

RF Test Report

Applicant: Assetflo Inc.
Address: 9105 Derry Rd., unit 2 Milton, L9T7Y9 Canada
Product: Assetflo 5G Tracker
Model No.: MI-606-V07
Brand Name: Assetflo
FCC ID: 2BNZ6-5GTRACKERR2
Standards: 47 CFR Part 24
47 CFR Part 27
Report No.: PD20250020-R3A
Issue Date: 2025/02/25
Test Result: PASS *

* Testing performed at Hefei Panwin Technology Co., Ltd. on the above equipment indicates the product meets the requirements of the relevant standards.



Reviewed By: Charlie Wang



Approved By: Alec Yang

Hefei Panwin Technology Co., Ltd.

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Revision History

Report No.	Version	Description	Issue Date	Note
PD20250020-R3A	01	Initial Report	2025/02/25	Valid

Remark:

This report verifies the Transmitter Maximum Output Power of worst bands, and the data results did not deteriorate. This testing report only tested Radiated Spurious Emission data, please refer to the module report for other testing items.(Model No.: **nRF9160**, Report No.: 64610RRF.001A1 released by DEKRA on 2020-08-31.)

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Test Summary

LTE Band 2

No.	Test Case	FCC Rules	Limit	Verdict
1	RF Output Power & Effective Radiated Power	§2.1046, §24.232(c)	EIRP ≤2 Watt	Reference report: 64610RRF.001A1
2	Peak-to-Average Ratio	§24.232(d)	≤13 dB	
3	Occupied Bandwidth	§2.1049	No limit.	
4	Conducted Band Edge Measurement	§2.1051, §24.238(a)	≤ -13 dBm/1%*EBW, in 1 MHz bands immediately outside and adjacent to the frequency block.	
5	Spurious Emissions at Antenna Terminals	§2.1051, §24.238(a)	≤ -13 dBm/1 MHz, from 9 kHz to 10 th harmonics but outside authorized operating frequency ranges.	
6	Frequency Stability	§2.1055 §24.235	Within authorized bands of operation/frequency block.	
7	Radiated Spurious Emission	§2.1053, §24.238(a)	≤ -13 dBm/1 MHz.	PASS

LTE Band 4 / 66

No.	Test Case	FCC Rules	Limit	Verdict
1	RF Output Power & Effective Radiated Power	§2.1046, §27.50(d)(4)	EIRP ≤ 1 Watt	Reference report: 64610RRF.001A1
2	Peak-to-Average Ratio	§27.50(d)(5)	≤13 dB	
3	Occupied Bandwidth	§2.1049	No limit.	
4	Conducted Band Edge Measurement	§2.1051, §27.53(h)	≤ -13 dBm/1%*EBW, in 1 MHz bands immediately outside and adjacent to the frequency block.	
5	Spurious Emissions at Antenna Terminals	§2.1051, §27.53(h)	≤ -13 dBm/1 MHz, from 9 kHz to 10 th harmonics but outside authorized operating frequency ranges.	
6	Frequency Stability	§2.1055 §27.54	Within authorized bands of operation/frequency block.	PASS
7	Radiated Spurious Emission	§2.1053, §27.53(h)	≤ -13 dBm/1 MHz.	

LTE Band 12

No.	Test Case	FCC Rules	Limit	Verdict
1	RF Output Power & Effective Radiated Power	§2.1046, §27.50(c)(10)	ERP ≤ 3 Watt	Reference report: 64610RRF.001A1
2	Peak-to-Average Ratio	--	≤13 dB	
3	Occupied Bandwidth	§2.1049	No limit.	
4	Conducted Band Edge Measurement	§2.1051, §27.53(g)	For operations in the 600 MHz band and the 698–746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.	
5	Spurious Emissions at Antenna Terminals	§2.1051, §27.53(g)	FCC: ≤ -13 dBm/100 kHz, from 9 kHz to 10 th harmonics but outside authorized operating frequency ranges.	PASS
6	Frequency Stability	§2.1055 §27.54	Within authorized bands of operation/frequency block.	
7	Radiated Spurious Emission	§2.1053, §27.53(g)	FCC: ≤ -13 dBm/100 kHz.	

Radiated detection date: 2025/02/18 to 2025/02/21

Date of sample received: 2025/02/17

- The samples tested have been evaluated in accordance with the procedures given in the application standards in **Section 2.4** of this report and have been shown to comply with the applicable technical standards.
- All indications of PASS/FAIL in this report are based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.

1 General Information

1.1 Notes of the Test Report

This report is invalid without signature of auditor and approver or with any alterations. The report shall not be partially reproduced without written approval of the testing company. Entrusted test results are only responsible for incoming samples. If there is any objection to the testing report, it shall be raised to the testing company within 15 days from the date of receiving the report. In the test results, "NA" means "not applicable", and the test items marked with "Δ" are subcontracted projects.

1.2 Test Facility

A2LA (Certificate Number: 6849.01)

Hefei Panwin Technology Co., Ltd. has been accredited by American Association for Laboratory Accreditation to perform measurement.

FCC (Designation Number: CN1361, Test Firm Registration Number: 473156)

Hefei Panwin Technology Co., Ltd. has been accredited on the US Federal Communications Commission list of test facilities recognized to perform measurements.

1.3 Testing Laboratory

Company Name	Hefei Panwin Technology Co., Ltd.
Address	Floor 1, Zone E, Plant 2#, Mingzhu Industrial Park, No.106 Chuangxin Avenue, High-tech Zone, Hefei City, Anhui Province, China
Telephone	+86-0551-63811775
Post Code	230031

2 General Description of Equipment under Test

2.1 Details of Application

Applicant	Assetflo Inc.
Applicant Address	9105 Derry Rd., unit 2 Milton, L9T7Y9 Canada
Manufacturer	Assetflo Inc.
Manufacturer Address	9105 Derry Rd., unit 2 Milton, L9T7Y9 Canada

2.2 Details of EUT

Product		Assetflo 5G Tracker							
Model		MI-606-V07							
Hardware Version		MI-606-V07							
Software Version		mfw_nrf9160_1.3.6							
SN		8931681011101165497F							
E-UTRA Specification									
Single Band		FDD Band: 2, 4, 12, 66							
Power Class for LTE		PC3							
Power Supply		External power supply, Typ. 12V DC							
Category		LTE Cat-M1							
Type of Modulation		UL: QPSK, 16QAM							
Antenna Type		☒ Internal ☐ External ☐ Integrated							
Antenna Gain		LTE Band 2: 3.58dBi LTE Band 12: 0.68dBi LTE Band 4: 5.17dBi LTE Band 66: 5.17dBi							
Frequency Band(s)	SISO Band	Supported Channel Bandwidth (MHz)						Tx (MHz)	Rx (MHz)
		1.4	3	5	10	15	20		
	LTE Band 2	v	v	v	v	v	v	1850 to 1910	1930 to 1990
	LTE Band 4	v	v	v	v	v	v	1710 to 1755	2110 to 2155
	LTE Band 12	v	v	v	v	-	-	699 to 716	729 to 746
	LTE Band 66	v	v	v	v	v	v	1710 to 1780	2110 to 2180
Note: The declared of product specification for EUT and/or Antenna presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.									

Support Equipment				
Equipment	Manufacturer	Description	Model	Serial Number
Base Station Simulator	Anritsu	WWAN	MT8821C	PWC0039
DC Power	KEYSIGHT	12V _{DC} power supply	E3640A	PWB0081

2.3 Frequency List of Low/Middle/High Channels

LTE Band 2 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
1.4	Channel	18607	18900	19193
	Frequency	1850.7	1880	1909.3
3	Channel	18615	18900	19185
	Frequency	1851.5	1880	1908.5
5	Channel	18625	18900	19175
	Frequency	1852.5	1880	1907.5
10	Channel	18650	18900	19150
	Frequency	1855	1880	1905
15	Channel	18675	18900	19125
	Frequency	1857.5	1880	1902.5
20	Channel	18700	18900	19100
	Frequency	1860	1880	1900

LTE Band 4 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
1.4	Channel	19957	20175	20393
	Frequency	1710.7	1732.5	1754.3
3	Channel	19965	20175	20385
	Frequency	1711.5	1732.5	1753.5
5	Channel	19975	20175	20375
	Frequency	1712.5	1732.5	1752.5
10	Channel	20000	20175	20350
	Frequency	1715	1732.5	1750
15	Channel	20025	20175	20325
	Frequency	1717.5	1732.5	1747.5
20	Channel	20050	20175	20300
	Frequency	1720	1732.5	1745

LTE Band 12 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
1.4	Channel	23017	23095	23173
	Frequency	699.7	707.5	715.3
3	Channel	23025	23095	23165
	Frequency	700.5	707.5	714.5
5	Channel	23035	23095	23155
	Frequency	701.5	707.5	713.5
10	Channel	23060	23095	23130
	Frequency	704	707.5	711

LTE Band 66 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
1.4	Channel	131979	132322	132665
	Frequency	1710.7	1745	1779.3
3	Channel	131987	132322	132657
	Frequency	1711.5	1745	1778.5
5	Channel	131997	132322	132647
	Frequency	1712.5	1745	1777.5
10	Channel	132022	132322	132622
	Frequency	1715	1745	1775
15	Channel	132047	132322	132597
	Frequency	1717.5	1745	1772.5
20	Channel	132072	132322	132572
	Frequency	1720	1745	1770

2.4 Application Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR Part 2

- 47 CFR Part 24

- 47 CFR Part 27

- ANSI C63.26-2015

- FCC KDB 971168 D01 Power Meas License Digital Systems v03r01

- FCC KDB 412172 D01 Determining ERP and EIRP v01r01

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.

3 Test Condition

3.1 Test Environmental Conditions

During testing, environmental conditions are described below.

Normal Configuration		Extreme Configuration		
Voltage	12V	Voltage	High: 24V	Low: 12V

3.2 Test Configuration

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). The worst cases were recorded in this report.

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes (Z, X, Y axis), receiver antenna polarization (horizontal and vertical), the worst emission was found in ' Z ' position and the worst case was recorded.

3.3 Equipment List

Instrument	Manufacturer	Model	Asset No.	Cal. Interval	Cal. Due Date
Radiated					
Receiver	R&S	ESR7	PWB0023	1 Year	2025/09/11
Spectrum Analyzer	R&S	FSV3044	PWB0024	1 Year	2025/09/11
Loop Antenna	R&S	HFH2-Z2E	PWB0026	1 Year	2025/09/13
TRILOG Broadband Antenna	Schwarzbeck	VULB9162	PWB0029	1 Year	2025/09/09
Double-Ridged Guide Antenna	ETS-Lindgren	3117	PWB0031	1 Year	2025/09/26
k Type Horn Antenna	Steatite Antennas	QMS-00880	PWB0035	1 Year	2025/09/08
Pre-Amplifier	R&S	OSP220 (OSP-B155G)	PWB0042	1 Year	2025/09/11
Pre-Amplifier	COM-MW	DLNA8	PWB0094	1 Year	2025/09/11
Pre-Amplifier	R&S	SCU18F	PWB0034	1 Year	2025/09/11
Pre-Amplifier	R&S	SCU40F1	PWB0036	1 Year	2025/09/11
Anechoic Chamber	ETS-Lindgren	Fact 3-2m	PWB0003	3 Years	2026/06/05
Test Software	Tonscend	JS36	/	/	/

3.4 Test Uncertainty

No.	Parameter	Uncertainty
1	Radiated Spurious Emission	Below 1GHz: 4.88 dB Above 1GH: 5.06 dB
2	Temperature	3°C
3	Humidity	1.3 %
4	Supply voltages	0.006 V

4 Test Items Description

Ambient condition

Anechoic Chamber

Temperature [°C]	21.2 to 21.6
Humidity [%RH]	30 to 31
Pressure [kPa]	102.1 to 102.2

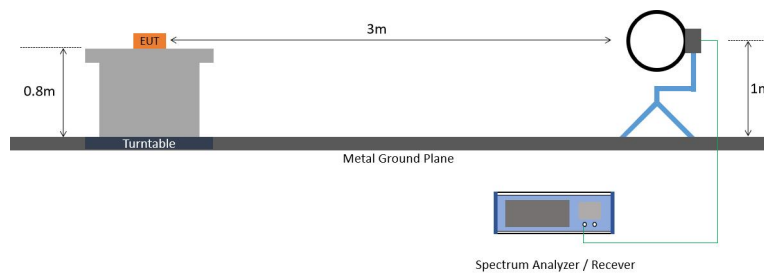
4.1 Radiated Spurious Emission

Methods of Measurement

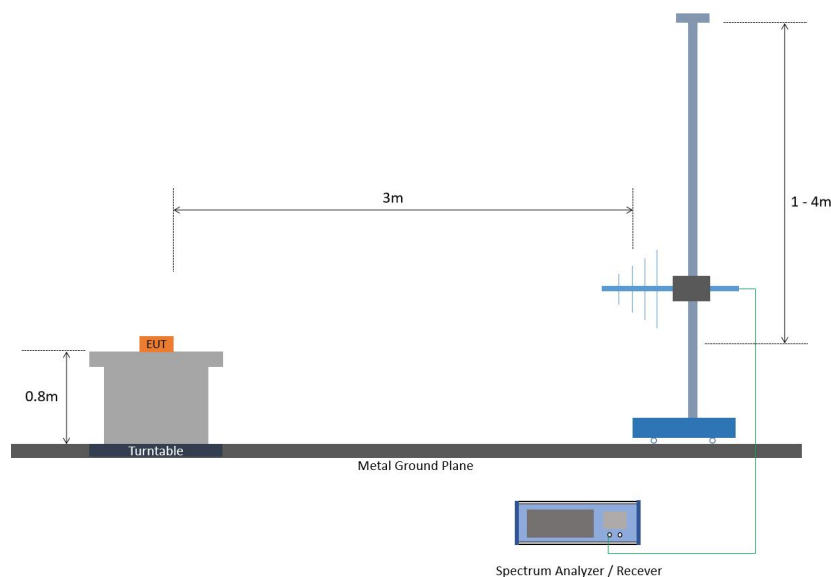
The radiated spurious emission was measured by substitution method according to ANSI C63.26. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB.

The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

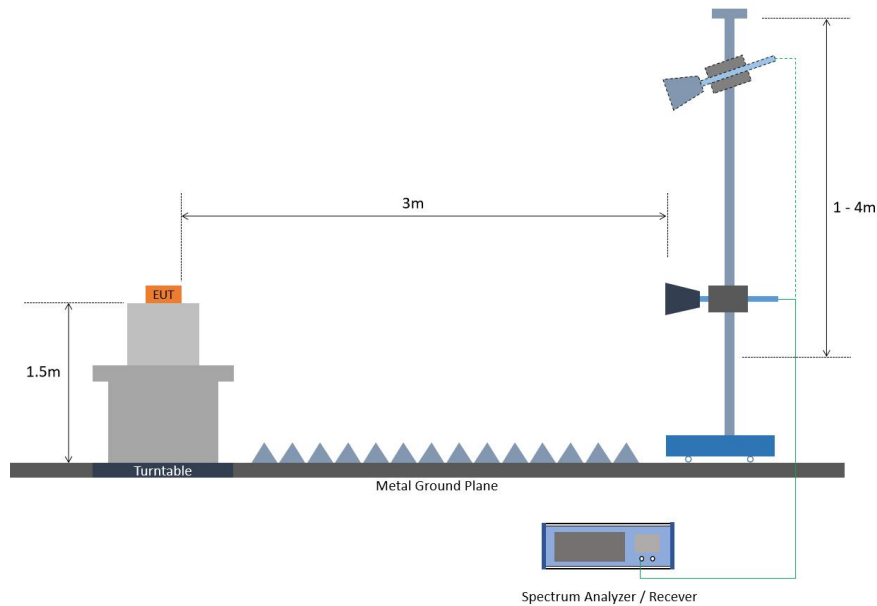
Test Setup



For radiated test below 30MHz



For radiated test from 30MHz to 1GHz



For radiated test above 1GHz

- 1.The testing follows ANSI C63.26 Section 5.5
- 2.The EUT was placed on a turntable with 0.8 meter height for frequency below 1GHz and 1.5 meter height for frequency above 1GHz respectively above ground.
- 3.The EUT was set 3 meters from the receiving antenna mounted on the antenna tower.
- 4.The table was rotated 360 degrees to determine the position of the highest spurious emission.
- 5.The height of the receiving antenna is varied between 1m to 4m to search the maximum spurious emission for both horizontal and vertical polarizations.
- 6.During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power.
- 7.Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
- 8.A horn antenna was substituted in place of the EUT and was driven by a signal generator.
- 9.Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
- 10.EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
- 11.ERP (dBm) = EIRP - 2.15
- 12.The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

Remark: The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

----- THE END -----

ANNEX A: Test Results

Test Results of Radiated Test

Radiated Emission	Refer to ANNEX A.1
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ANNEX B: The EUT Appearance

The EUT Appearance (internal and external photographs) are submitted separately.

ANNEX C: Test Setup Photographs

The Test Setup Photographs are submitted separately.