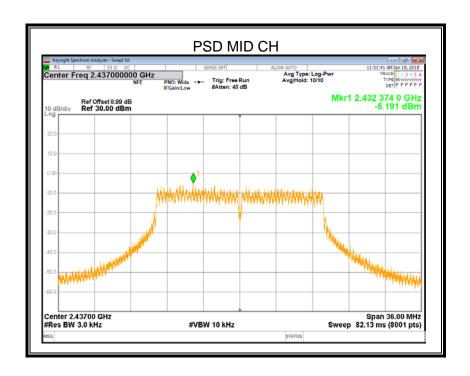
1TX Mode							
Mode	Channel	Antenna	Meas.Level [dBm/3kHz]	Limit (dBm/3KHz)	Verdict		
	LCH	А	0.075	2.5	PASS		
802.11b	MCH	Α	0.679	2.5	PASS		
	HCH	Α	0.636	2.5	PASS		
	LCH	Α	-6.94	2.5	PASS		
802.11g	MCH	Α	-5.191	2.5	PASS		
	HCH	Α	-6.976	2.5	PASS		
	LCH	А	-5.785	2.5	PASS		
802.11n20	MCH	Α	-5.409	2.5	PASS		
	HCH	Α	-6.002	2.5	PASS		
	LCH	Α	-10.37	2.5	PASS		
802.11n40	MCH	Α	-8.905	2.5	PASS		
	HCH	А	-8.262	2.5	PASS		



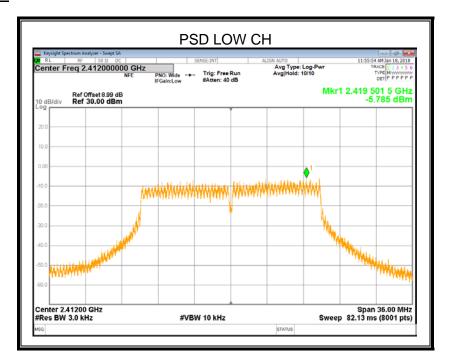


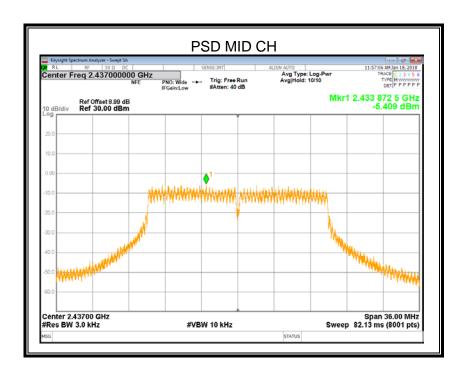


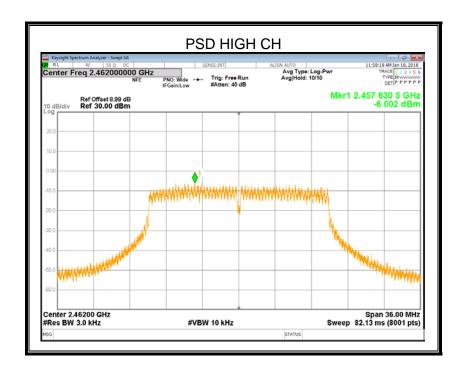




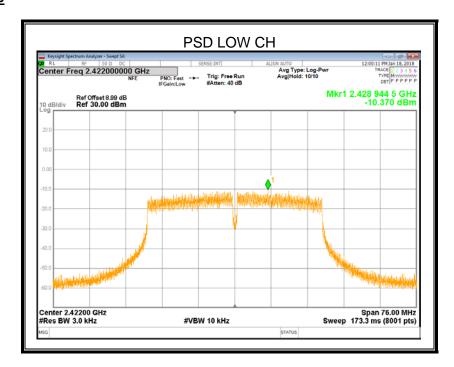
802.11n Ht20

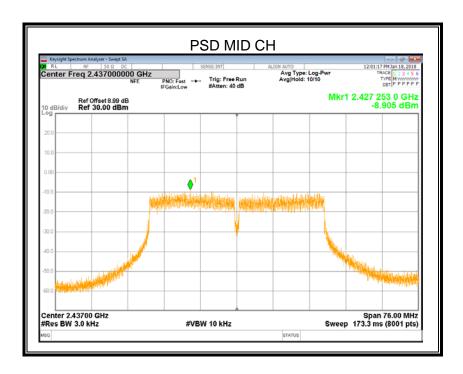






802.11 Ht40





Center 2.45200 GHz #Res BW 3.0 kHz

#VBW 10 kHz

Span 76.00 MHz Sweep 173.3 ms (8001 pts)

STATUS

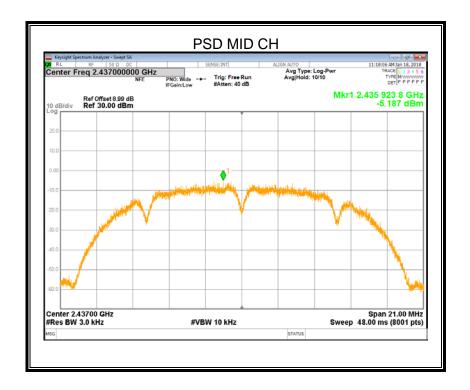
7.4.2. 2TX Mode

2TX Mode								
Mode	Channel	Antenna	Meas.Level [dBm/3kHz]	Total [dBm/3kHz]	Limit (dBm/3KHz)	Verdict		
	LCH	Α	-5.042	-1.925	-0.5	PASS		
		С	-4.832					
802.11b	MCH	Α	-5.187	-1.46				
		С	-3.857		-0.5	PASS		
	НСН	Α	-5.140	0.67				
		С	-6.299	-2.07	-0.5	PASS		
	LCH	Α	-6.963	-4.06	-0.5	PASS		
		С	-7.183					
802.11g	МСН	Α	-6.736	-4.14				
002.11g		С	-7.608		-0.5	PASS		
	НСН	Α	-6.661	-3.73	-0.5	PASS		
		С	-6.819					
	LCH	Α	-7.419	vel Hz] Total [dBm/3kHz] Limit (dBm/3KHz) -1.925 -0.5 -1.46 -0.5 -2.67 -0.5 -3.73 -0.5 -4.74 -0.5 -5.04 -0.5 -4.82 -0.5 -7.48 -0.5 -7.00 -7.00				
		С	-8.099		-0.5	PASS		
202 11n20	MCH	Α	-7.948					
802.11n20	IVICIT	С	-8.146		-0.5	PASS		
	НСН	Α	-8.375	-4.82				
		С	-7.350		-0.5	PASS		
	LCH	Α	-10.115	-7.48]		
		С	-10.882		-0.5	PASS		
802.11n40	МСН	Α	-10.092	-6.86				
002.111140		С	-9.652		-0.5	PASS		
	НСН	Α	-9.800	-7.00		5.00		
		С	-10.230		-0.5	PASS		

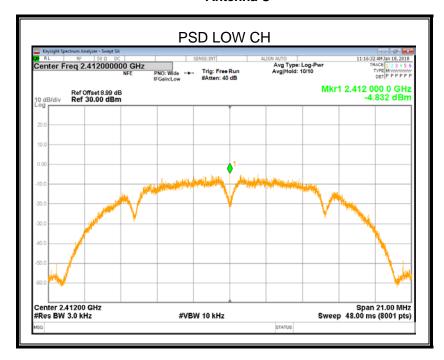
802.11b

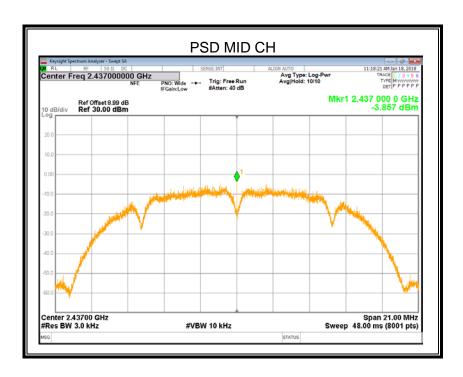
Antenna A



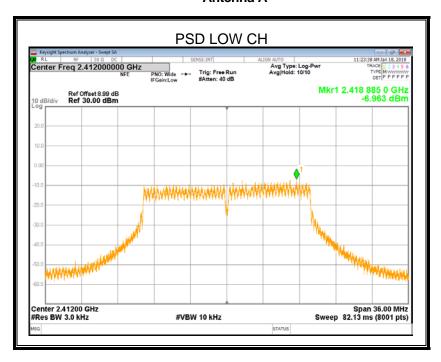


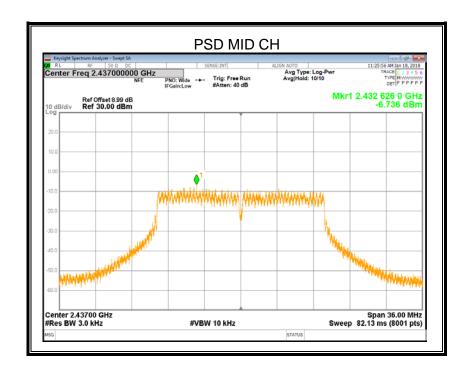
Antenna C



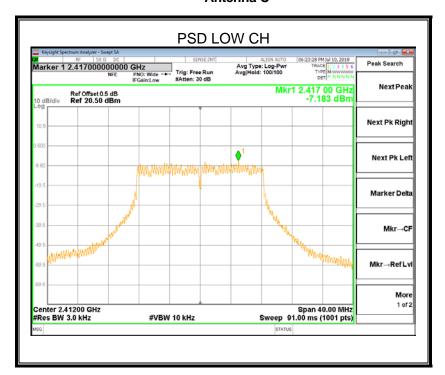


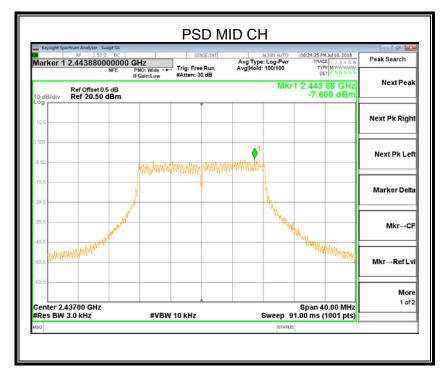
Antenna A

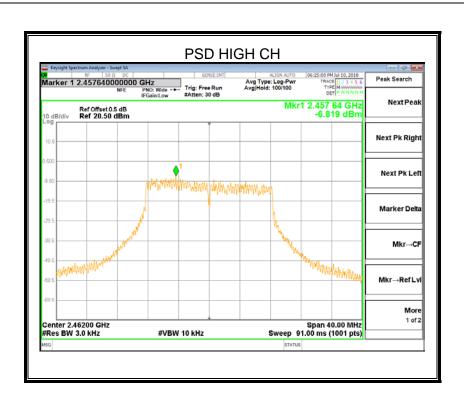




Antenna C

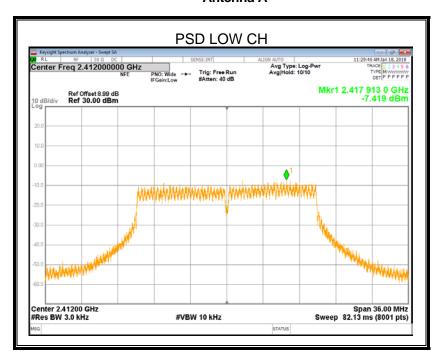


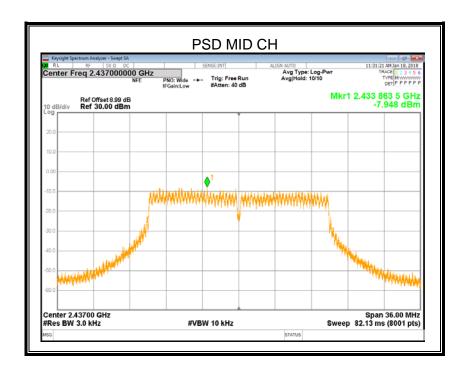




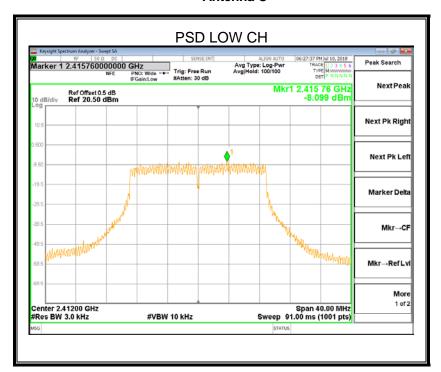
802.11n20

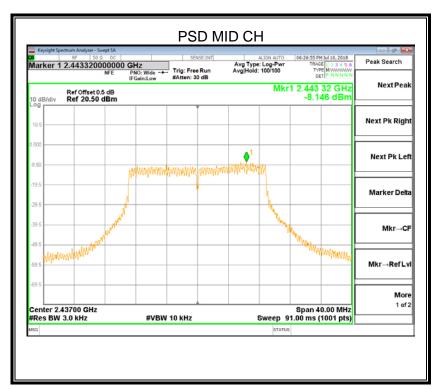
Antenna A

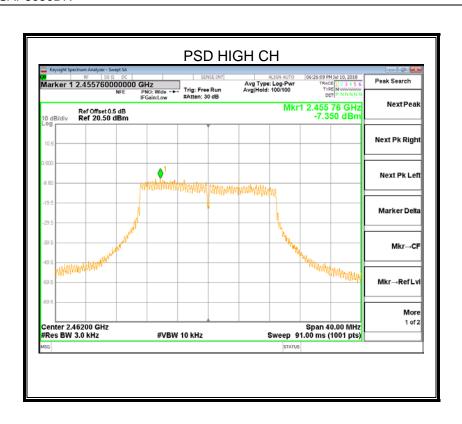




Antenna C

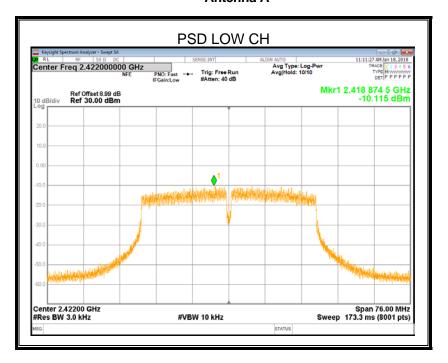


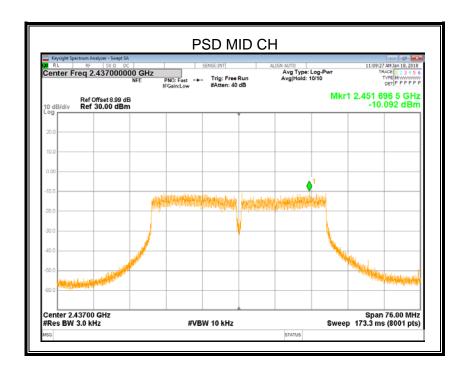




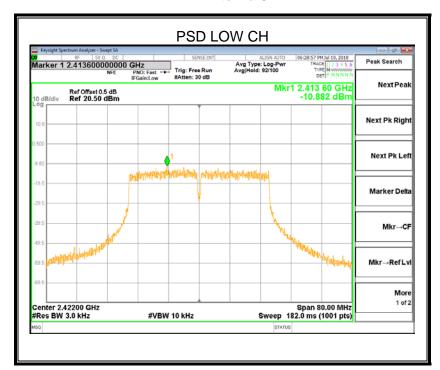
802.11n40

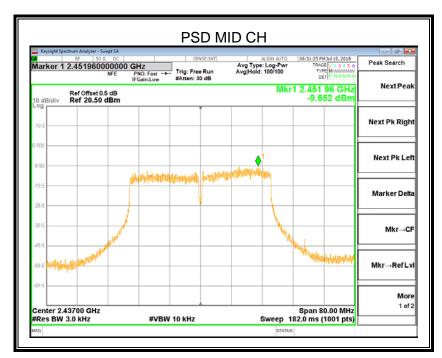
Antenna A

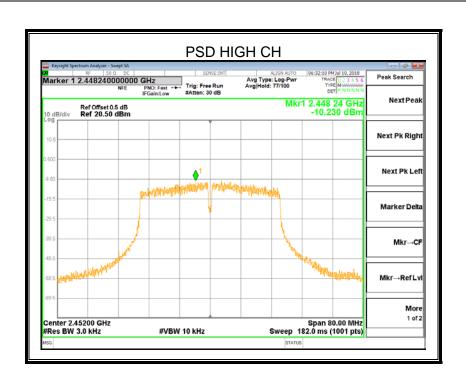




Antenna C



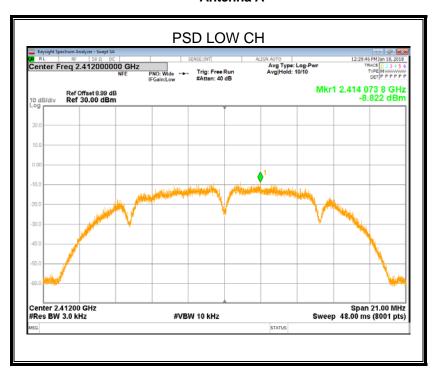


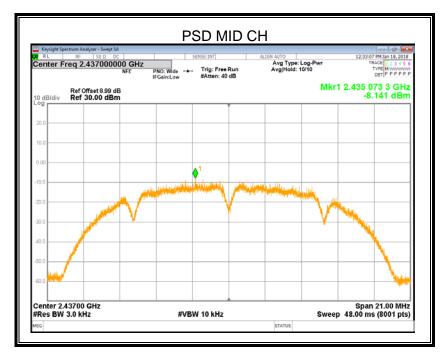


7.4.3. 3TX Mode

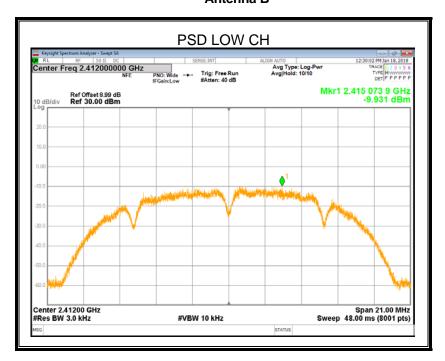
	3TX Mode							
Mode	Channel	Antenna	Meas.Level [dBm/3kHz]	Total [dBm/3kHz]	Limit (dBm/3KHz)	Verdict		
802.11b		Α	-8.822	-4.544	-2.5	PASS		
	LCH	В	-9.931					
		С	-9.265					
	МСН	Α	-8.141	-3.965	-2.5	PASS		
		В	-8.776					
		С	-9.380					
		Α	-8.704		-2.5	PASS		
	НСН	В	-8.893	-3.99				
		С	-8.690					
		Α	-10.075	-5.316	-2.5	PASS		
	LCH	В	-10.479					
		С	-9.7380					
	МСН	Α	-10.085	-5.016	-2.5	PASS		
802.11g		В	-9.433					
_		С	-9.870					
	НСН	Α	-9.965	-5.609	-2.5	PASS		
		В	-10.924					
		С	-10.606					
	LCH	Α	-10.488	-6.098	-2.5	PASS		
		В	-10.628					
		С	-11.569					
	МСН	Α	-11.120	-6.359	-2.5	PASS		
802.11n20		В	-11.136					
		С	-11.134					
	НСН	Α	-11.623	-6.31	-2.5	PASS		
		В	-9.848					
		С	-12.114					
	LCH	Α	-14.217	-9.695	-2.5	PASS		
802.11n40		В	-13.829					
		С	-15.530					
	МСН	Α	-14.294	-10.083	-2.5	PASS		
		В	-15.523					
		С	-14.833					
	НСН	Α	-13.282	-9.036	-2.5	PASS		
		В	-14.262					
		С	-13.937					

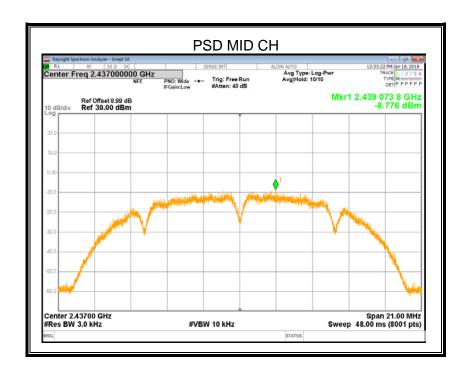
Antenna A



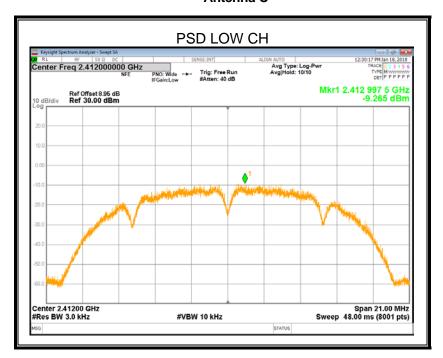


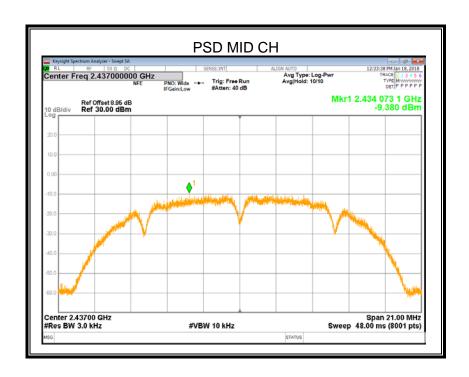
Antenna B



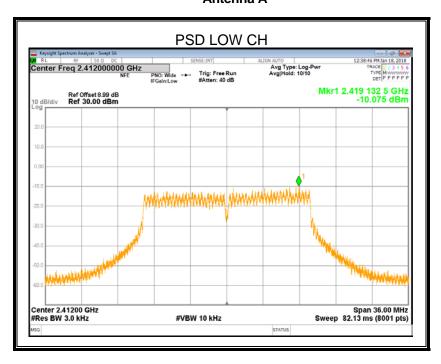


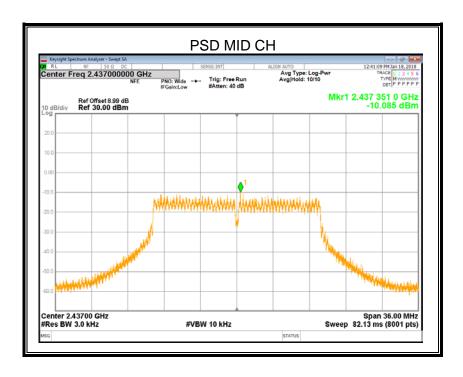
Antenna C



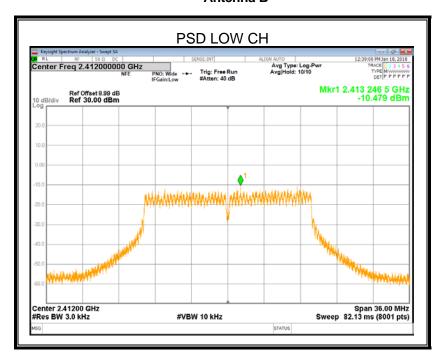


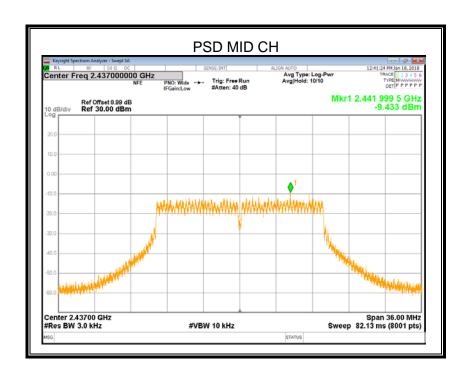
Antenna A



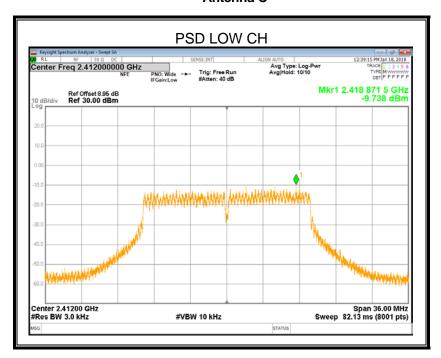


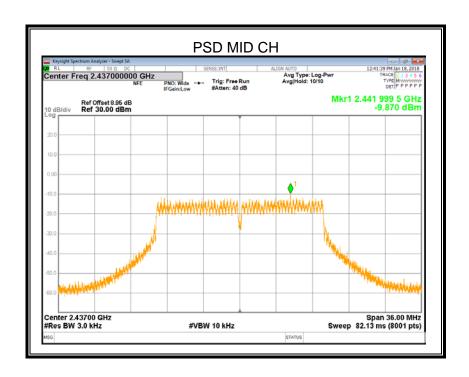
Antenna B



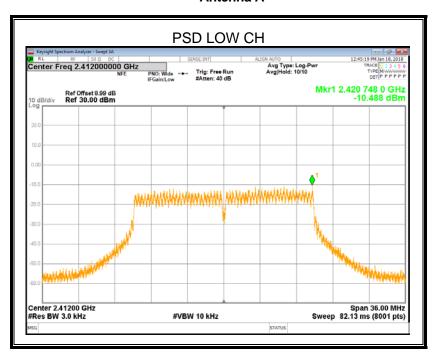


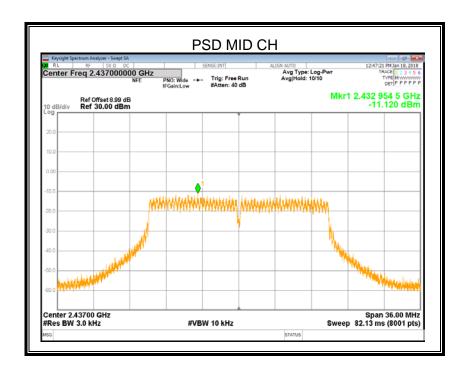
Antenna C



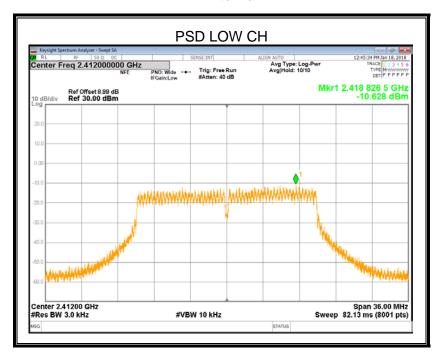


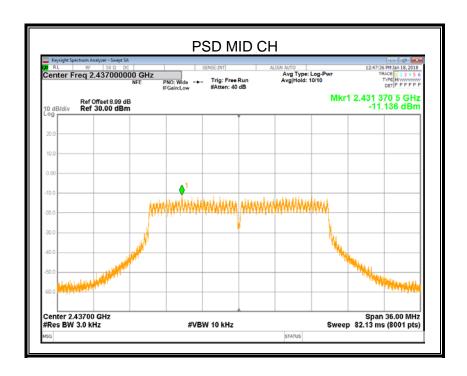
Antenna A



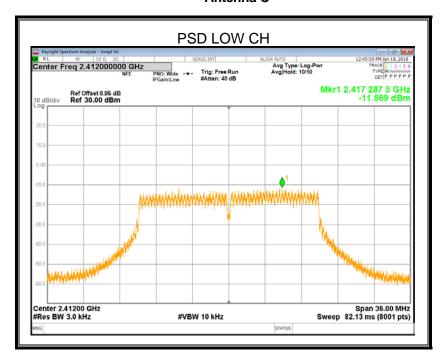


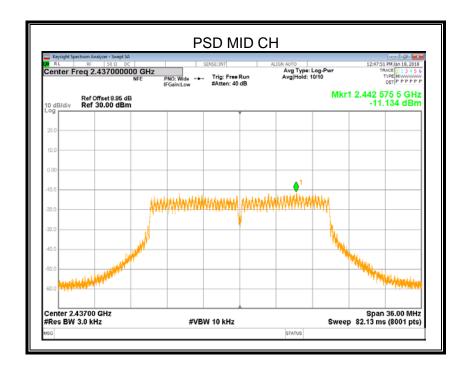
Antenna B



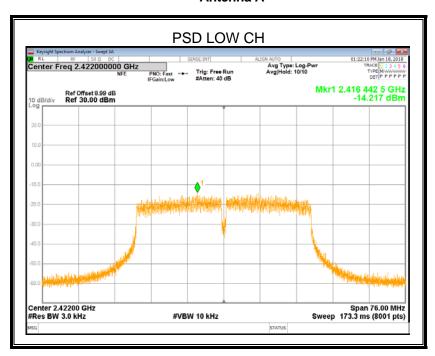


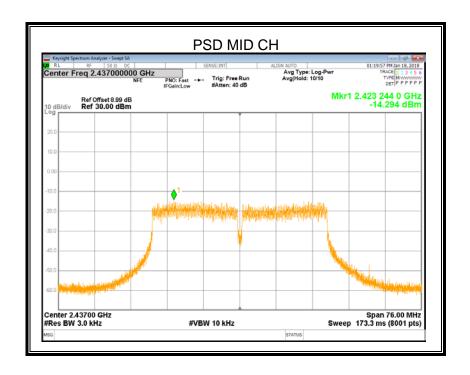
Antenna C



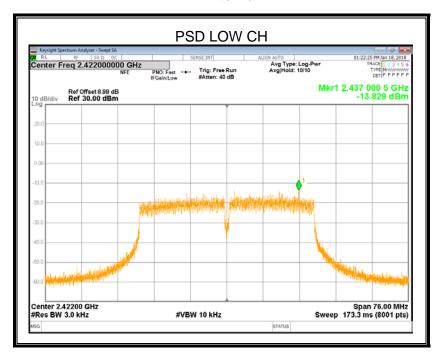


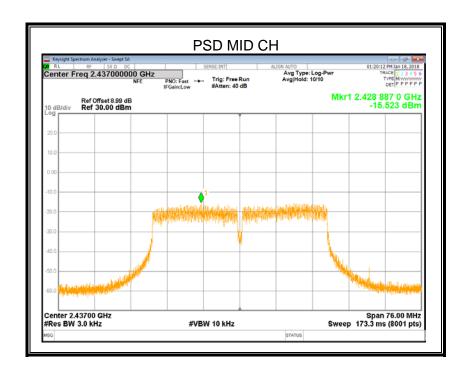
Antenna A



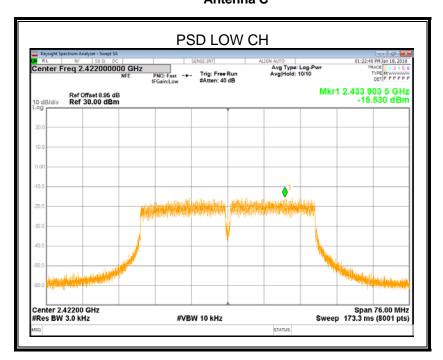


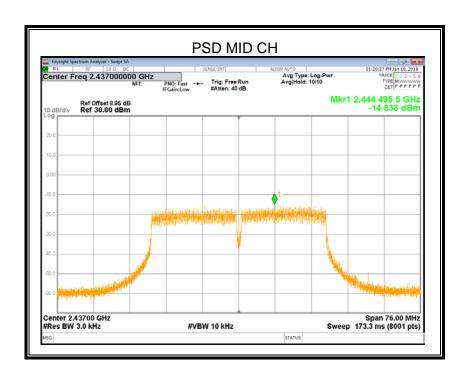
Antenna B

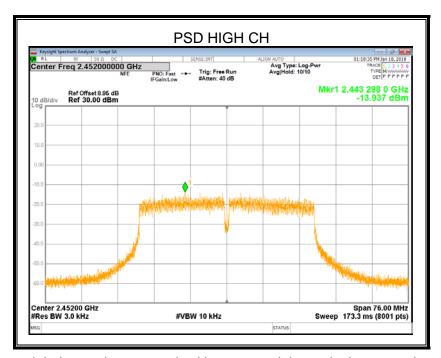




Antenna C







Note: All the modulation and antennas had been tested, but only the worst data recorded in the report.