

TEST REPORT

EVALUATION REPORT

FCC Test for FR-R5G39AO33ASUE

APPLICANT
FRTEK CO., LTD.

DATE OF ISSUE
February 10, 2022

Tested by
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(signature)

Technical Manager
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TEST REPORT EVALUATION Test for FR-R5G39AO33ASUE	DATE OF ISSUE February 10, 2022 Additional Model -
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Applicant	FRTEK CO., LTD. 11-25, Simin-daero 327beon-gil, Dongan-gu, Anyang-si, Gyeonggi-do, Republic of Korea
FCC ID	2AFEG-R5G39AO33ASUE
Equipment Class(es)	B2I
Rule Part(s)	CFR 47 Part 2, Part 30
Application's Statement	The applicant takes full responsibility that the test data referenced below represents compliance for this FCC ID.
Differences Brief Description	Hardware and software of this device are identical to the implementation in 2AFEG-R5G39AO33ASUC The operational description includes detailed information about the changes between the devices. The data from that application has been verified through appropriate spot checks to demonstrate compliance for this device as shown in the summary table below.
Test Reference	KDB 484596 D01 Reference Test Data v01
	The result shown in this test report refer only to the sample(s) tested unless otherwise stated. This test results were applied only to the test methods required by the standard.



REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	February 10, 2022	Initial Release

If this report is required to confirmation of authenticity, please contact to www.hct.co.kr



The detail test data can be found in this documents, Appendix A.

Category	Spot Check	Verdict
Licensed EMC	EIRP DENSITY	Share
	EQUIVALENT ISOTROPIC RADIATED POWER / MEAN OUTPUT POWER AND AMPLIFIER/BOOSTER GAIN	Share

Reference Detail Section

Reference FCC ID	Equipment Class	Report Title	Section
2AFEG-R5G39A033ASUC	B2I	Part 30 Report	5.1. AGC THRESHOLD 5.2. OUT-OF-BAND REJECTION 5.3. OCCUPIED BANDWIDTH / INPUT-VERSUS-OUTPUT SIGNAL COMPARISON 5.4. EIRP DENSITY 5.5. EQUIVALENT ISOTROPIC RADIATED POWER / MEAN OUTPUT POWER AND AMPLIFIER/BOOSTER GAIN



Appendix A. The Spot check test data

1. Summary of the spot check for FR-R5G39A033ASUE

1.1 EIRP DENSITY

[Full RB] Tabular Data of EIRP Density per path

Path	CC	Channel	Frequency (GHz)	Measured Level (dBuV)	Calculated EIRP (dBm/100MHz)	Limit (dBm/100MHz)
A	1	Middle	38.800	79.75	38.92	75

* Calculated EIRP = 79.75 dBμV (measured Value) + 20log(3) – 104.77 + 54.396 (AFCL)

[1 RB] Tabular Data of EIRP Density per path

Path	CC	Channel	Frequency (GHz)	Measured Level (dBuV)	Calculated EIRP (dBm/100MHz)	Limit (dBm/100MHz)
A	1	Middle	38.800	76.85	56.02	75

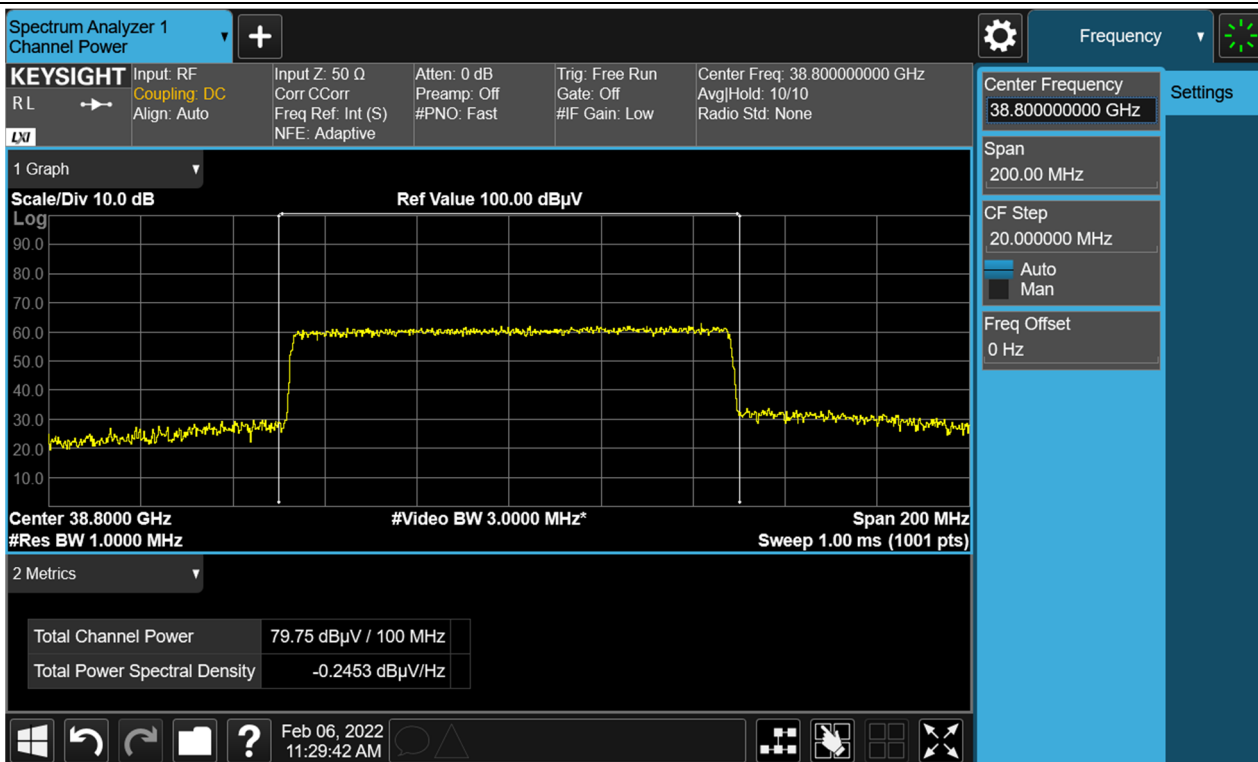
* Calculated EIRP = 76.85 dBμV (measured Value) + 20log(3) – 104.77 + 54.396 (AFCL) + RBW Correction (10log(100/1))

RB Size	Path	CC	Frequency		FR-R5G39A033ASUC (dBm/100MHz)	FR-R5G39A033ASUE (dBm/100MHz)	Deviation (dB)
			MHz	Ch.			
Full RB	A	1	38.800	Middle	38.93	38.92	0.01
1 RB	A	1	38.800	Middle	56.22	56.02	0.20



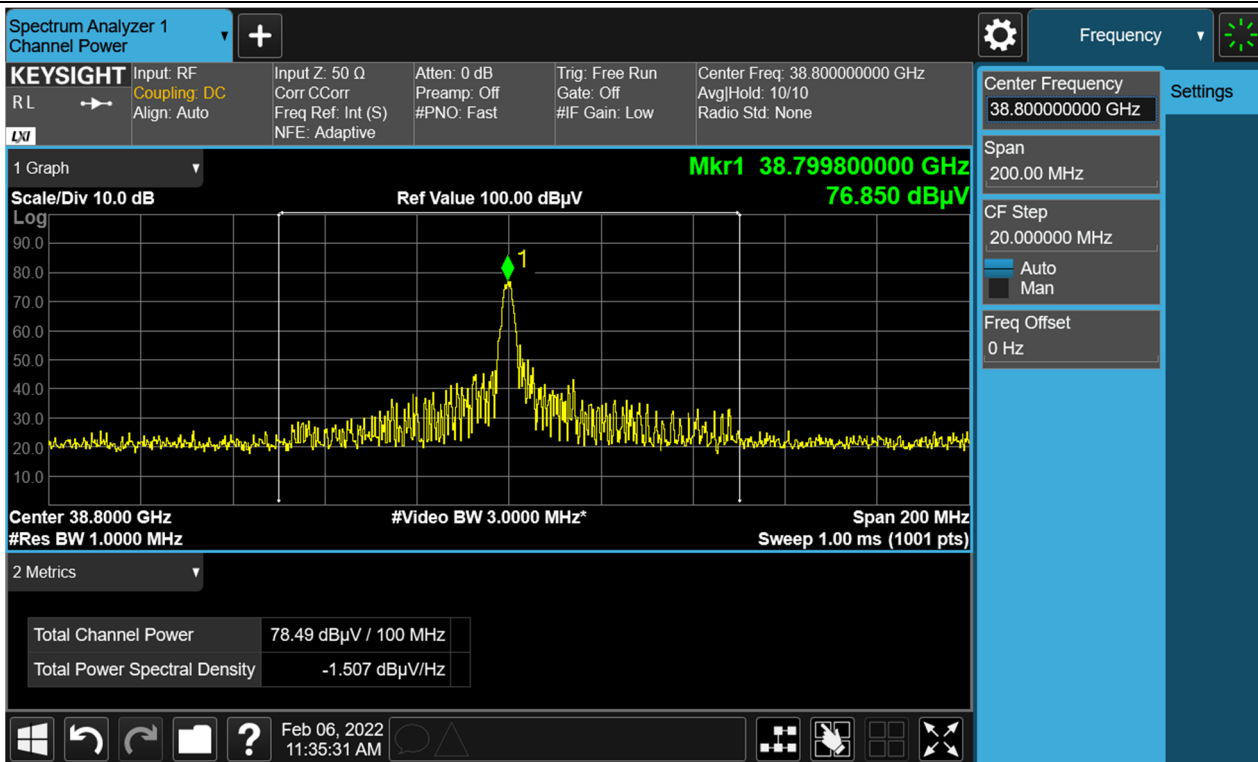
[Full RB] Plot Data of EIRP Density Tabular per path

Path A / 1cc / Middle



[1 RB] Plot Data of EIRP Density Tabular per path

Path A / 1cc / Middle





1.2 EQUIVALENT ISOTROPIC RADIATED POWER / MEAN OUTPUT POWER AND AMPLIFIER/BOOSTER GAIN

[Full RB] Tabular Data of +3 dB above AGC threshold Input & Output Power (E.I.R.P.)

Path	CC	f ₀ Frequency (MHz)	Input Power	Output Power	
			Measured Level (dBm)	Measured Level (dBuV)	Calculated EIRP (dBm)
A	1	38.567	-68.49	80.40	39.51

* Calculated EIRP = 80.40 dBμV (measured Value) + 20log(3) - 104.77 + 54.334 (AFCL)

[1 RB] Tabular Data of +3 dB above AGC threshold Input & Output Power (E.I.R.P.)

Path	CC	f ₀ Frequency (MHz)	Input Power	Output Power	
			Measured Level (dBm)	Measured Level (dBuV)	Calculated EIRP (dBm)
A	1	38.567	-68.59	79.27	38.38

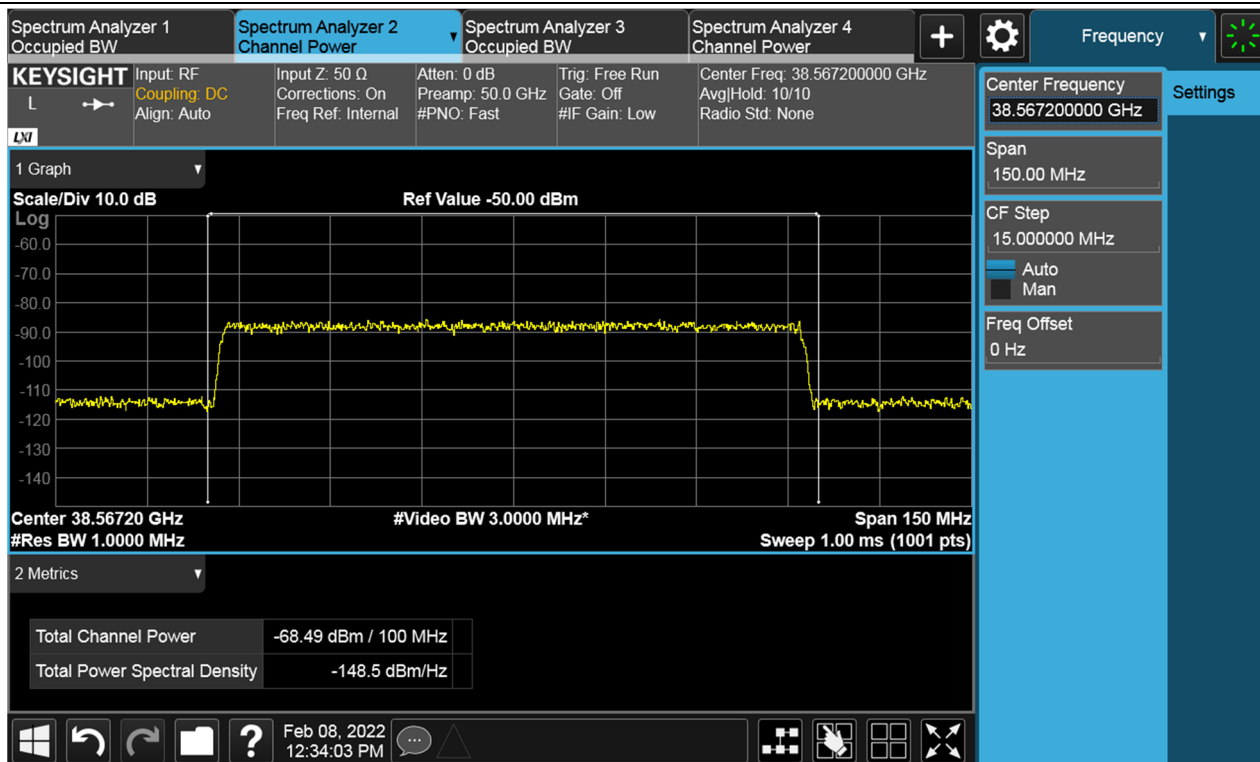
* Calculated EIRP = 79.27 dBμV (measured Value) + 20log(3) - 104.77 + 54.334 (AFCL)

RB Size	Path	CC	Frequency		FR-R5G39A033ASUC (dBm)	FR-R5G39A033ASUE (dBm)	Deviation (dB)
			MHz	Ch.			
Full RB	A	1	38.567	Middle	39.53	39.51	0.02
1 RB	A	1	38.567	Middle	38.53	38.38	0.15

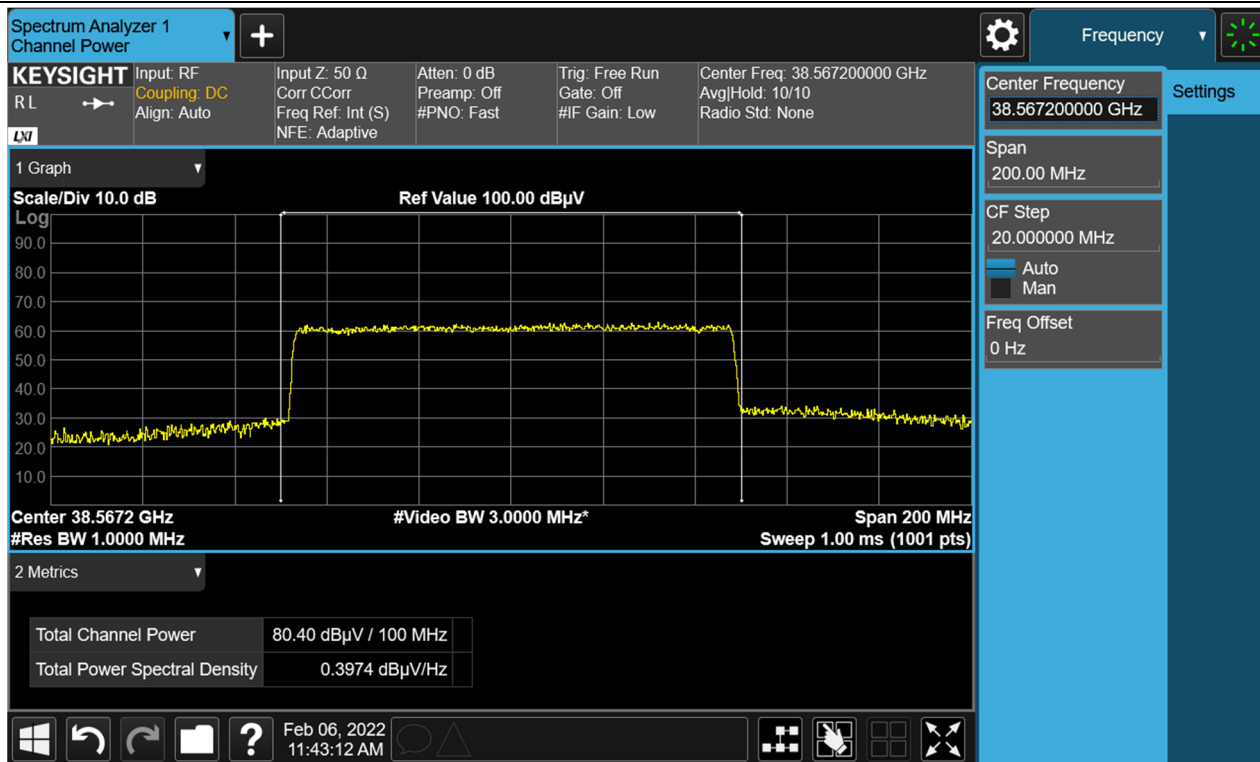


[Full RB] Plot Data of +3 dB above AGC threshold Input & Output Power (E.I.R.P.)

Input Power (E.I.R.P.) / Path A / 1cc



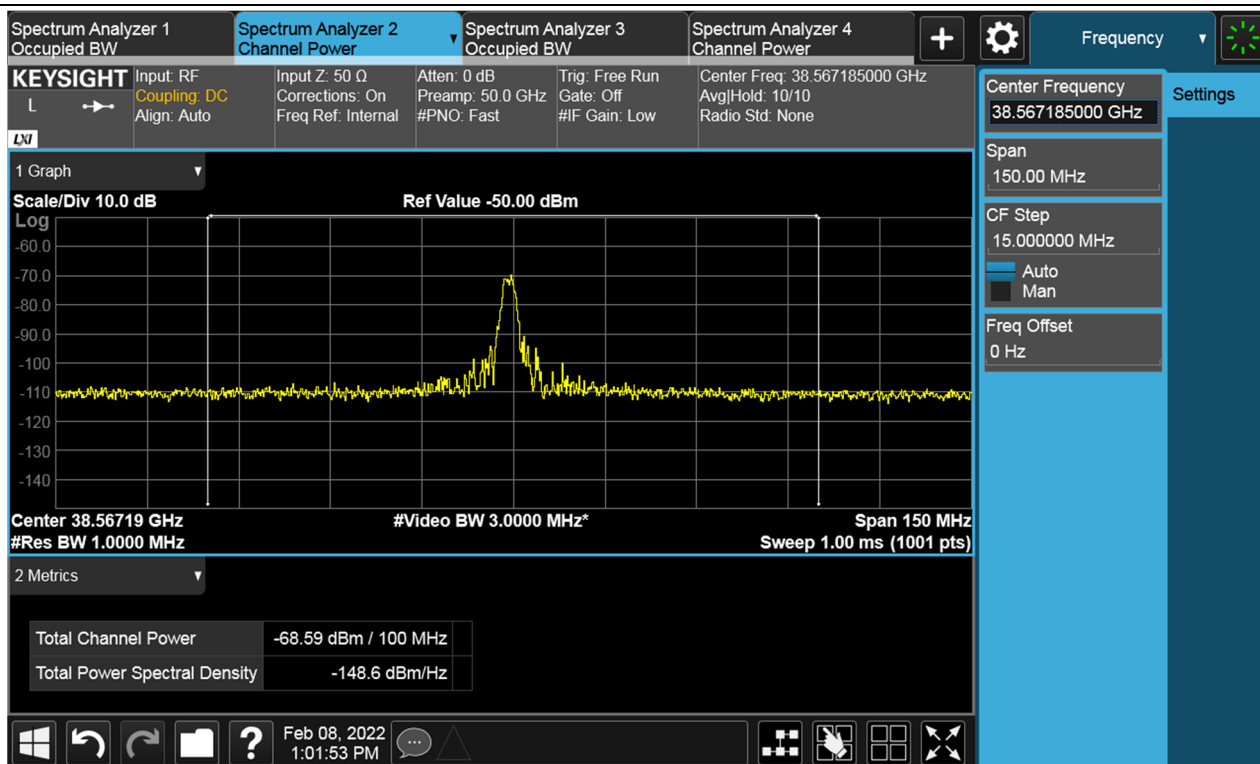
Output Power (E.I.R.P.) / Path A / 1cc



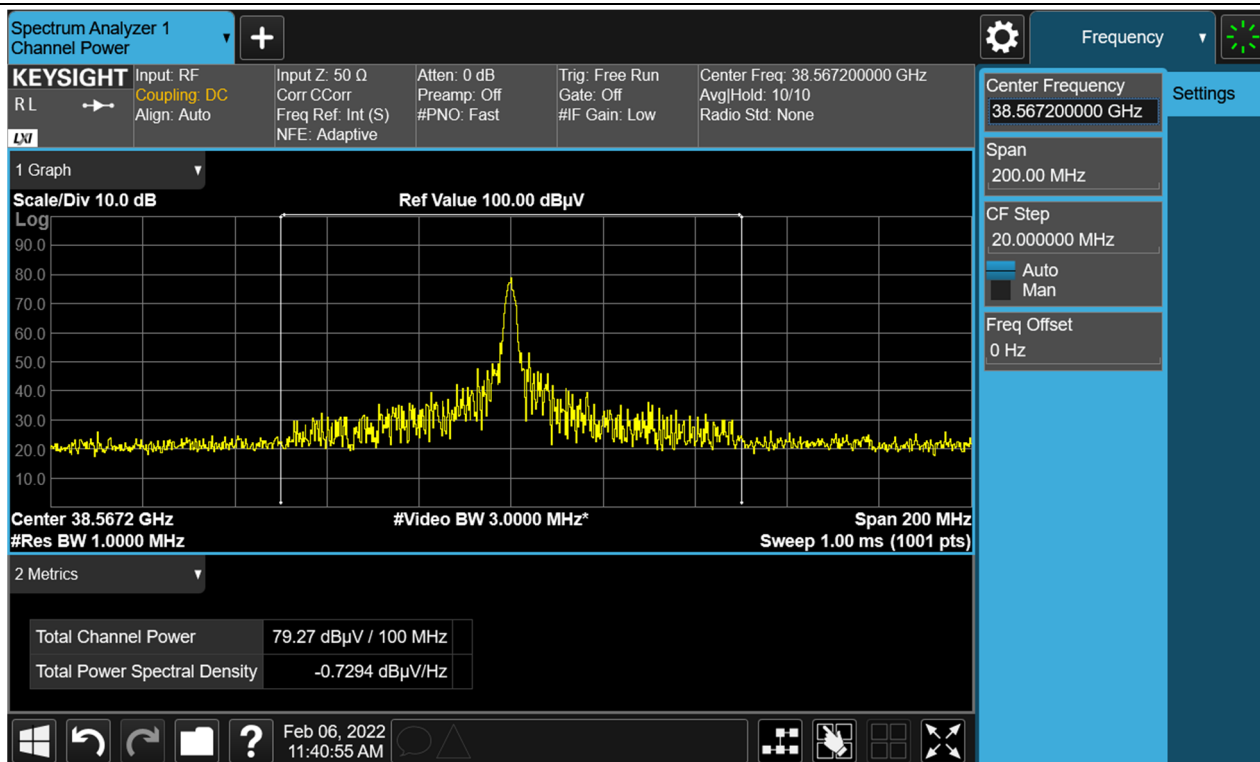


[1 RB] Plot Data of +3 dB above AGC threshold Input & Output Power (E.I.R.P.)

Input Power (E.I.R.P.) / Path A / 1cc



Output Power (E.I.R.P.) / Path A / 1cc





2. List of test equipment

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
PXA Signal Analyzer	N9030B	Agilent	MY60070602	10/22/2022	Annual
Spectrum Analyzer	FSW	Rohde & Schwarz	101256	11/11/2022	Annual
Vector Signal Generator	SMW200A	Rohde & Schwarz	100988	03/15/2022	Annual
DC Power Supply	PWR800L	KIKUSUI	RE001154	03/04/2022	Annual
Controller(Antenna mast)	CO3000	Innco system	CO3000-4p	N/A	N/A
Antenna Position Tower	MA4640/800-XP-EP	Innco system	N/A	N/A	N/A
Controller	2090	Emco	060520	N/A	N/A
Turn Table	Turn Table	Ets	N/A	N/A	N/A
Turn Table	DS2000-S	Innco systems	N/A	N/A	N/A
Amp & Filter Bank Switch Controller	FBSM-01B	TNM system	N/A	N/A	N/A
Low Noise Amplifier	LLAU1183540Q	LTC Microwave	100	09/19/2022	Annual
Loop Antenna	Loop Antenna	Schwarzbeck	1513-175	06/04/2023	Biennial
Hybrid Antenna	VULB 9168	Schwarzbeck	9168-0895	09/04/2022	Biennial
Horn Antenna	BBHA 9120D	Schwarzbeck	02296	05/19/2022	Biennial
Horn Antenna	BBHA 9170	Schwarzbeck	BBHA9170541	11/16/2023	Biennial
Horn Antenna	WR-19 Horn Antenna	OML INC.	M19RH-160419-1	04/23/2022	Biennial
Horn Antenna	WR-19 Horn Antenna	OML INC.	M19RH-160419-2	04/23/2022	Biennial
Horn Antenna	WR-12 Horn Antenna	OML INC.	M12RH-160419-1	04/23/2022	Biennial
Horn Antenna	WR-12 Horn Antenna	OML INC.	M12RH-160419-2	04/23/2022	Biennial
Horn Antenna	WR-08 Horn Antenna	OML INC.	M08RH-160419-2	04/23/2022	Biennial
Horn Antenna	WR-08 Horn Antenna	OML INC.	M08RH-160419-1	04/23/2022	Biennial
Horn Antenna	WR-05 Horn Antenna	OML INC.	M05RH-160419-1	04/23/2022	Biennial
Horn Antenna	WR-05 Horn Antenna	OML INC.	M05RH-160419-2	04/23/2022	Biennial
SA Extension Module	WR19SAX-M	VDI	SAX771	03/17/2022	Annual
SA Extension Module	WR12SAX-M	VDI	SAX773	04/02/2022	Annual
SA Extension Module	WR8.0SAX-M	VDI	SAM779	04/02/2022	Annual
SA Extension Module	WR5.1SAX-M	VDI	SAX 774	04/02/2022	Annual
Source Module	WR-19	OML INC.	S19MS-A-160516-1	09/02/2022	Annual
Source Module	WR-12	OML INC.	S12MS-A-160419-1	09/02/2022	Annual
Source Module	WR-08	OML INC.	S08MS-A-160419-1	09/09/2022	Annual
Source Module	WR-05	OML INC.	S05MS-A-160419-1	09/07/2022	Annual
Temperature and Humidity Chamber	PL-4KP	ESPEC	14021890	08/11/2022	Annual

Note:

1. Equipment listed above that calibrated during the testing period was set for test after the calibration.
2. Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.