



SPOT CHECK EVALUATION

FCC ID : N7NEM75Y
Equipment : Radio Module
Brand Name : AirPrime
Model Name : EM7595
Applicant : Sierra Wireless, ULC
13811 Wireless Way, Richmond, BC V6V 3A4 Canada
Manufacturer : Sierra Wireless, ULC
13811 Wireless Way, Richmond, BC V6V 3A4 Canada
Standard : 47 CFR Part 2, 22(H), 24(E), 27, 90(R), 90(S), 96

The product was received on Aug. 09, 2023 and testing was performed from Aug. 10, 2023 to Aug. 17, 2023. We, Sporton International Inc. EMC & Wireless Communications Laboratory, 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 spot check report apply exclusively to the tested model / sample. Without written approval from Sporton International Inc. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Approved by: Louis Wu

Sporton International Inc. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)



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History of this test report

Version	Description	Issue Date
01	Initial issue of report	Sep. 04, 2023



1. Introduction Section

FCC ID: N7NEM75T and FCC ID: N7NEM75Y (variant model) use the same identical internal printed circuit board layouts, and based on their similarity, spot check and data referencing for the FCC Part 22, 24, 27, 90, 96 (equipment class: PCB, CBE) has been used following FCC KDB 484596 D01 v01. The spot check data in this report is used to justify the data reuse.

The applicant should take full responsibility that the test data as referenced in this report represent compliance for this FCC ID (FCC ID: N7NEM75Y).



2. Model Difference Information

N7NEM75T and N7NEM75Y use the identical internal printed circuit board layout, and the major differences which may relate to RF are listed below:

EM7595 which is a Cat 12 variant of EM7590:

- HW is 100% identical.
- FW is using a new baseline that supports Cat 12.
- For the category change to added 3CA combos in downlink.
- There is no impact on powers and RF characteristic for FW category change.

The detail of similarity and difference is illustrated in the operational description. Based on the information, spot check of conducted power and emission level was performed and presented in this report to justify the data referencing.



3. Spot Check Verification Data Section

Conducted power test and radiated spurious emission test configurations were selected from the worst cases identified in the parent model and tested to demonstrate the test data from original model remains representative for the variant model.

Summary for Power and RSE spot check for each reference report is listed as below:

Test Item	Mode	N7NEM75T Parent Worst Result	N7NEM75Y Variant Check Result	Difference (dB)
Conducted Power (dBm)	WWAN WCDMA Band 2	23.28	23.64	0.36
	WWAN WCDMA Band 4	23.66	23.99	0.33
	WWAN WCDMA Band 5	23.33	23.90	0.57
	WWAN LTE Band 2	23.62	23.75	0.13
	WWAN LTE Band 4	23.80	23.80	0.00
	WWAN LTE Band 5	23.77	23.95	0.18
	WWAN LTE Band 7	23.98	23.97	-0.01
	WWAN LTE Band 12	23.36	23.82	0.46
	WWAN LTE Band 13	23.44	23.95	0.51
	WWAN LTE Band 14	23.44	23.81	0.37
	WWAN LTE Band 25	23.63	23.82	0.19
	WWAN LTE Band 26	23.88	23.90	0.02
	WWAN LTE Band 41	23.32	23.86	0.54
	WWAN LTE Band 48	22.88	22.75	-0.13
	WWAN LTE Band 66	23.93	23.92	-0.01
	WWAN LTE Band 71	23.45	23.65	0.20
	WWAN LTE CA 5B	23.92	23.05	-0.87
	WWAN LTE CA 7C	23.98	23.40	-0.58
	WWAN LTE CA 41C	23.86	23.98	0.12
	WWAN LTE CA 48C	22.64	22.65	0.01
Radiated Spurious Emission (dBm)	WWAN WCDMA Band 5	-49.83	-49.59	0.24
	WWAN LTE Band 13	-64.17	-63.33	0.84
	WWAN LTE Band 14	-63.44	-63.01	0.43
	WWAN LTE CA 41C	-48.46	-47.18	1.28
	WWAN LTE Band 48	-41.57	-46.20	-4.63

**Conclusion:**

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.

The spot check emission level is not degraded more than 3dB, and the emission level is compliant, data referencing is justified according to the guidance in the KDB inquiry.



4. Reference detail Section

Rule Part	Equipment Class	Wireless Technology	Frequency Band (MHz)	Reference FCC ID (Parent)	Type Grant/ Permissive Change	Reference Title	FCC ID Filling (Variant)
22, 24, 27, 90, 96	PCB	WCDMA	2/4/5	N7NEM75T	Original Grant	FG242018A	N7NEM75Y
	CBE	LTE	2/4/5/7/12/13/14/25/ 26/41/48/66/71 ULCA 5B/7C/41C/48C	N7NEM75T	Original Grant	FG242018B FG242018C FG242018D FG242018E FG242018F	N7NEM75Y



5. List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N-06	35419 & 03	30MHz~1GHz	Apr. 23, 2023	Aug. 11, 2023~ Aug. 14, 2023	Apr. 22, 2024	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Dec. 01, 2022	Aug. 11, 2023~ Aug. 14, 2023	Nov. 30, 2023	Radiation (03CH07-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Feb. 28, 2023	Aug. 11, 2023~ Aug. 14, 2023	Feb. 27, 2024	Radiation (03CH07-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1590075	1GHz~18GHz	Apr. 20, 2023	Aug. 11, 2023~ Aug. 14, 2023	Apr. 19, 2024	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10MHz~1GHz	Oct. 03, 2022	Aug. 11, 2023~ Aug. 14, 2023	Oct. 02, 2023	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~26.5GHz	Mar. 24, 2023	Aug. 11, 2023~ Aug. 14, 2023	Mar. 23, 2024	Radiation (03CH07-HY)
Preamplifier	EMEC	EM18G40G	0600789	18-40GHz	Jul. 25, 2023	Aug. 11, 2023~ Aug. 14, 2023	Jul. 24, 2024	Radiation (03CH07-HY)
Spectrum Analyzer	Agilent	N9030A	MY52350276	3Hz~44GHz	Mar. 28, 2023	Aug. 11, 2023~ Aug. 14, 2023	Mar. 27, 2024	Radiation (03CH07-HY)
Filter	Microwave	H1G013G1	SN477215	1GHz High Pass Filter	Oct. 29, 2022	Aug. 11, 2023~ Aug. 14, 2023	Oct. 28, 2023	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY15682/4	30MHz to 18GHz	Feb. 22, 2023	Aug. 11, 2023~ Aug. 14, 2023	Feb. 21, 2024	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY24971/4	9kHz to 18GHz	Feb. 22, 2023	Aug. 11, 2023~ Aug. 14, 2023	Feb. 21, 2024	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY28655/4	9kHz to 18GHz	Feb. 22, 2023	Aug. 11, 2023~ Aug. 14, 2023	Feb. 21, 2024	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126	532078/126E	30MHz~18GHz	Sep. 16, 2022	Aug. 11, 2023~ Aug. 14, 2023	Sep. 15, 2023	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY2858/2	18GHz~40GHz	Feb. 22, 2023	Aug. 11, 2023~ Aug. 14, 2023	Feb. 21, 2024	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	801606/2	9KHz ~ 40GHz	Apr. 20, 2023	Aug. 11, 2023~ Aug. 14, 2023	Apr. 19, 2024	Radiation (03CH07-HY)
Controller	EMEC	EM1000	N/A	Control Ant Mast	N/A	Aug. 11, 2023~ Aug. 14, 2023	N/A	Radiation (03CH07-HY)
Controller	MF	MF-7802	N/A	Control Turn table	N/A	Aug. 11, 2023~ Aug. 14, 2023	N/A	Radiation (03CH07-HY)
Antenna Mast	EMEC	AM-BS-4500E	N/A	Boresight mast 1M~4M	N/A	Aug. 11, 2023~ Aug. 14, 2023	N/A	Radiation (03CH07-HY)
Turn Table	ChainTek	Chaintek 3000	N/A	0~360 Degree	N/A	Aug. 11, 2023~ Aug. 14, 2023	N/A	Radiation (03CH07-HY)
Attenuator	HONOVA	5910 SMA-50-005-1 9-NE	ATT-36	N/A	Oct. 29, 2022	Aug. 11, 2023~ Aug. 14, 2023	Oct. 28, 2023	Radiation (03CH07-HY)
Software	Audix	E3	N/A	N/A	N/A	Aug. 11, 2023~ Aug. 14, 2023	N/A	Radiation (03CH07-HY)
USB Data Logger	TECPEL	TR-32	HE17XB2495	N/A	Mar. 14, 2023	Aug. 11, 2023~ Aug. 14, 2023	Mar. 13, 2024	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	18GHz~40GHz	Nov. 24, 2022	Aug. 11, 2023~ Aug. 14, 2023	Nov. 23, 2023	Radiation (03CH07-HY)
Signal Generator	Rohde & Schwarz	SMF100A	101107	100kHz~40GHz	Jan. 11, 2023	Aug. 11, 2023~ Aug. 14, 2023	Jan. 10, 2024	Radiation (03CH07-HY)
Horn Antenna	ESCO	3117	00066584	1GHz~18GHz	Dec. 13, 2022	Aug. 11, 2023~ Aug. 14, 2023	Dec. 12, 2023	Radiation (03CH07-HY)



Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Sep. 20, 2022	Aug. 16, 2023~ Aug. 17, 2023	Sep. 19, 2023	Radiation (03CH12-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N -06	37059 & 01	30MHz~1GHz	Nov. 10, 2022	Aug. 16, 2023~ Aug. 17, 2023	Nov. 09, 2023	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120 D	9120D-1328	1GHz~18GHz	Dec. 15, 2022	Aug. 16, 2023~ Aug. 17, 2023	Dec. 14, 2023	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120 D	9120D-02294	1GHz~18GHz	Jun. 30, 2023	Aug. 16, 2023~ Aug. 17, 2023	Jun. 29, 2024	Radiation (03CH12-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA9170	00993	18GHz~40GHz	Nov. 24, 2022	Aug. 16, 2023~ Aug. 17, 2023	Nov. 23, 2023	Radiation (03CH12-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA9170	00994	18GHz~40GHz	Nov. 04, 2022	Aug. 16, 2023~ Aug. 17, 2023	Nov. 03, 2023	Radiation (03CH12-HY)
Preamplifier	COM-POWER	PA-103A	161241	10MHz~1GHz	Oct. 03, 2022	Aug. 16, 2023~ Aug. 17, 2023	Oct. 02, 2023	Radiation (03CH12-HY)
Preamplifier	Agilent	8449B	3008A02375	1GHz~26.5GHz	May 23, 2023	Aug. 16, 2023~ Aug. 17, 2023	May 22, 2024	Radiation (03CH12-HY)
Preamplifier	E-INSTRUME NT TECH LTD.	ERA-100M-18 G-56-01-A70	EC1900249	1GHz-18GHz	Dec. 21, 2022	Aug. 16, 2023~ Aug. 17, 2023	Dec. 20, 2023	Radiation (03CH12-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz~40GHz	Dec. 07, 2022	Aug. 16, 2023~ Aug. 17, 2023	Dec. 06, 2023	Radiation (03CH12-HY)
Spectrum Analyzer	Agilent	N9010A	MY53470118	10Hz~44GHz	Jan. 10, 2023	Aug. 16, 2023~ Aug. 17, 2023	Jan. 09, 2024	Radiation (03CH12-HY)
Filter	Wainwright	WHKX8-5872. 5-6750-18000- 40ST	SN2	6.75GHz High Pass Filter	Mar. 14, 2023	Aug. 16, 2023~ Aug. 17, 2023	Mar. 13, 2024	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	803951/2	9kHz~30MHz	Mar. 07, 2023	Aug. 16, 2023~ Aug. 17, 2023	Mar. 06, 2024	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126E	0058/126E	30MHz~18GHz	Dec. 20, 2022	Aug. 16, 2023~ Aug. 17, 2023	Dec. 19, 2023	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30MHz~40GHz	Dec. 20, 2022	Aug. 16, 2023~ Aug. 17, 2023	Dec. 19, 2023	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	803953/2	30MHz~40GHz	Dec. 20, 2022	Aug. 16, 2023~ Aug. 17, 2023	Dec. 19, 2023	Radiation (03CH12-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Aug. 16, 2023~ Aug. 17, 2023	N/A	Radiation (03CH12-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Aug. 16, 2023~ Aug. 17, 2023	N/A	Radiation (03CH12-HY)
Software	Audix	E3 6.2009-8-24	RK-000989	N/A	N/A	Aug. 16, 2023~ Aug. 17, 2023	N/A	Radiation (03CH12-HY)
Signal Generator	Rohde & Schwarz	SMF100A	101107	100kHz~40GHz	Jan. 11, 2023	Aug. 16, 2023~ Aug. 17, 2023	Jan. 10, 2024	Radiation (03CH12-HY)
Radio Communicatio n Analyzer	Anritsu	MT8821C	6262025353	LTE FDD/TDD LTE-2CC DLCA/ULCA	Oct. 13, 2022	Aug. 10, 2023~ Aug. 17, 2023	Oct. 12, 2023	Conducted (TH03-HY)
Base Station	Rohde & Schwarz	CMU200	117995	GSM / GPRS / WCDMA / CDMA	Aug. 06, 2023	Aug. 10, 2023~ Aug. 17, 2023	Aug. 05, 2024	Conducted (TH03-HY)
Hygrometer	Testo	608-H11	34893240	NA	Nov. 17, 2022	Aug. 10, 2023~ Aug. 17, 2023	Nov. 16, 2023	Conducted (TH03-HY)