

Data Referencing Plan

1. Introduction

Parent device (Model: EAP670, FCC ID: 2AXJ4EAP670V2)
Variant device (Mode: EAP670, FCC ID: 2AXJ4EAP670V22)
Key Differences
a) Change the DC-DC material
b) Change the peripheral crystal of the 5G chip (Pin-to-Pin change, from 96MHz to 48MHz).

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> 2509TW0110-U1 FCC Part 15.247 BLE_V1.0
15.247(b)(3)	Output Power	DTS (2402-2480MHz Band)	<i>See file</i> 2509TW0110-U1 FCC Part 15.247 BLE_V1.0
15.247(e)	Power Spectral Density	DTS (2402-2480MHz Band)	<i>See file</i> 2509TW0110-U1 FCC Part 15.247 BLE_V1.0
15.247(d)	Band Edge / Out-of-Band Emissions	DTS (2402-2480MHz Band)	<i>See file</i> 2509TW0110-U1 FCC Part 15.247 BLE_V1.0
15.205 15.209	General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	DTS (2402-2480MHz Band)	<i>See file</i> 2509TW0110-U1 FCC Part 15.247 BLE_V1.0
15.207	AC Conducted Emissions 150kHz – 30MHz	DTS (2402-2480MHz Band)	<i>See file</i> 2509TW0110-U1 FCC Part 15.247 BLE_V1.0
EMC For 802.11b/g/n/ax (Wi-Fi 2.4G)			
15.247(a)(2)	6dB Bandwidth	DTS (2412-2462MHz Band)	<i>See file</i> 2509TW0110-U2 FCC Part 15.247 WiFi 2.4G_V1.0
15.247(b)(3)	Output Power	DTS (2412-2462MHz Band)	<i>See file</i> 2509TW0110-U2 FCC Part 15.247 WiFi 2.4G_V1.0
15.247(e)	Power Spectral Density	DTS (2412-2462MHz Band)	<i>See file</i> 2509TW0110-U2 FCC Part 15.247 WiFi 2.4G_V1.0
15.247(d)	Band Edge / Out-of-Band Emissions	DTS (2412-2462MHz Band)	<i>See file</i> 2509TW0110-U2 FCC Part 15.247 WiFi 2.4G_V1.0

15.205 15.209	General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	DTS (2412-2462MHz Band)	<i>See file</i> 2509TW0110-U2 FCC Part 15.247 WiFi 2.4G_V1.0
15.207	AC Conducted Emissions 150kHz – 30MHz	DTS (2412-2462MHz Band)	<i>See file</i> 2509TW0110-U2 FCC Part 15.247 WiFi 2.4G_V1.0
EMC For 802.11a/n/ac/ax (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)	<i>See file</i> 2509TW0110-U3 FCC Part 15.407 WiFi 5G_V1.0
15.407 (e)	6dB Bandwidth	NII-3 (5725-5850MHz Band)	<i>See file</i> 2509TW0110-U3 FCC Part 15.407 WiFi 5G_V1.0
15.407(a)(1)(ii), (2), (3)	Output Power	NII-1 (5150-5250MHz Band) NII-2A (5250-5350MHz Band) NII-2C (5470-5725MHz Band) NII-3 (5725-5850MHz Band)	<i>See file</i> 2509TW0110-U3 FCC Part 15.407 WiFi 5G_V1.0
15.407(h)(1)	Peak Power Spectral Density	NII-1 (5150-5250MHz Band) NII-2A (5250-5350MHz Band) NII-2C (5470-5725MHz Band) NII-3 (5725-5850MHz Band)	<i>See file</i> 2509TW0110-U3 FCC Part 15.407 WiFi 5G_V1.0
15.407(a)(1)(ii), (2), (3), (12)	Frequency Stability	NII-1 (5150-5250MHz Band) NII-2A (5250-5350MHz Band) NII-2C (5470-5725MHz Band) NII-3 (5725-5850MHz Band)	<i>See file</i> 2509TW0110-U3 FCC Part 15.407 WiFi 5G_V1.0
15.407(g)	Radiated Emission	NII-1 (5150-5250MHz Band) NII-2A (5250-5350MHz Band) NII-2C (5470-5725MHz Band) NII-3 (5725-5850MHz Band)	<i>See file</i> 2509TW0110-U3 FCC Part 15.407 WiFi 5G_V1.0
15.407(b)(1), (2), (3), (4)(i)	Restricted Bands Emission	NII-1 (5150-5250MHz Band) NII-2A (5250-5350MHz Band) NII-2C (5470-5725MHz Band) NII-3 (5725-5850MHz Band)	<i>See file</i> 2509TW0110-U3 FCC Part 15.407 WiFi 5G_V1.0
15.205, 15.209 15.407(b)(8), (9), (10)	AC Conducted Emissions 150kHz – 30MHz	NII-1 (5150-5250MHz Band) NII-2A (5250-5350MHz Band) NII-2C (5470-5725MHz Band) NII-3 (5725-5850MHz Band)	<i>See file</i> 2509TW0110-U3 FCC Part 15.407 WiFi 5G_V1.0
15.407(h)	DFS	NII-2A (5250-5350MHz Band) NII-2C (5470-5725MHz Band)	<i>See file</i> 2509TW0110-U4 FCC Part 15.407 WiFi 5G-DFS_V1.0
RF Exposure			
KDB 447498	MPE	DTS (2402-2480MHz Band) DTS (2412-2462MHz Band) NII-1 (5150-5250MHz Band) NII-2A (5250-5350MHz Band)	<i>See file</i> 2509TW0110-U5 FCC RF Exposure Report_V1.0

		NII-2C (5470-5725MHz Band) NII-3 (5725-5850MHz Band)	
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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 $R_{dB}=17.79\text{dBm}$	2402-2480MHz $V_{dB}=17.63\text{dBm}$	$d_{dB}=0.16\text{dB}$	$C_{dB}=30\text{dBm}$ $M_{dB}= C_{dB}-R_{dB} =12.21\text{dB}$ $d_{dBmax}(M_{dB})=3.6105\text{dB}$	$d_{dB}<d_{dBmax}(M_{dB})$ Pass
15.205	2402-2480MHz $R_{dB}=53.88\text{dBuV/m}$	2402-2480MHz $V_{dB}=52.86\text{dBuV/m}$	$d_{dB}=1.02\text{dB}$	$C_{dB}=54\text{dBuV/m}$ $M_{dB}= C_{dB}-R_{dB} =0.12\text{dB}$ $d_{dBmax}(M_{dB})=3.006\text{dB}$	$d_{dB}<d_{dBmax}(M_{dB})$ Pass
15.209	2402-2480MHz $R_{dB}=45.34\text{dBuV/m}$	2402-2480MHz $V_{dB}=47.70\text{dBuV/m}$	$d_{dB}=2.36\text{dB}$	$C_{dB}=74\text{dBuV/m}$ $M_{dB}= C_{dB}-R_{dB} =28.66\text{dB}$ $d_{dBmax}(M_{dB})=4.433\text{dB}$	$d_{dB}<d_{dBmax}(M_{dB})$ Pass
EMC For 802.11b/g/n/ax (Wi-Fi 2.4G)					
15.247(b)(3)	2412-2462MHz $R_{dB}=25.99\text{dBm}$	2412-2462MHz $V_{dB}=25.85\text{dBm}$	$d_{dB}=0.14\text{dB}$	$C_{dB}=30\text{dBm}$ $M_{dB}= C_{dB}-R_{dB} =4.01\text{dB}$ $d_{dBmax}(M_{dB})=3.2005\text{dB}$	$d_{dB}<d_{dBmax}(M_{dB})$ Pass
15.205	2412-2462MHz $R_{dB}=51.32\text{dBuV/m}$	2412-2462MHz $V_{dB}=51.23\text{dBuV/m}$	$d_{dB}=0.09\text{dB}$	$C_{dB}=54\text{dBuV/m}$ $M_{dB}= C_{dB}-R_{dB} =2.68\text{dB}$ $d_{dBmax}(M_{dB})=3.134\text{dB}$	$d_{dB}<d_{dBmax}(M_{dB})$ Pass
15.209	2412-2462MHz $R_{dB}=47.05\text{dBuV/m}$	2412-2462MHz $V_{dB}=47.18\text{dBuV/m}$	$d_{dB}=0.13\text{dB}$	$C_{dB}=74\text{dBuV/m}$ $M_{dB}= C_{dB}-R_{dB} =26.95\text{dB}$ $d_{dBmax}(M_{dB})=4.3475\text{dB}$	$d_{dB}<d_{dBmax}(M_{dB})$ Pass
EMC For 802.11a/n/ac/ax (Wi-Fi 5G)					
15.407(a)	5150-5850MHz $R_{dB}=163.2\text{MHz}$	5150-5850MHz $V_{dB}=161.3\text{MHz}$	$d_{dB}=1.9$	$C_{dB}=160\text{MHz}$ $M_{dB}= C_{dB}-R_{dB} =3.2\text{MHz}$ $d_{dBmax}(M_{dB})=2.84$	$d_{dB}<d_{dBmax}(M_{dB})$ Pass
15.407(e)	5725-5850MHz $R_{dB}=76.88\text{MHz}$	5725-5850MHz $V_{dB}=77.65\text{MHz}$	$d_{dB}=0.77$	$C_{dB}=0.5\text{MHz}$ $M_{dB}= C_{dB}-R_{dB} =76.38\text{MHz}$ $d_{dBmax}(M_{dB})=6$	$d_{dB}<d_{dBmax}(M_{dB})$ Pass
15.407(a)(1)(ii), (2), (3)	5150-5850MHz $R_{dB}=28.60\text{dBm}$	5150-5850MHz $V_{dB}=28.30\text{dBm}$	$d_{dB}=0.3\text{dB}$	$C_{dB}=30\text{dBm}$ $M_{dB}= C_{dB}-R_{dB} =1.4\text{dB}$ $d_{dBmax}(M_{dB})=3.07\text{dB}$	$d_{dB}<d_{dBmax}(M_{dB})$ Pass
15.407(b)(1), (2), (3), (4)(i)	5150-5850MHz $R_{dB}=53.02\text{dBuV/m}$	5150-5850MHz $V_{dB}=50.29\text{dBuV/m}$	$d_{dB}=2.73\text{dB}$	$C_{dB}=54\text{dBm/MHz}$ $M_{dB}= C_{dB}-R_{dB} =0.98\text{dB}$ $d_{dBmax}(M_{dB})=3.049\text{dB}$	$d_{dB}<d_{dBmax}(M_{dB})$ Pass
15.205, 15.209 15.407(b)(8), (9), (10)	5150-5850MHz $R_{dB}=68.10\text{dBuV/m}$	5150-5850MHz $V_{dB}=65.85\text{dBuV/m}$	$d_{dB}=2.27\text{dB}$	$C_{dB}=68.2\text{dBuV/m}$ $M_{dB}= C_{dB}-R_{dB} =0.1\text{dB}$ $d_{dBmax}(M_{dB})=3.005\text{dB}$	$d_{dB}<d_{dBmax}(M_{dB})$ 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

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