SPOT CHECK EVALUATION

FCC ID	:	**RI7FN990A28**
Equipment	:	**5G NR Module**
Brand Name	:	**Telit**
Model Name	:	**FN990A28**
Marketing Name	:	**FN990A28**
Applicant	:	**Telit Communications S.p.A.** **Via Stazione Di Prosecco 5/B, Trieste 34010, Italy**
Manufacturer	:	**Telit Communications S.p.A.** **Via Stazione Di Prosecco 5/B, Trieste 34010, Italy**
Standard	:	**47 CFR Part 2, 22(H), 24(E), 27, 90(R), 90(S), 96**

The product was received on Jan. 29, 2024 and testing was performed from Feb. 19, 2024 to May 22, 2024. We, Sporton International Inc. Wensan 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 of Sporton International Inc. Wensan Laboratory, the test report shall not be reproduced except in full.

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Approved by: Louis Wu

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History of this test report

Version	Description	Issue Date
01	Initial issue of report	Jun. 07, 2024

1. Introduction Section

This Equipment Compliance Review (ECR) inquiry seeks confirmation on whether the FCC will permit the Applicant to apply the data reference procedures outlined in KDB Publication 484596 to certify the variant model A28 by referencing the test data from the parent model, A40, as a reference model.

Both models were previously certified and granted equipment authorization by the FCC. Now, new 5G NR frequency bands (n12, n13, n14, n26) and additional bandwidths in other existing bands will be added to both models via a software update.

The proposed certification process entails first testing and certifying the parent model A40 via an FCC permission change. Then, given FCC approval of the data reference plan, the variant model A28 will reference the parent model test data to demonstrate compliance and then use the FCC permission change to update FCC grants. This approach will enable continuous compliance with relevant FCC rules for both models, including Parts 2, 22, 24, 27, 90, and 96. Confirmation of the permissible use of this data reference process is the purpose of this ECR inquiry.

2. Model Difference Information

The key features and the difference between the two models are below:

Radio	Parent model, A40, as Reference model (FCC ID: RI7FN990A40)	Variant model, A28 (FCC ID: RI7FN990A28)	Note
5G NR	FR1(Sub 6G), Rel 16 SA: UL 900Mbps DL 4.1Gbps NSA: UL 550Mbps DL 4.9Gbps	FR1(Sub 6G), Rel 16 SA: UL 900Mbps DL 2.5Gbps NSA: UL 550Mbps DL 3.4Gbps	UL: same Tx spec. DL: change Rx spec.
4G (LTE)	UL: CAT. 18 (211Mbps), Rel 16 DL: CAT. 20 (2Gbps)	UL: CAT. 18 (211Mbps), Rel 16 DL: CAT. 20 (1.6Gbps)	UL: same Tx spec. DL: change Rx spec.
3G	HSPA+ Rel8 up to 42/11Mbps in DL/UL	HSPA+ Rel8 up to 42/11Mbps in DL/UL	Same Radio spec.

The following is the details of difference between the two models. Both utilize the same PCB layout with the following primary changes:

Item #1: Main chipset change from SDX65 to SDX 62 (Pin to Pin compatible), impacting LTE and 5GNR receiver performance rather than transmitter performance.

Item #2: Changed memory size, affecting non-RF units.

Item #3: One SDR735 RF transceiver removed in variant model A28, going from dual SDR735 chips in parent model A40 to a single SDR735 (#1) chip. The variant model A28 using single SDR735 have less CA/ENDC capability in Downlink than dual SDR735 in parent model A40. All transmit controls are connected to the remaining SDR735 #1 chip, resulting in no difference in transmit performance between the two models. Relevant schematics and partial RF block diagrams in the Change Note illustrate the de-mounted transceiver. The detail of similarity and difference is illustrated in the operational description.

Changes:

The 5G NR frequency bands (n12, n13, n14, n26) and additional bandwidths (colored in yellow) in other existing bands will be added to both models via a software update as shown in the table below.

Band	Originally Certified BWs (MHz)	Additionally Add new BWs(MHz)	Note
n2	5, 10, 15, 20	-	
n5	5, 10, 15, 20	-	
n7	5, 10, 15, 20	25, 30, 40	
n12	-	5, 10, 15	New bands are enabled
n13	-	5, 10	New bands are enabled and 5GNR SA mode Only
n14	-	5, 10	New bands are enabled
n25	5, 10, 15, 20	25, 30, 35, 40	
n26	-	5, 10, 15, 20	New bands are enabled
n30	10	5	
n38	20, 30, 40	10, 15	
n41	20, 30, 40, 50, 60, 80, 90, 100	10, 15	
n48	20, 40	10, 15, 30, 50, 60, 80, 90, 100	5GNR SA mode Only 50, 60, 80, 90, 100 MHz (DL Only)
n66	5, 10, 15, 20, 30	25, 35, 40	
n71	5, 10, 15, 20	25, 30	
n77	20, 30, 40, 60, 80, 100	10, 15, 50, 70, 90	
n78	10, 20, 30, 40, 50, 60, 70, 80, 90, 100	15	

Assessment plan:

As the key transmit components and performance are the same between parent and variant model. The main changes of receiver performance and non-RF components should not substantially impact emissions. Also, the changed components have been thoroughly reviewed and confirmed to not influence any transmitter parameters or emissions. The assessment plan will verify the conducted power, peak-to-average ratio and unwanted emission (Band edge and spurious emissions) from the worst cases identified in the parent model, and ensure that the fundamental emission stays within the authorized frequency block. When new spot-check data from the variant model keep within 3dB variation between parent and variant models, the data reference can be applied for variant model. The applicant should take full responsibility that the test data as referenced in this document represent compliance for this variant model: A28.

The proposed assessment plan

FCC Std. Clause	Test Items	Data Referencing	Action items	Assessment
§2.1046	Conducted Output Power	Y	Spot-check	Deviation (d_{dB}) < *3 dB*
§22.913 (a)(5) §27.50 (b)(10) §27.50 (c)(10) §90.542 (a)(7) §90.635	Effective Radiated Power	Y	Spot-check	Deviation (d_{dB}) < *3 dB*
§24.232 (c) §27.50 (a)(3) §27.50 (d)(4) §27.50 (h)(2) §27.50 (k)(3) §27.50 (j)(3) §96.41	Equivalent Isotropic Radiated Power	Y	Spot-check	Deviation (d_{dB}) < *3 dB*
§24.232 (d) §27.50 (d)(5) §27.50 (k)(4) §27.50 (j)(4) §96.41	Peak-to-Average Ratio	Y	Spot-check	Deviation (d_{dB}) < *3 dB*

FCC Std. Clause	Test Items	Data Referencing	Action items	Assessment
§2.1049 §90.209 §96.41	Occupied Bandwidth	Y	Spot-check	Within the authorized frequency block
§2.1051 §2.1053 §22.917 (a) §24.238 (a) §27.53 (c)(2)(4) §27.53 (g) §27.53 (h) §27.53 (a)(4) §27.53 (l)(2) §27.53 (n)(2) §27.53 (m)(4) §90.543 (e)(2) §90.691 §96.41	Conducted Band Edge Measurement	Y	Spot-check	Deviation (d_{dB}) < *3 dB*
§2.1051 §90.210 (n)	Emission Mask	Y	Spot-check	Deviation (d_{dB}) < *3 dB*
§2.1051 §2.1053 §22.917 (a) §24.238 (a) §27.53 (c)(2) §27.53 (g) §27.53 (h) §27.53 (a)(4) §27.53 (l)(2) §27.53 (n)(2) §27.53 (m)(4) §90.543 (e)(3) §90.691 §96.41	Conducted Spurious Emission	Y	Spot-check	Deviation (d_{dB}) < *3 dB*

FCC Std. Clause	Test Items	Data Referencing	Action items	Assessment
§2.1055 §22.355 §24.235 §27.54 §90.213 §90.539 (e)	Frequency Stability Temperature & Voltage	Y	Spot-check	Within the authorized frequency block
§2.1053 §22.917 (a) §24.238 (a) §27.53 (a)(4) §27.53 (c)(2) §27.53 (f) §27.53 (g) §27.53 (h) §27.53 (m)(4) §27.53 (l)(2) §27.53 (n)(2) §90.543 (e)(3) §90.543 (f) §90.691 §96.41	Radiated Spurious Emission	Y	Spot-check	Deviation (d_{dB}) < *3 dB*

3. Spot Check Verification Data Section

The spot check test configurations were selected from the worst and representative case in the parent model and tested to demonstrate the test data from original model remains representative for the variant model.

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

Test Item	Mode	RI7FN990A40 Parent Worst Result	RI7FN990A28 Variant Check Result	Difference (dB)
Conducted Power (dBm)	WWAN NR n7	23.37	23.61	0.24
	WWAN NR n12	23.39	23.38	-0.01
	WWAN NR n13	23.02	22.95	-0.07
	WWAN NR n14	22.94	22.90	-0.04
	WWAN NR n25	23.42	23.32	-0.10
	WWAN NR n26	23.22	23.10	-0.12
	WWAN NR n30	21.92	22.09	0.17
	WWAN NR n38	23.83	23.81	-0.02
	WWAN NR n41	26.62	26.55	-0.07
	WWAN NR n48	21.83	21.90	0.07
	WWAN NR n66	23.75	23.45	-0.30
	WWAN NR n71	23.44	23.46	0.02
	WWAN NR n77 (3450~3550MHz)	26.41	26.10	-0.31
	WWAN NR n77 (3700~3980MHz)	26.02	25.60	-0.42
	WWAN NR n78 (3450~3550MHz)	26.17	26.02	-0.15
	WWAN NR n78 (3700~3800MHz)	25.74	25.75	0.01
	WWAN NR n38 UL MIMO	22.24	22.06	-0.18
	WWAN NR n41 UL MIMO	25.09	25.12	0.03
	WWAN NR n48 UL MIMO (3550~3700MHz)	20.49	20.33	-0.16
	WWAN NR n77 UL MIMO (3450~3550MHz)	24.73	24.71	-0.02
	WWAN NR n77 UL MIMO (3700~3980MHz)	24.23	24.57	0.34
	WWAN NR n78 UL MIMO (3450~3550MHz)	24.59	24.56	-0.02
	WWAN NR n78 UL MIMO (3700~3800MHz)	24.03	24.11	0.08
	WWAN NR n78 UL MIMO (3700~3800MHz)	24.03	24.11	0.08

According to KDB 412172 D01 Power Approach,

EIRP = PT + GT – LC, ERP = EIRP -2.15, where

PT = transmitter output power in dBm

GT = gain of the transmitting antenna in dBi

LC = signal attenuation in the connecting cable between the transmitter and antenna in dB

The MIMO mode is completely uncorrelated, so the directional gain is selected the maximum gain among all antennas.

Test Item	Mode	RI7FN990A40 Parent Worst Result	RI7FN990A28 Variant Check Result	Difference (dB)
Peak-to-Average Ratio (dB)	WWAN NR n7	6.86	6.74	-0.12
	WWAN NR n12	6.60	6.58	-0.02
	WWAN NR n13	6.72	6.66	-0.06
	WWAN NR n14	6.68	6.70	0.02
	WWAN NR n25	6.88	6.72	-0.16
	WWAN NR n26	6.62	6.72	0.10
	WWAN NR n30	6.78	6.80	0.02
	WWAN NR n41	6.66	6.78	0.12
	WWAN NR n48	6.88	8.56	1.68
	WWAN NR n66	6.84	6.62	-0.22
	WWAN NR n71	6.56	6.60	0.04
	WWAN NR n77 (3450~3550MHz)	6.66	6.96	0.30
	WWAN NR n77 (3700~3980MHz)	8.32	6.88	-1.44
	WWAN NR n41 UL MIMO	8.76	8.90	0.14
	WWAN NR n48 UL MIMO (3550~3700MHz)	8.72	8.68	-0.04
	WWAN NR n77 UL MIMO (3450~3550MHz)	8.50	8.74	0.24
	WWAN NR n77 UL MIMO (3700~3980MHz)	8.62	8.58	-0.04

Test Item	Mode	RI7FN990A40 Parent Worst Result	RI7FN990A28 Variant Check Result	Results
26dB Bandwidth (MHz)	WWAN NR n7	41.28	41.24	Within the authorized frequency block
	WWAN NR n12	15.39	15.39	
	WWAN NR n13	10.31	10.29	
	WWAN NR n14	10.36	10.34	
	WWAN NR n25	41.18	41.29	
	WWAN NR n26	20.52	20.54	
	WWAN NR n30	5.32	5.36	
	WWAN NR n41	15.44	15.37	
	WWAN NR n48	31.90	32.08	
	WWAN NR n66	41.18	41.21	
	WWAN NR n71	32.59	32.54	
	WWAN NR n77 (3450~3550MHz)	92.86	92.54	
	WWAN NR n77 (3700~3980MHz)	92.92	92.72	
	WWAN NR n41 UL MIMO	15.61	15.64	
	WWAN NR n48 UL MIMO (3550~3700MHz)	32.54	32.28	
	WWAN NR n77 UL MIMO (3450~3550MHz)	92.90	92.92	
	WWAN NR n77 UL MIMO (3700~3980MHz)	92.90	92.83	

Test Item	Mode	RI7FN990A40 Parent Worst Result	RI7FN990A28 Variant Check Result	Results
Occupied Bandwidth (MHz)	WWAN NR n7	38.86	38.88	Within the authorized frequency block
	WWAN NR n12	14.17	14.17	
	WWAN NR n13	9.34	9.33	
	WWAN NR n14	9.35	9.35	
	WWAN NR n25	38.89	38.82	
	WWAN NR n26	19.04	19.02	
	WWAN NR n30	4.52	4.53	
	WWAN NR n41	13.69	13.67	
	WWAN NR n48	28.23	28.22	
	WWAN NR n66	38.81	38.80	
	WWAN NR n71	28.87	28.83	
	WWAN NR n77 (3450~3550MHz)	87.92	87.66	
	WWAN NR n77 (3700~3980MHz)	88.06	87.22	
	WWAN NR n41 UL MIMO	13.69	13.70	
	WWAN NR n48 UL MIMO (3550~3700MHz)	28.36	28.27	
	WWAN NR n77 UL MIMO (3450~3550MHz)	87.87	87.90	
	WWAN NR n77 UL MIMO (3700~3980MHz)	87.94	87.99	

Test Item	Mode	RI7FN990A40 Parent Worst Result	RI7FN990A28 Variant Check Result	Difference (dB)
Conducted Band Edge / Emission Mask (dBm)	WWAN NR n7	-33.14	-31.88	1.26
	WWAN NR n12	-37.01	-37.14	-0.13
	WWAN NR n13	-27.87	-28.91	-1.04
	WWAN NR n14	-46.19	-46.51	-0.32
	WWAN NR n25	-28.17	-26.31	1.86
	WWAN NR n26	-27.39	-27.37	0.02
	WWAN NR n30	-45.78	-44.92	0.86
	WWAN NR n41	-33.11	-32.39	0.72
	WWAN NR n48	-40.79	-41.05	-0.26
	WWAN NR n66	-25.11	-27.32	-2.21
	WWAN NR n71	-28.78	-28.52	0.26
	WWAN NR n77 (3450~3550MHz)	-31.87	-31.80	0.07
	WWAN NR n77 (3700~3980MHz)	-29.40	-28.77	0.63
	WWAN NR n41 UL MIMO	-30.79	-32.80	-2.01
	WWAN NR n48 UL MIMO (3550~3700MHz)	-41.04	-40.09	0.95
	WWAN NR n77 UL MIMO (3450~3550MHz)	-29.80	-29.75	0.05
	WWAN NR n77 UL MIMO (3700~3980MHz)	-29.31	-29.91	-0.60

Test Item	Mode	RI7FN990A40 Parent Worst Result	RI7FN990A28 Variant Check Result	Difference (dB)
Conducted Spurious Emission (dBm)	WWAN NR n7	-47.86	-48.01	-0.15
	WWAN NR n12	-42.16	-43.50	-1.34
	WWAN NR n13	-32.57	-33.87	-1.30
	WWAN NR n14	-32.67	-33.76	-1.09
	WWAN NR n25	-42.28	-42.82	-0.54
	WWAN NR n26	-33.31	-33.53	-0.22
	WWAN NR n30	-48.05	-50.02	-1.97
	WWAN NR n41	-42.90	-42.50	0.40
	WWAN NR n48	-48.09	-47.79	0.30
	WWAN NR n66	-41.83	-42.70	-0.87
	WWAN NR n71	-44.03	-44.00	0.03
	WWAN NR n77 (3450~3550MHz)	-43.31	-43.60	-0.29
	WWAN NR n77 (3700~3980MHz)	-43.43	-43.26	0.17
	WWAN NR n41 UL MIMO	-40.37	-40.49	-0.12
	WWAN NR n48 UL MIMO (3550~3700MHz)	-44.95	-47.21	-2.26
	WWAN NR n77 UL MIMO (3450~3550MHz)	-42.49	-42.88	-0.39
	WWAN NR n77 UL MIMO (3700~3980MHz)	-42.37	-42.93	-0.56

Test Item	Mode	RI7FN990A40 Parent Worst Result	RI7FN990A28 Variant Check Result	Results
Frequency Stability Temperature & Voltage (ppm)	WWAN NR n7	0.0198	0.0147	Within the authorized frequency block
	WWAN NR n12	0.0136	0.0168	
	WWAN NR n13	0.0155	0.0266	
	WWAN NR n14	0.0146	0.0198	
	WWAN NR n25	0.0243	0.0133	
	WWAN NR n26	0.0211	0.0141	
	WWAN NR n30	0.0245	0.0232	
	WWAN NR n41	0.0220	0.0230	
	WWAN NR n48	0.0185	0.0192	
	WWAN NR n66	0.0213	0.0126	
	WWAN NR n71	0.0184	0.0181	
	WWAN NR n77 (3450~3550MHz)	0.0171	0.0256	
	WWAN NR n77 (3700~3980MHz)	0.0153	0.0206	
	WWAN NR n41 UL MIMO	0.0201	0.0192	
	WWAN NR n48 UL MIMO (3550~3700MHz)	0.0222	0.0189	
	WWAN NR n77 UL MIMO (3450~3550MHz)	0.0242	0.0256	
	WWAN NR n77 UL MIMO (3700~3980MHz)	0.0222	0.0247	

Test Item	Mode	ANT	RI7FN990A40 Parent Worst Result	RI7FN990A28 Variant Check Result	Difference (dB)
Radiated Spurious Emission (dBm)	WWAN NR n7	0	-38.55	-39.32	-0.77
	WWAN NR n12 (EN-DC 2A-n12A)	2+0	-47.03	-49.58	-2.55
	WWAN NR n13	0	-59.08	-59.51	-0.43
	WWAN NR n14	0	-58.01	-58.70	-0.69
	WWAN NR n25	0	-43.70	-44.19	-0.49
	WWAN NR n26	0	-53.21	-53.96	-0.75
	WWAN NR n30	0	-51.95	-54.27	-2.32
	WWAN NR n41	2	-38.61	-38.92	-0.31
	WWAN NR n48 UL MIMO (3550~3700MHz)	3+1	-47.03	-47.59	-0.56
	WWAN NR n66	0	-44.51	-44.78	-0.27
	WWAN NR n71	0	-55.38	-56.45	-1.07
	WWAN NR n77 (3450~3550MHz)	3	-33.91	-31.70	2.21
	WWAN NR n77 UL MIMO (3700~3980MHz)	3+1	-33.47	-30.61	2.86

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 CBE	NR	n7/n12/n13/n14/n25/ n26/n30/n38/n41/n48/ n66/n71/n77/n78 UL MIMO n38/n41/n48/n77/n78	RI7FN990A40	C2PC	FG270608-10A FG270608-10B	RI7FN990A28

5. List of Measuring Equipment

<Radiation for FCC Part 22, 24, 27, 90, 96 >

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Feb. 23, 2024	Mar. 16, 2024~ Mar. 21 2024	Feb. 22, 2025	Radiation (03CH12-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N -06	37059 & 01	30MHz~1GHz	Nov. 03, 2023	Mar. 16, 2024~ Mar. 21 2024	Nov. 02, 2024	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-02114	1GHz~18GHz	Jul. 31, 2023	Mar. 16, 2024~ Mar. 21 2024	Jul. 30, 2024	Radiation (03CH12-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA9170	00993	18GHz-40GHz	Nov. 24, 2023	Mar. 16, 2024~ Mar. 21 2024	Nov. 23, 2024	Radiation (03CH12-HY)
Preamplifier	COM-POWER	PA-103A	161241	10MHz~1GHz	Oct. 02, 2023	Mar. 16, 2024~ Mar. 21 2024	Oct. 01, 2024	Radiation (03CH12-HY)
Preamplifier	Agilent	8449B	3008A02375	1GHz~26.5GHz	May 23, 2023	Mar. 16, 2024~ Mar. 21 2024	May 22, 2024	Radiation (03CH12-HY)
Preamplifier	E-INSTRUMENT TECH LTD.	ERA-100M-18G-56-01-A70	EC1900249	1GHz-18GHz	Dec. 20, 2023	Mar. 16, 2024~ Mar. 21 2024	Dec. 19, 2024	Radiation (03CH12-HY)
Preamplifier	EMEC	EM18G40G	060801	18GHz~40GHz	Jun. 27, 2023	Mar. 16, 2024~ Mar. 21 2024	Jun. 26, 2024	Radiation (03CH12-HY)
Spectrum Analyzer	Agilent	N9010A	MY53470118	10Hz~44GHz	Jan. 10, 2024	Mar. 16, 2024~ Mar. 21 2024	Jan. 09, 2025	Radiation (03CH12-HY)
Filter	Wainwright	WHKX12-900-1000-15000-60SS	SN12	1GHz High Pass Filter	Sep. 11, 2023	Mar. 16, 2024~ Mar. 21 2024	Sep. 10, 2024	Radiation (03CH12-HY)
Filter	Wainwright	WHKX12-2700-3000-18000-60ST	SN2	3GHz High Pass Filter	Mar. 12, 2024	Mar. 16, 2024~ Mar. 21 2024	Mar. 11, 2025	Radiation (03CH12-HY)
Filter	Wainwright	WHKX8-5872.5-6750-18000-40ST	SN2	6.75GHz High Pass Filter	Mar. 12, 2024	Mar. 16, 2024~ Mar. 21 2024	Mar. 11, 2025	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	803951/2	9kHz~30MHz	Mar. 05, 2024	Mar. 16, 2024~ Mar. 21 2024	Mar. 04, 2025	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126E	0058/126E	30MHz~18GHz	Dec. 18, 2023	Mar. 16, 2024~ Mar. 21 2024	Dec. 17, 2024	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30MHz~40GHz	Dec. 18, 2023	Mar. 16, 2024~ Mar. 21 2024	Dec. 17, 2024	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	803953/2	30MHz~40GHz	Dec. 18, 2023	Mar. 16, 2024~ Mar. 21 2024	Dec. 17, 2024	Radiation (03CH12-HY)
Hygrometer	TECPEL	DTM-303B	TP210117	N/A	Oct. 19, 2023	Mar. 16, 2024~ Mar. 21 2024	Oct. 18, 2024	Radiation (03CH12-HY)

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	Mar. 16, 2024~ Mar. 21 2024	N/A	Radiation (03CH12-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Mar. 16, 2024~ Mar. 21 2024	N/A	Radiation (03CH12-HY)
Radio Communication Analyzer	Anritsu	MT8821C	6262257866	N/A	May 08, 2023	Mar. 16, 2024~ Mar. 21 2024	May 07, 2024	Radiation (03CH12-HY)
Radio Communication Test Station	Anritsu	NT8000A	6272337370	N/A	Nov. 14, 2023	Mar. 16, 2024~ Mar. 21 2024	Nov. 13, 2024	Radiation (03CH12-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Mar. 16, 2024~ Mar. 21 2024	N/A	Radiation (03CH12-HY)
Software	Audix	E3 6.2009-8-24	RK-000989	N/A	N/A	Mar. 16, 2024~ Mar. 21 2024	N/A	Radiation (03CH12-HY)

<Conducted for FCC Part 22, 24, 27, 90, 96>

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
DC Power Supply	GW Instek	GPE2323	GET910884	0V~64V ;0A~6A	Nov. 16, 2023	Feb. 19, 2024~ May 22, 2024	Nov. 15, 2024	Conducted (TH03-HY)
Signal Analyzer	Rohde & Schwarz	FSV3044	101049	10Hz~44GHz	Sep. 26, 2023	Feb. 19, 2024~ May 22, 2024	Sep. 25, 2024	Conducted (TH03-HY)
Temperature Chamber	ESPEC	SH-641	92013720	-40℃ ~90℃	Sep. 04, 2023	Feb. 19, 2024~ May 22, 2024	Sep. 03, 2024	Conducted (TH03-HY)
Radio Communication Test Station	Anritsu	MT8000A	6262134933	FR1	Jul. 10, 2023	Feb. 19, 2024~ May 22, 2024	Jul. 09, 2024	Conducted (TH03-HY)
Radio Communication Test Station	Anritsu	MT8000A	6272337370	N/A	Nov. 14, 2023	Feb. 19, 2024~ May 22, 2024	Nov. 13, 2024	Conducted (TH03-HY)
Hygrometer	TECPEL	DTM-303B	TP210073	N/A	Jun. 26, 2023	Feb. 19, 2024~ May 22, 2024	Jun. 25, 2024	Conducted (TH03-HY)

Note: Test equipment calibration is traceable to the procedure of ISO17025.

Appendix A. Setup Photographs

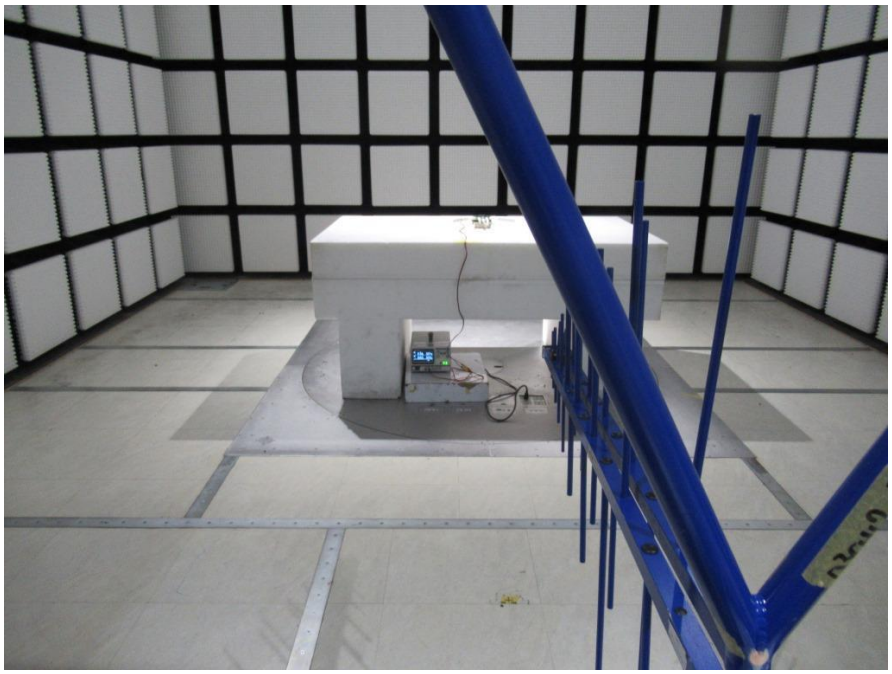
<FCC Part 22, 24, 27, 90, 96>

<Radiated Emission>

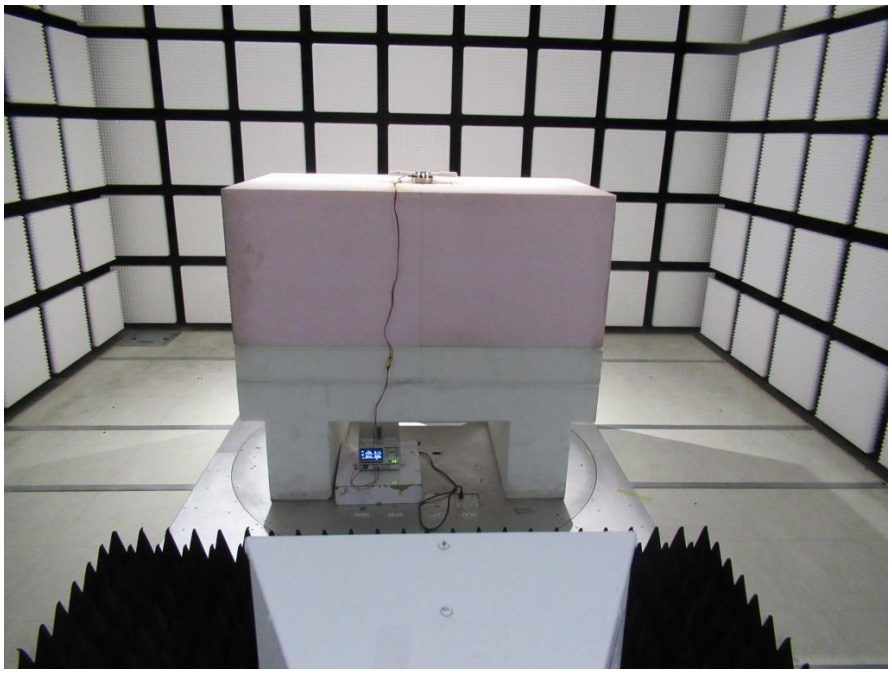
(03CH12-HY)

EUT antenna polarization (Horizontal)

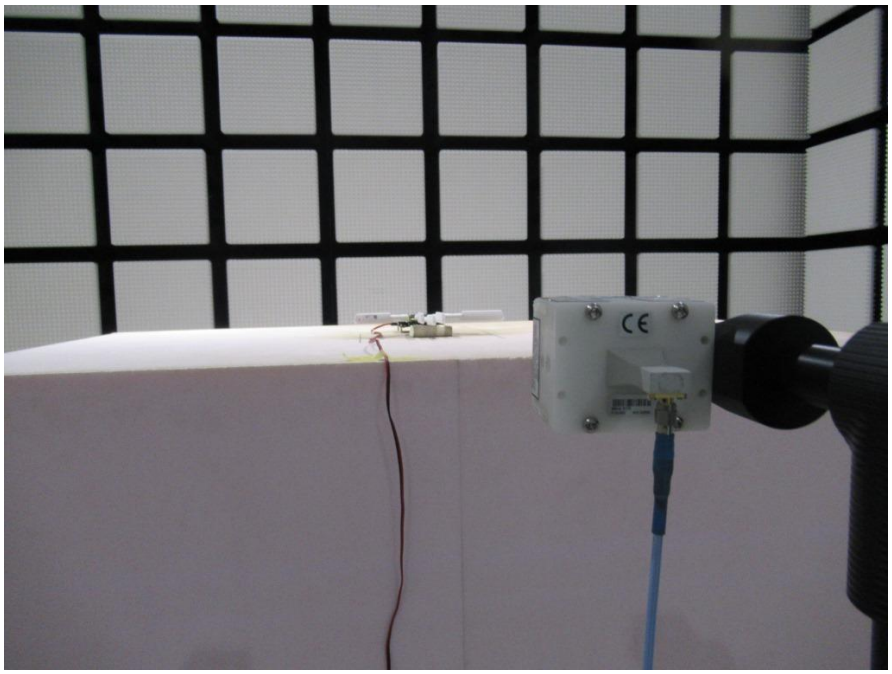
LF



HF



SHF



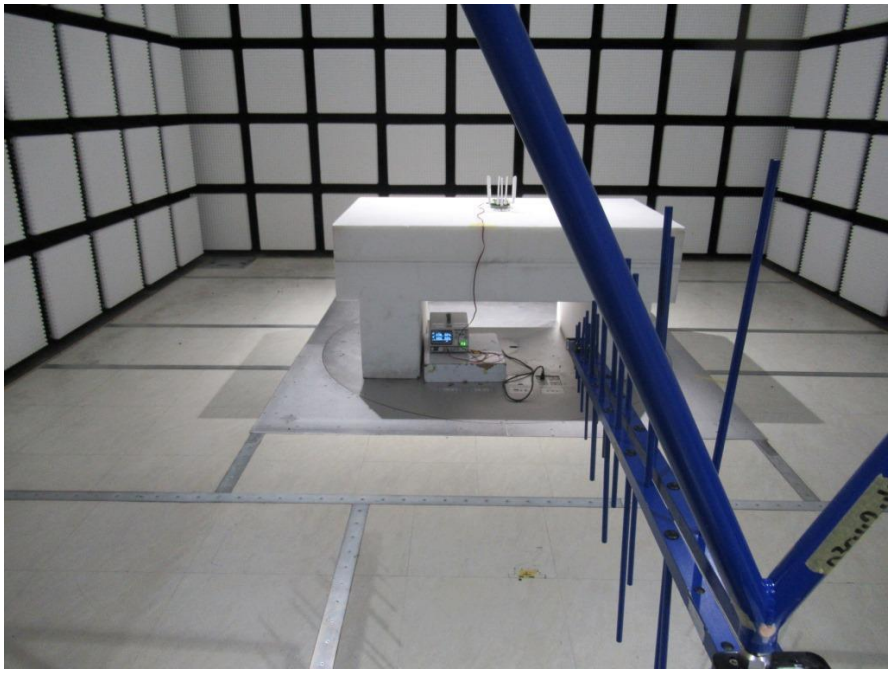
<FCC Part 22, 24, 27, 90, 96>

<Radiated Emission>

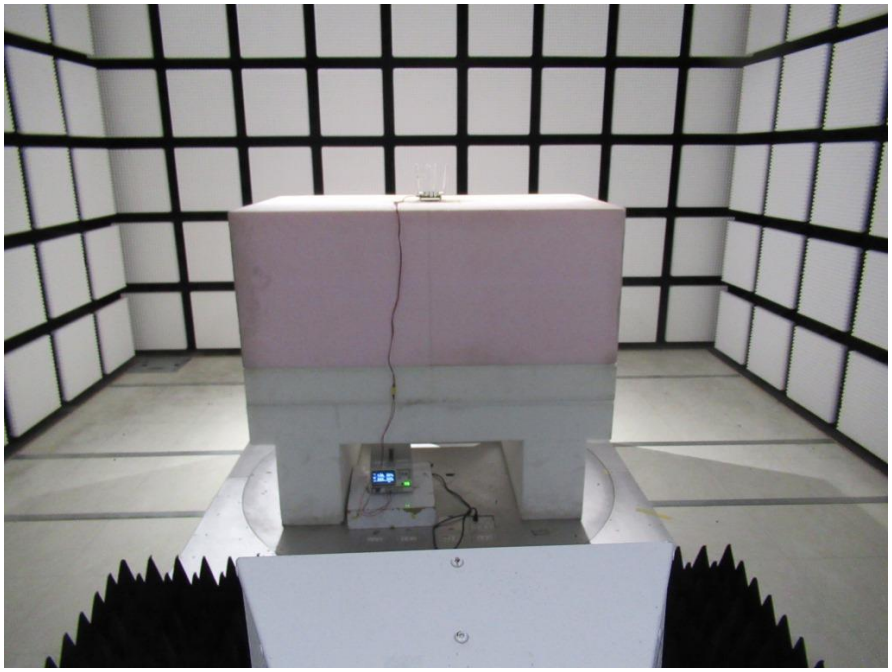
(03CH12-HY)

EUT antenna polarization (Vertical)

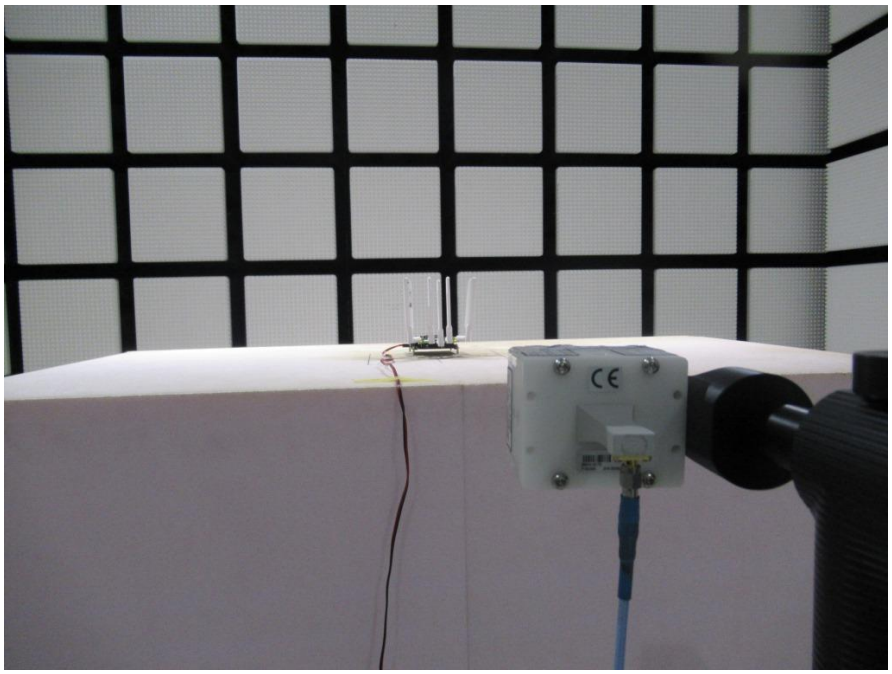
LF



HF



SHF



———THE END———