Spot Check Evaluation

APPLICANT	:	Quectel Wireless Solutions Co., Ltd.
EQUIPMENT	:	Smart Module
BRAND NAME	:	Quectel
MODEL NAME	:	SC668S-NA
FCC ID	:	XMR2022SC668SNA
STANDARD	:	47 CFR Part 15 Subpart C §15.247 47 CFR Part 15 Subpart E §15.407
TEST DATE(S)	:	Feb. 08, 2023

We, Sporton International Inc. (Kunshan), would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. (Kunshan), the test report shall not be reproduced except in full.

Jason Jia

Approved by: Jason Jia

ACCREDITED Cert #5145.02

Sporton International Inc. (Kunshan)
No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300
People's Republic of China

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
311713A	Rev. 01	Initial issue of report	Apr. 21, 2023

1 General Description

1.1 Applicant

Quectel Wireless Solutions Co., Ltd.
Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, 200233, China

1.2 Manufacturer

Quectel Wireless Solutions Co., Ltd.
Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, 200233, China

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Smart Module
Brand Name	Quectel
Model Name	SC668S-NA
FCC ID	XMR2022SC668SNA
EUT supports Radios application	LTE WLAN 2.4GHz 802.11b/g/n HT20/HT40 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE GNSS
SN Code	Conducted: D1C22LT14000058
HW Version	R1.0
SW Version	SC668SNANAR02A02
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.4 Modification of EUT

No modifications are made to the EUT during all test items.

2 Re-use of Measured Data

2.1 Introduction Section

This application re-uses data collected on a similar device. The subject device of this application (Model: SC668S-NA, FCC ID: XMR2022SC668SNA) is electrically identical to the reference device (Model: SC668S-WF, FCC ID: XMR2022SC668SWF) for the portions of the circuitry corresponding to the data being re-used. Based on their similarity, the FCC Part 15C (equipment class: DTS, DSS) and FCC Part 15E (equipment class: NII) reuse the original model's result and do spot-check, following the FCC KDB 484596 D01 v01.

The applicant takes full responsibility that the test data as referenced in this report represent compliance for this FCC ID: XMR2022SC668SNA .

2.2 Model Difference Information

The **main** difference between FCC ID: XMR2022SC668SWF and FCC ID: XMR2022SC668SNA is as below:

- Add WWAN LTE band.

Other differences and all the details of similarity and difference can be found in the confidential documents (SC668S-NA_Operational Description of Product Equality Declaration).

2.3 Reference detail Section:

Rule Part	Equipment Class	Frequency Band (MHz)	Reference FCC ID(Parent)	Type Grant/ Permissive Change	Reference Title	FCC ID Filling (Variant)	Report Title/Section
15C	DSS (BR/EDR)	2400~2483.5	XMR2022SC668SWF	Original Grant	FR2N1442A	XMR2022SC668SNA	All sections applicable
	DTS (BLE)	2400~2483.5	XMR2022SC668SWF	Original Grant	FR2N1442B	XMR2022SC668SNA	All sections applicable
	DTS (WLAN)	2400~2483.5	XMR2022SC668SWF	Original Grant	FR2N1442C	XMR2022SC668SNA	All sections applicable
15E	UNII-1	5150~5250	XMR2022SC668SWF	Original Grant	FR2N1442D	XMR2022SC668SNA	All sections applicable
	UNII-2A	5250~5350	XMR2022SC668SWF	Original Grant	FR2N1442D, FZ2N1442	XMR2022SC668SNA	All sections applicable
	UNII-2C	5470~5725	XMR2022SC668SWF	Original Grant	FR2N1442D, FZ2N1442	XMR2022SC668SNA	All sections applicable
	UNII-3	5725~5850	XMR2022SC668SWF	Original Grant	FR2N1442D	XMR2022SC668SNA	All sections applicable

2.4 Spot Check Verification Data Section

Conducted power test and radiated spurious emission test against the variant model based on the worst-case condition from the original model was performed in this filing to demonstrate the test data from original model remains representative for the variant model

Summary for power and RSE spot check for each rule entry and technology is listed as below:

Test Item	Mode	XMR2022SC668SWF Parent Worst Result	XMR2022SC668SNA Variant Check Result	Difference (dB)
Conducted Power (dBm)	BT BR/EDR	11.80	11.39	0.41
	BLE 1M	2.77	2.59	0.18
	BLE 2M	2.91	2.66	0.25
	2.4G 11b	18.43	18.04	0.39
	2.4G 11g	20.38	19.92	0.46
	2.4G 11n20	19.42	19.04	0.38
	2.4G 11n40	20.44	20.35	0.09
	5G 11a UNII-1	15.94	15.80	0.14
	5G 11a UNII-2A	15.93	15.71	0.22
	5G 11a UNII-2C	15.89	15.81	0.08
	5G 11a UNII-3	15.31	15.29	0.02
	5G 11n20 UNII-1	15.75	15.69	0.06
	5G 11n20 UNII-2A	15.76	15.44	0.32
	5G 11n20 UNII-2C	15.73	15.59	0.14
	5G 11n20 UNII-3	15.12	15.10	0.02
	5G 11n40 UNII-1	16.56	16.44	0.12
	5G 11n40 UNII-2A	16.37	16.31	0.06
	5G 11n40 UNII-2C	15.94	15.79	0.15
	5G 11n40 UNII-3	15.79	15.74	0.05
	5G 11AC20 UNII-1	14.69	14.55	0.14
	5G 11AC20 UNII-2A	14.65	14.54	0.11
	5G 11AC20 UNII-2C	14.61	14.49	0.12
	5G 11AC20 UNII-3	14.25	14.20	0.05
	5G 11AC40 UNII-1	14.55	14.33	0.22
	5G 11AC40 UNII-2A	14.36	14.18	0.18
	5G 11AC40 UNII-2C	13.87	13.84	0.03
	5G 11AC40 UNII-3	13.86	13.55	0.31
	5G 11AC80 UNII-1	14.08	13.98	0.1
	5G 11AC80 UNII-2A	14.05	13.90	0.15
	5G 11AC80 UNII-2C	13.90	13.88	0.02
	5G 11AC80 UNII-3	13.50	13.42	0.08

Conclusion:
Conducted Power and Radiated spurious emission test against the variant model based on the worst-case condition from the original model was performed in this filing to demonstrate the test data from original model remains representative for the variant model.

Based on the spot check test result, the test data from the original model is representative for the variant model. The power level and RSE spot check are shown within expected level compliant to limit line.

We are using power measurements from the original parent model reports to list on the grant.

The same DFS detection mechanism/software is used in the variant. Hence, there is no spot check data for DFS hand-shaking mechanism.

We confirm that the test data reuse policy of FCC KDB 484596 D01 Referencing Test Data v01 has been followed and the test data as referenced from the parent model report represents compliance with new FCC ID.

3 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 12, 2022	Feb. 08, 2023	Oct. 11, 2023	Conducted (TH01-KS)
Pulse Power Senor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 05, 2023	Feb. 08, 2023	Jan. 04, 2024	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 05, 2023	Feb. 08, 2023	Jan. 04, 2024	Conducted (TH01-KS)

4 Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.10-2013. All the measurement uncertainty value were shown with a coverage K=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

Uncertainty of Conducted Measurement

Test Item	Uncertainty
Conducted Power	**±0.46 dB**

——— THE END ———