

Data Referencing Plan

1. Introduction

Parent device (Model: ASIN0308, FCC ID: Q9DASIN0308)
Variant device (Mode: ASIN0307, FCC ID: Q9DASIN0307)
Key Differences
Removes the LTE/GPS module & its antennas from the antenna plate, and power hold up components, other is the same.

2. Spot Check Test Plan

EMC For BLE			
Rule Parts	Test Items	DUT Setup Conditions	Files for Referred Data and Spot-Checks
15.247(a)(2)	6dB Bandwidth	DTS (2402-2480MHz Band)	<i>See file</i> R25S1034045-U201_BLE
15.247(b)(3)	Output Power	DTS (2402-2480MHz Band)	<i>See file</i> R25S1034045-U201_BLE
15.247(e)	Power Spectral Density	DTS (2402-2480MHz Band)	<i>See file</i> R25S1034045-U201_BLE
15.247(d)	Band Edge / Out-of-Band Emissions	DTS (2402-2480MHz Band)	<i>See file</i> R25S1034045-U201_BLE
15.205 15.209	General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	DTS (2402-2480MHz Band)	<i>See file</i> R25S1034045-U201_BLE
15.207	AC Conducted Emissions 150kHz – 30MHz	DTS (2402-2480MHz Band)	<i>See file</i> R25S1034045-U201_BLE
EMC For Zigbee			
15.247(a)(2)	6dB Bandwidth	DTS (2405-2480MHz Band)	<i>See file</i> R25S1034045-U202_ZigBee
15.247(b)(3)	Output Power	DTS (2405-2480MHz Band)	<i>See file</i> R25S1034045-U202_ZigBee
15.247(e)	Power Spectral Density	DTS (2405-2480MHz Band)	<i>See file</i> R25S1034045-U202_ZigBee
15.247(d)	Band Edge / Out-of-Band Emissions	DTS (2405-2480MHz Band)	<i>See file</i> R25S1034045-U202_ZigBee
15.205 15.209	General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	DTS (2405-2480MHz Band)	<i>See file</i> R25S1034045-U202_ZigBee
15.207	AC Conducted Emissions 150kHz – 30MHz	DTS (2405-2480MHz Band)	<i>See file</i> R25S1034045-U202_ZigBee
EMC For 802.11b/g/n/ax/be (Wi-Fi 2.4G)			
15.247(a)(2)	6dB Bandwidth	DTS (2412-2462MHz Band)	<i>See file</i> R25S1034045-U203_2.4G
15.247(b)(3)	Output Power	DTS (2412-2462MHz Band)	<i>See file</i> R25S1034045-U203_2.4G

15.247(e)	Power Spectral Density	DTS (2412-2462MHz Band)	<i>See file</i> R25S1034045-U203_2.4G
15.247(d)	Band Edge / Out-of-Band Emissions	DTS (2412-2462MHz Band)	<i>See file</i> R25S1034045-U203_2.4G
15.205 15.209	General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	DTS (2412-2462MHz Band)	<i>See file</i> R25S1034045-U203_2.4G
15.207	AC Conducted Emissions 150kHz – 30MHz	DTS (2412-2462MHz Band)	<i>See file</i> R25S1034045-U203_2.4G
EMC For 802.11a/n/ac/ax/be (Wi-Fi 5G)			
15.407(a)	26dB Bandwidth	NII-1 (5150-5250MHz Band) NII-2A (5250-5350MHz Band) NII-2C (5470-5725MHz Band) NII-3 (5725-5850MHz Band) NII-4 (5850-5895MHz Band)	<i>See file</i> R25S1034045-U204_5G R25S1034045-U206_5.9G
15.407 (e)	6dB Bandwidth	NII-3 (5725-5850MHz Band) NII-4 (5850-5895MHz Band)	<i>See file</i> R25S1034045-U204_5G R25S1034045-U206_5.9G
15.407(a)(1)(iv), (2), (3)(i) (ii)	Output Power	NII-1 (5150-5250MHz Band) NII-2A (5250-5350MHz Band) NII-2C (5470-5725MHz Band) NII-3 (5725-5850MHz Band) NII-4 (5850-5895MHz Band)	<i>See file</i> R25S1034045-U204_5G R25S1034045-U206_5.9G
15.407(a)(1)(iv), (2), (3)(i) (ii), (12)(13)	Peak Power Spectral Density	NII-1 (5150-5250MHz Band) NII-2A (5250-5350MHz Band) NII-2C (5470-5725MHz Band) NII-3 (5725-5850MHz Band) NII-4 (5850-5895MHz Band)	<i>See file</i> R25S1034045-U204_5G R25S1034045-U206_5.9G
15.407(g)	Frequency Stability	NII-1 (5150-5250MHz Band) NII-2A (5250-5350MHz Band) NII-2C (5470-5725MHz Band) NII-3 (5725-5850MHz Band) NII-4 (5850-5895MHz Band)	<i>See file</i> R25S1034045-U204_5G R25S1034045-U206_5.9G
15.407(b)(1), (2), (3), (4)(i), (5)	Radiated Emission	NII-1 (5150-5250MHz Band) NII-2A (5250-5350MHz Band) NII-2C (5470-5725MHz Band) NII-3 (5725-5850MHz Band) NII-4 (5850-5895MHz Band)	<i>See file</i> R25S1034045-U204_5G R25S1034045-U206_5.9G
15.205, 15.209 15.407(b)(5)(i), (8), (9), (10)	Restricted Bands Emission	NII-1 (5150-5250MHz Band) NII-2A (5250-5350MHz Band) NII-2C (5470-5725MHz Band) NII-3 (5725-5850MHz Band) NII-4 (5850-5895MHz Band)	<i>See file</i> R25S1034045-U204_5G R25S1034045-U206_5.9G
15.207	AC Conducted Emissions 150kHz – 30MHz	NII-1 (5150-5250MHz Band) NII-2A (5250-5350MHz Band) NII-2C (5470-5725MHz Band)	<i>See file</i> R25S1034045-U204_5G R25S1034045-U206_5.9G

		NII-3 (5725-5850MHz Band) NII-4 (5850-5895MHz Band)	
15.407(h)(2)	DFS	NII-2A (5250-5350MHz Band) NII-2C (5470-5725MHz Band)	<i>See file</i> R25S1034045-U205_DFS
EMC For 802.11ax/be (Wi-Fi 6G)			
15.407(a)	26dB Bandwidth	NII-5 (5925-6425MHz Band) NII-6 (6425-6525MHz Band) NII-7 (6525-6875MHz Band) NII-8 (6875-7125MHz Band)	<i>See file</i> R25S1034045-U207_6G
15.407(a)(7), (a)(8)	Maximum Equivalent Isotopically Radiated Power (EIRP)	NII-5 (5925-6425MHz Band) NII-6 (6425-6525MHz Band) NII-7 (6525-6875MHz Band) NII-8 (6875-7125MHz Band)	<i>See file</i> R25S1034045-U207_6G
15.407(a)(7), (a)(8)	Maximum Power Spectral Density (EIRP)	NII-5 (5925-6425MHz Band) NII-6 (6425-6525MHz Band) NII-7 (6525-6875MHz Band) NII-8 (6875-7125MHz Band)	<i>See file</i> R25S1034045-U207_6G
15.407(g)	Frequency Stability	NII-5 (5925-6425MHz Band) NII-6 (6425-6525MHz Band) NII-7 (6525-6875MHz Band) NII-8 (6875-7125MHz Band)	<i>See file</i> R25S1034045-U207_6G
15.407(b)(7)	In-Band Emission	NII-5 (5925-6425MHz Band) NII-6 (6425-6525MHz Band) NII-7 (6525-6875MHz Band) NII-8 (6875-7125MHz Band)	<i>See file</i> R25S1034045-U207_6G
15.407(d)(6)	Contention-Based Protocol	NII-5 (5925-6425MHz Band) NII-6 (6425-6525MHz Band) NII-7 (6525-6875MHz Band) NII-8 (6875-7125MHz Band)	<i>See file</i> R25S1034045-U207_6G
15.407(b)(6)	Radiated Emission	NII-5 (5925-6425MHz Band) NII-6 (6425-6525MHz Band) NII-7 (6525-6875MHz Band) NII-8 (6875-7125MHz Band)	<i>See file</i> R25S1034045-U207_6G
15.205, 15.209 15.407(b)(8), (9), (10)	Restricted Bands Emission	NII-5 (5925-6425MHz Band) NII-6 (6425-6525MHz Band) NII-7 (6525-6875MHz Band) NII-8 (6875-7125MHz Band)	<i>See file</i> R25S1034045-U207_6G
15.207	AC Conducted Emissions 150kHz – 30MHz	NII-5 (5925-6425MHz Band) NII-6 (6425-6525MHz Band) NII-7 (6525-6875MHz Band) NII-8 (6875-7125MHz Band)	<i>See file</i> R25S1034045-U207_6G

3. Conclusion for the Spot check

EMC For BLE					
Test	Reference Worst-Case	Variant Test	dB Difference	Spot-Check Parameters	Pass Criterion
15.247(b)(3)	2402-2480MHz $R_{dB}=8.32\text{dBm}$	2402-2480MHz $V_{dB}=7.59\text{dBm}$	$d_{dB}=0.73\text{dB}$	$C_{dB}=30\text{dBm}$ $M_{dB}= C_{dB}-R_{dB} =21.68\text{dB}$ $d_{dBmax}(M_{dB})=4.084\text{dB}$	$d_{dB}<d_{dBmax}(M_{dB})$ Pass
15.205	2402-2480MHz $R_{dB}=45.74\text{dBuV/m}$	2402-2480MHz $V_{dB}=45.35\text{dBuV/m}$	$d_{dB}=0.39\text{dB}$	$C_{dB}=54\text{dBuV/m}$ $M_{dB}= C_{dB}-R_{dB} =8.26\text{dB}$ $d_{dBmax}(M_{dB})=3.413\text{dB}$	$d_{dB}<d_{dBmax}(M_{dB})$ Pass
15.209	2402-2480MHz $R_{dB}=48.89\text{dBuV/m}$	2402-2480MHz $V_{dB}=47.95\text{dBuV/m}$	$d_{dB}=0.94\text{dB}$	$C_{dB}=74\text{dBuV/m}$ $M_{dB}= C_{dB}-R_{dB} =25.11\text{dB}$ $d_{dBmax}(M_{dB})=4.2555\text{dB}$	$d_{dB}<d_{dBmax}(M_{dB})$ Pass
EMC For Zigbee					
15.247(b)(3)	2402-2480MHz $R_{dB}=8.64\text{dBm}$	2402-2480MHz $V_{dB}=7.64\text{dBm}$	$d_{dB}=1.00\text{dB}$	$C_{dB}=30\text{dBm}$ $M_{dB}= C_{dB}-R_{dB} =21.36\text{dB}$ $d_{dBmax}(M_{dB})=4.068\text{dB}$	$d_{dB}<d_{dBmax}(M_{dB})$ Pass
15.205	2402-2480MHz $R_{dB}=41.02\text{dBuV/m}$	2402-2480MHz $V_{dB}=42.69\text{dBuV/m}$	$d_{dB}=1.67\text{dB}$	$C_{dB}=54\text{dBuV/m}$ $M_{dB}= C_{dB}-R_{dB} =12.98\text{dB}$ $d_{dBmax}(M_{dB})=3.649\text{dB}$	$d_{dB}<d_{dBmax}(M_{dB})$ Pass
15.209	2402-2480MHz $R_{dB}=48.33\text{dBuV/m}$	2402-2480MHz $V_{dB}=48.70\text{dBuV/m}$	$d_{dB}=0.37\text{dB}$	$C_{dB}=74\text{dBuV/m}$ $M_{dB}= C_{dB}-R_{dB} =25.67\text{dB}$ $d_{dBmax}(M_{dB})=4.2835\text{dB}$	$d_{dB}<d_{dBmax}(M_{dB})$ Pass
EMC For 802.11b/g/n/ax (Wi-Fi 2.4G)					
15.247(b)(3)	2412-2462MHz $R_{dB}=20.95\text{dBm}$	2412-2462MHz $V_{dB}=21.05\text{dBm}$	$d_{dB}=0.2\text{dB}$	$C_{dB}=30\text{dBm}$ $M_{dB}= C_{dB}-R_{dB} =9.05\text{dB}$ $d_{dBmax}(M_{dB})=3.4525\text{dB}$	$d_{dB}<d_{dBmax}(M_{dB})$ Pass
15.205	2412-2462MHz $R_{dB}=39.25\text{dBuV/m}$	2412-2462MHz $V_{dB}=42.38\text{dBuV/m}$	$d_{dB}=3.13\text{dB}$	$C_{dB}=54\text{dBuV/m}$ $M_{dB}= C_{dB}-R_{dB} =14.75\text{dB}$ $d_{dBmax}(M_{dB})=3.7375\text{dB}$	$d_{dB}<d_{dBmax}(M_{dB})$ Pass
15.209	2412-2462MHz $R_{dB}=48.65\text{dBuV/m}$	2412-2462MHz $V_{dB}=48.31\text{dBuV/m}$	$d_{dB}=0.34\text{dB}$	$C_{dB}=74\text{dBuV/m}$ $M_{dB}= C_{dB}-R_{dB} =25.35\text{dB}$ $d_{dBmax}(M_{dB})=4.2675\text{dB}$	$d_{dB}<d_{dBmax}(M_{dB})$ Pass
EMC For 802.11a/n/ac/ax (Wi-Fi 5G)					
15.407(a)	5150-5895MHz $R_{dB}=28.16\text{MHz}$	5150-5895MHz $V_{dB}=26.55\text{MHz}$	$d_{dB}=1.61$	$C_{dB}=20\text{MHz}$ $M_{dB}= C_{dB}-R_{dB} =8.16\text{MHz}$ $d_{dBmax}(M_{dB})=3.408$	$d_{dB}<d_{dBmax}(M_{dB})$ Pass
15.407(e)	5150-5895MHz $R_{dB}=16.29\text{MHz}$	5150-5895MHz $V_{dB}=16.34\text{MHz}$	$d_{dB}=0.05$	$C_{dB}=0.5\text{MHz}$ $M_{dB}= C_{dB}-R_{dB} =15.79\text{MHz}$ $d_{dBmax}(M_{dB})=3.7895$	$d_{dB}<d_{dBmax}(M_{dB})$ Pass
15.407(a)(1)(ii), (2), (3)	5150-5895MHz $R_{dB}=21.45\text{dBm}$	5150-5895MHz $V_{dB}=21.45\text{dBm}$	$d_{dB}=0\text{dB}$	$C_{dB}=30\text{dBm}$ $M_{dB}= C_{dB}-R_{dB} =1.4\text{dB}$ $d_{dBmax}(M_{dB})=3.07\text{dB}$	$d_{dB}<d_{dBmax}(M_{dB})$ Pass
15.407(b)(1), (2), (3), (4)(i)	5150-5895MHz $R_{dB}=62.66\text{dBuV/m}$	5150-5895MHz $V_{dB}=65.06\text{dBuV/m}$	$d_{dB}=2.4\text{dB}$	$C_{dB}=68.2\text{dBm/MHz}$ $M_{dB}= C_{dB}-R_{dB} =5.54\text{dB}$	$d_{dB}<d_{dBmax}(M_{dB})$ Pass

				$d_{dBmax}(M_{dB})=3.277\text{dB}$	
15.205, 15.209 15.407(b)(8), (9), (10)	5150-5895MHz $R_{dB}=48.62\text{dBuV/m}$	5150-5895MHz $V_{dB}=47.63\text{dBuV/m}$	$d_{dB}=0.99\text{dB}$	$C_{dB}= 68.2\text{dBuV/m}$ $M_{dB}= C_{dB} - R_{dB} =19.58\text{dB}$ $d_{dBmax}(M_{dB})=3.979\text{dB}$	$d_{dB} < d_{dBmax}(M_{dB})$ Pass
15.407(h)	5250-5725MHz $R_{dB}=60\text{s}$	5250-5725MHz $V_{dB}=60\text{s}$	$d_{dB}=0$	$C_{dB}= 60\text{s}$ $M_{dB}= C_{dB} - R_{dB} =0$ $d_{dBmax}(M_{dB})=3$	$d_{dB} < d_{dBmax}(M_{dB})$ Pass
EMC For 802.11ax/be (Wi-Fi 6G)					
15.407(a)	5925-7125MHz $R_{dB}=156.43\text{MHz}$	5925-7125MHz $V_{dB}=158.73\text{MHz}$	$d_{dB}=2.3\text{dB}$	$C_{dB}= 160\text{MHz}$ $M_{dB}= C_{dB} - R_{dB} =3.57\text{dB}$ $d_{dBmax}(M_{dB})=3.1785\text{dB}$	$d_{dB} < d_{dBmax}(M_{dB})$ Pass
15.407(a)(7), (a)(8)	5925-7125MHz $R_{dB}=19.26\text{dBm}$	5925-7125MHz $V_{dB}=16.66\text{dBm}$	$d_{dB}=2.6\text{dB}$	$C_{dB}= 30\text{dBm}$ $M_{dB}= C_{dB} - R_{dB} =10.74\text{dB}$ $d_{dBmax}(M_{dB})=3.537\text{dB}$	$d_{dB} < d_{dBmax}(M_{dB})$ Pass
15.407(b)(6)	5925-7125MHz $R_{dB}=53.04\text{dBuV/m}$	5925-7125MHz $V_{dB}=54.64\text{dBuV/m}$	$d_{dB}=1.6\text{dB}$	$C_{dB}= 68.2\text{dBuV/m}$ $M_{dB}= C_{dB} - R_{dB} =15.16\text{dB}$ $d_{dBmax}(M_{dB})=3.758\text{dB}$	$d_{dB} < d_{dBmax}(M_{dB})$ Pass
15.205, 15.209 15.407(b)(8), (9), (10)	5925-7125MHz $R_{dB}=47.80\text{dBuV/m}$	5925-7125MHz $V_{dB}=48.61\text{dBuV/m}$	$d_{dB}=0.81\text{dB}$	$C_{dB}= 74\text{dBuV/m}$ $M_{dB}= C_{dB} - R_{dB} =26.2\text{dB}$ $d_{dBmax}(M_{dB})=4.31\text{dB}$	$d_{dB} < d_{dBmax}(M_{dB})$ Pass

All the tests considered for Data Referencing pass the acceptance criterion.