

SPOTCHECK TEST PLAN - SC2124, FCC ID: XX6SC2124M

This product has 3 different RF interfaces. Spotcheck test plan followed is detailed below per technology.

WLAN 2.4 GHz (FCC Part 15.247, DTS)

Full testing has applied because output power from EUT is modified respecting module's output power. This information can be confirmed by checking test report with ID 2320056R-RF-US-P06V01.

Bluetooth EDR and LE (FCC Part 15.247, DSS and DTS)

For this interface, modular approval approach is followed. In order to confirm that the integration is correct and modular approval KDB is fulfilled, one conducted output power from EUT is measured and compared with worst case of conducted output power from module, and it must be inside a margin of +/- 1.5 dB. Also, Radiated Spurious Emissions test case was performed in order to confirm a correct module integration.

- BLE (DTS), reports ID 1901WSU002-U5 (module) page 19 (top); 74747RRF.002 (EUT), page 17 (bottom)

Test Result of Average Output Power (Reporting Only)

Test Mode	Data Rate / Mbps	Channel No.	Freq. (MHz)	Average Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)	Result
BLE	1	00	2402	3.56	≤ 30.00	4.46	≤ 36.00	Pass
BLE	1	19	2440	4.51	≤ 30.00	5.41	≤ 36.00	Pass
BLE	1	39	2480	4.69	≤ 30.00	5.59	≤ 36.00	Pass
BLE	2	00	2402	3.48	≤ 30.00	4.38	≤ 36.00	Pass
BLE	2	19	2440	4.44	≤ 30.00	5.34	≤ 36.00	Pass
BLE	2	39	2480	4.63	≤ 30.00	5.53	≤ 36.00	Pass

Freq (MHz)	Equipment	BW (MHz)	# of Tx Chains	Port	Max RF Output power (dBm)	Max E.I.R.P. (dBm)
2480.00000	Digital Transmission System (DTS)	1	1	1	5.16	6.46

- BLE (DTS), reports ID 1901WSU002-U4 (module) page 23 (top); 74747RRF.002 (EUT), page 12 (bottom)

Test Mode	Channel No.	Frequency (MHz)	Peak Power (dBm)	Peak Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)	Result
DH5	00	2402	9.59	≤ 20.97	10.49	≤ 36.0	Pass
DH5	39	2441	9.93	≤ 20.97	10.83	≤ 36.0	Pass
DH5	78	2480	9.50	≤ 20.97	10.40	≤ 36.0	Pass
2DH5	00	2402	7.75	≤ 20.97	8.65	≤ 36.0	Pass
2DH5	39	2441	7.76	≤ 20.97	8.66	≤ 36.0	Pass
2DH5	78	2480	8.05	≤ 20.97	8.95	≤ 36.0	Pass
3DH5	00	2402	8.24	≤ 20.97	9.14	≤ 36.0	Pass
3DH5	39	2441	8.20	≤ 20.97	9.10	≤ 36.0	Pass
3DH5	78	2480	8.45	≤ 20.97	9.35	≤ 36.0	Pass

Freq (MHz)	Equipment	BW (MHz)	# of Tx Chains	Port	Peak Power (dBm)	E.I.R.P. (dBm)
2441.000	Frequency Hopping Spread Spectrum systems (DSS)	1	1	1	9.12	10.42

TETRA

TETRA interface has been tested in the report with ID 75944487-02 Issue 01. However, this report belongs to a former SC2124 with FCC ID XX6SC2124, and in order to re-use this measurements for the new SC2124 with FCC ID XX6SC2124M, a spotcheck report with ID 75957666-03 Issue 03 has been released in order to confirm that new version from SC2124 still complies and can leverage former SC2124 measurements. This approach works because BT/WLAN module has been substituted for a new module, and TETRA interface remains the same between these versions.

According to KDB 484596 D01 Referencing Test Data v02r01, while being always compliant with the applicable rule part(s) for the test under consideration, spot-check measurements may show a deviation from the reference data no larger than 3 dB, applicable for both field and power quantities.

Spotcheck test cases performed in this case are Maximum Conducted Output Power, Spurious Emissions at Antenna Terminals and Radiated Spurious Emissions, for both operation bands 403 – 430 MHz and 450 – 470 MHz.

- **403 – 430 MHz frequency band, report 75944487-02 Issue 01 for XX6SC2124 (top) and report 75957666-03 Issue 03 for XX6SC2124M (bottom) comparison**

450.025 MHz		460.025 MHz		469.975 MHz	
Result (dBm)	Result (W)	Result (dBm)	Result (W)	Result (dBm)	Result (W)
33.356	2.166	33.352	2.164	33.421	2.198

TETRA 403 MHz to 430 MHz

Parameter	406.125 MHz	418.050 MHz	429.975 MHz
Conducted Output Power (dBm)	35.11	35.09	35.17
Manufacturer Declared Power (dBm)	35.0	35.0	35.0
Δ from manufacturer Power (dB)	0.11	0.09	0.17
Antenna Gain (dBd)	-0.15	-0.15	-0.15
ERP (dBm)	34.96	34.94	35.02

- **450 – 470 MHz frequency band, report 75944487-02 Issue 01 for XX6SC2124 (top) and report 75957666-03 Issue 03 for XX6SC2124M (bottom) comparison**

TETRA 450 MHz to 470 MHz - Transmit

450.025 MHz		460.025 MHz		469.975 MHz	
Result (dBm)	Result (W)	Result (dBm)	Result (W)	Result (dBm)	Result (W)
33.356	2.166	33.352	2.164	33.421	2.198

TETRA 450 MHz to 470 MHz

Parameter	450.025 MHz	460.025 MHz	469.975 MHz
Conducted RMS Output Power (dBm)	35.16	35.24	35.22
Manufacturer Declared Power (dBm)	35.0	35.0	35.0
Δ from manufacturer Power (dB)	0.16	0.24	0.22
Antenna Gain (dBd)	-0.15	-0.15	-0.15
ERP (dBm)	35.01	35.09	35.07

In terms of output power, we can check that the deviation is less than 3 dB for all channels tested, so this KDB is satisfactory met.

In addition, comparing one radiated spurious emission measurement between these two products, we can see that the margin still complies:

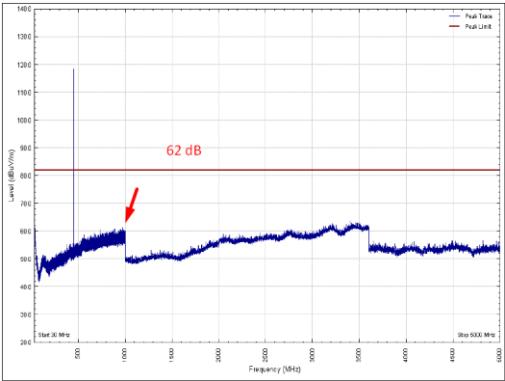


Figure 67 - 450.025 MHz - 30 MHz to 5 GHz - Orientation X – Vertical

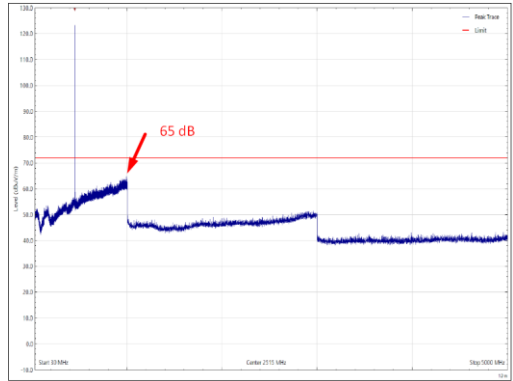


Figure 75 - 450.025 MHz - 30 MHz to 5 GHz, Vertical, EUT Orientation X