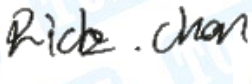


Radio Test Report

FCC ID:2AVE6TG5B**IC:25970-TG5B****Change II**

Report No.	:	TBR-C-202412-0212-101	
Applicant	:	Tractive GmbH	
Equipment Under Test (EUT)			
EUT Name	:	Tractive CAT Mini	
Model No.	:	TG5	
Series Model No.	:	----	
Brand Name	:	Tractive	
Sample ID	:	HC-C-202412-0212-03-01# & HC-C-202412-0212-05-01#	
Receipt Date	:	2025-02-05	
Test Date	:	2025-02-05 to 2025-03-18	
Issue Date	:	2025-03-18	
Standards	:	47 CFR Part 2, 22(H), 24(E), 27 RSS-Gen Issue 5 April 2018+Amendment 1 (March 2019)+Amendment 2 (February 2021), RSS-130 Issue 2, RSS-133 Issue 7, RSS-139 Issue 4, RSS-132 Issue 4	
Test Method	:	ANSI C63.26 2015	
Conclusions	:	PASS	
		In the configuration tested, the EUT complied with the standards specified above.	
Test By	:		
Reviewed By	:		
Approved By	:		

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.

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Revision History

Report No.	Version	Description	Issued Date
TBR-C-202412-0212-101	Rev.01	Initial issue of report	2025-03-18

Remarks1:Please refer to The Original Grant FCC ID:
2AVE6TG5B Test Report and The Original Grant IC:25970-TG5B Test Report.

Remarks2:The following two points have been changed, and only the radiation spurious test ne
eds to be added

1.Added Power Amplifier alternative mount option component, pin to pin compatible, same perfo
rmance and specifications

2.Software drivers update to support the new PA alternative

1. General Information about EUT

1.1 Client Information

Applicant	:	Tractive GmbH
Address	:	Poststrasse 4, 4061 Pasching, AUSTRIA
Manufacturer	:	Tractive GmbH
Address	:	Poststrasse 4, 4061 Pasching, AUSTRIA

1.2 General Description of EUT (Equipment Under Test)

EUT Name	:	Tractive Dog 6
Models No.	:	TG6A
Model Different	:	----
Product Description	:	Frequency Bands: LTE Band 2: TX: 1850MHz-1910MHz, RX: 1930MHz-1990MHz LTE Band 4: TX: 1710MHz-1755MHz, RX: 2110MHz-2155MHz LTE Band 5: TX: 824MHz-849MHz, RX: 869MHz-894MHz LTE Band 12: TX: 699MHz -716MHz, RX: 729MHz-746MHz LTE Band 13: TX: 777MHz -787MHz, RX: 746MHz-756MHz
	Antenna Gain:	FPC Antenna: LTE Band 2: 0.9dBi LTE Band 4: 0.9dBi LTE Band 5: -3.3dBi LTE Band 12: -3.3dBi LTE Band 13: -3.3dBi
	Modulation Type:	QPSK, 16QAM
	Bandwidth:	LTE Band 2: 1.4MHz/3MHz/5MHz/10MHz/15MHz/20MHz LTE Band 4: 1.4MHz/3MHz/5MHz/10MHz/15MHz/20MHz LTE Band 5: 1.4MHz/3MHz/5MHz/10MHz LTE Band 12: 1.4MHz/3MHz/5MHz/10MHz LTE Band 13: 5MHz/10MHz
Power Rating	:	Input: DC 5V
Li-ion Polymer Battery	:	3.8V by 450mAh Rechargeable Li-ion battery
Software Version	:	----
Hardware Version	:	----
Remark: (1) The antenna gain provided by the applicant, the adapter and verified for the RF conduction test provided by TOBY test lab. (2) The above antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.		

(3) Channel List

Test mode:	Nominal Bandwidth (MHz)	RF Channel		
		Low (L)	Middle (M)	High (H)
		MHz	MHz	MHz
LTE Band 2	1.4	1850.7	1880.0	1909.3
	3	1851.5	1880.0	1908.5
	5	1852.5	1880.0	1907.5
	10	1855.0	1880.0	1905.0
	15	1857.5	1880.0	1902.5
	20	1860.0	1880.0	1900.0

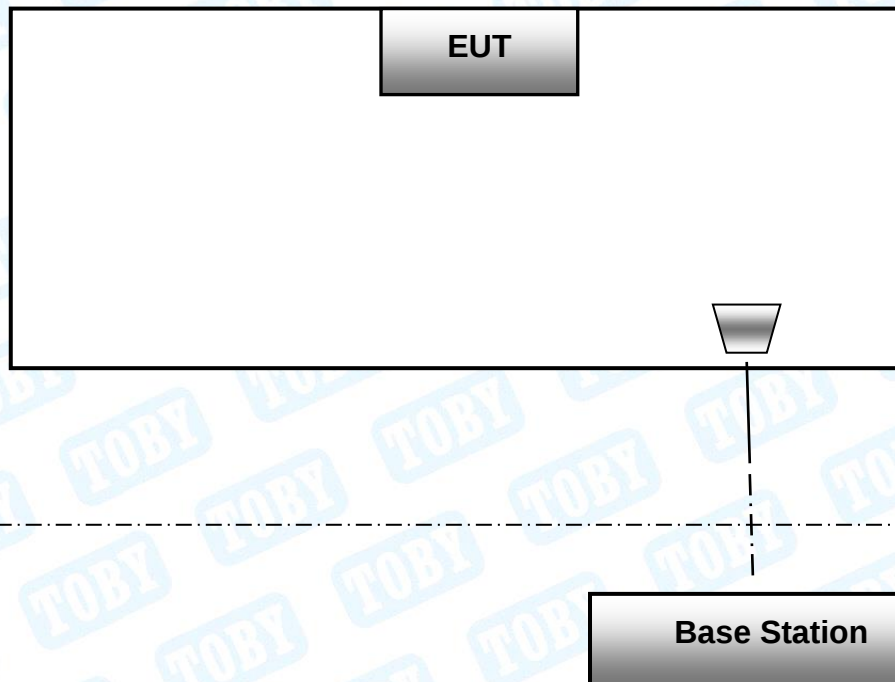
Test mode:	Nominal Bandwidth (MHz)	RF Channel		
		Low (L)	Middle (M)	High (H)
		MHz	MHz	MHz
LTE Band 4	1.4	1710.7	1732.5	1754.3
	3	1711.5	1732.5	1753.5
	5	1712.5	1732.5	1752.5
	10	1715.0	1732.5	1750.0
	15	1715.5	1732.5	1747.5
	20	1720.0	1732.5	1745.0

Test mode:	Nominal Bandwidth (MHz)	RF Channel		
		Low (L)	Middle (M)	High (H)
		MHz	MHz	MHz
LTE Band 5	1.4	824.7	836.5	848.3
	3	825.5	836.5	847.5
	5	826.5	836.5	846.5
	10	829.0	836.5	844.0

Test mode:	Nominal Bandwidth (MHz)	RF Channel		
		Low (L)	Middle (M)	High (H)
		MHz	MHz	MHz
LTE Band 12	1.4	699.7	707.5	715.3
	3	700.5	707.5	714.5
	5	701.5	707.5	713.5
	10	704.0	707.5	711.0

Test mode:	Nominal Bandwidth (MHz)	RF Channel		
		Low (L)	Middle (M)	High (H)
		MHz	MHz	MHz
LTE Band 13	5	779.5	782.0	784.5
	10	---	782.0	---

1.3 Block Diagram Showing the Configuration of System Tested



The above block diagram of setup is the normal mode. And more detail please refer to the test setup of each test item of bellow.

1.4 Description of Support Units

The EUT has been tested as an independent unit.

1.5 Measurement Uncertainty

Test Item	Parameters	Expanded Uncertainty (U _{Lab})
RF Power, conducted	/	±0.82 dB
Radiated Emission	Level Accuracy: 9kHz to 30 MHz	±4.60 dB
Radiated Emission	Level Accuracy: 30MHz to 1000 MHz	±4.40 dB
Radiated Emission	Level Accuracy: Above 1000MHz	±4.20 dB

1.6 Test Facility

The testing report were performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at 1/F., Building 6, Rundongsheng Industrial Zone, Longzhu, Xixiang, Bao'an District, Shenzhen, Guangdong, China. At the time of testing, the following bodies accredited the Laboratory:

CNAS (L5813)

The Laboratory has been accredited by CNAS to ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

A2LA Certificate No.: 4750.01

The laboratory has been accredited by American Association for Laboratory Accreditation(A2LA) to ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories for the technical competence in the field of Electrical Testing. And the A2LA Certificate No.: 4750.01.FCC Accredited Test Site Number: 854351. Designation Number: CN1223.

IC Registration No.: (11950A)

The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A. CAB identifier: CN0056.

2. Test Summary

Test Item	Section in CFR 47	Result
Out of band emission	Part 24.238(a) Part 22.917(a) Part 27.53 (h) Part 27.53(m)	PASS
Pass: The EUT complies with the essential requirements in the standard. Note1:Please refer to The Original Grant FCC ID:2AVE6TG5B Test Report. Note2:The following two points have been changed, and only the radiation spurious test needs to be added 1.Added Power Amplifier alternative mount option component, pin to pin compatible, same performance and specifications 2.Software drivers update to support the new PA alternative		

Test Item	Section in CFR 47	Result
Out of band emission	RSS-133 6.5 RSS-132 5.5 RSS-130 4.7 RSS-139 6.6	PASS
Pass: The EUT complies with the essential requirements in the standard. Note1:Please refer to The Original Grant IC:25970-TG5B Test Report. Note2:The following two points have been changed, and only the radiation spurious test needs to be added 1.Added Power Amplifier alternative mount option component, pin to pin compatible, same performance and specifications 2.Software drivers update to support the new PA alternative		

3. Test Software

Test Item	Test Software	Manufacturer	Version No.
Radiation Emission	EZ-EMC	EZ	FA-03A2RE+
RF Test System	JS1120	Tonscend	V3.1.46

4. Test Equipment and Test Site

Test Site				
No.	Test Site	Manufacturer	Specification	Used
TB-EMCSR001	Shielding Chamber #1	YIHENG	7.5*4.0*3.0 (m)	X
TB-EMCSR002	Shielding Chamber #2	YIHENG	8.0*4.0*3.0 (m)	√
TB-EMCCA001	3m Anechoic Chamber #A	ETS	9.0*6.0*6.0 (m)	X
TB-EMCCB002	3m Anechoic Chamber #B	YIHENG	9.0*6.0*6.0 (m)	√

Radiation Emission Test (B Site)					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	N9020A	MY49100060	Aug. 29, 2024	Aug. 28, 2025
Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102197	Jun. 17, 2024	Jun. 16, 2025
EMI Test Receiver	Rohde & Schwarz	ESU-8	100472/008	Feb.22, 2025	Feb.21, 2026
Bilog Antenna	SCHWARZBECK	VULB 9168	1225	Nov. 13, 2023	Nov. 12, 2025
Horn Antenna	SCHWARZBECK	BBHA 9120 D	2463	Jun. 14, 2024	Jun. 13, 2026
Horn Antenna	SCHWARZBECK	BBHA 9170	1118	Feb. 27, 2024	Feb.26, 2026
Loop Antenna	SCHWARZBECK	FMZB 1519 B	1519B-059	Jun. 14, 2024	Jun. 13, 2026
HF Amplifier	Tonscend	TAP9E6343	AP21C806117	Aug. 29, 2024	Aug. 28, 2025
HF Amplifier	Tonscend	TAP051845	AP21C806141	Aug. 29, 2024	Aug. 28, 2025
HF Amplifier	Tonscend	TAP0184050	AP21C806129	Aug. 29, 2024	Aug. 28, 2025
Highpass Filter	CD	HPM-6.4/18G	---	N/A	N/A
Highpass Filter	CD	HPM-2.8/18G	---	N/A	N/A
Highpass Filter	XINBO	XBLBQ-HTA67(8-25G)	22052702-1	N/A	N/A
Antenna Conducted Emission					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102197	Jun. 17, 2024	Jun. 16, 2025
MXA Signal Analyzer	KEYSIGHT	N9020B	MY60110172	Aug. 29, 2024	Aug. 28, 2025
MXA Signal Analyzer	Agilent	N9020A	MY47380425	Aug. 29, 2024	Aug. 28, 2025
Vector Signal Generator	Agilent	N5182A	MY50141294	Aug. 29, 2024	Aug. 28, 2025
Analog Signal Generator	Agilent	N5181A	MY48180463	Aug. 29, 2024	Aug. 28, 2025
Vector Signal Generator	KEYSIGHT	N5182B	MY59101429	Aug. 29, 2024	Aug. 28, 2025
Analog Signal Generator	KEYSIGHT	N5173B	MY61252685	Aug. 29, 2024	Aug. 28, 2025
RF Power Sensor	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO26	Aug. 29, 2024	Aug. 28, 2025
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO29	Aug. 29, 2024	Aug. 28, 2025
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO31	Aug. 29, 2024	Aug. 28, 2025
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO33	Aug. 29, 2024	Aug. 28, 2025
RF Control Unit	Tonsced	JS0806-1	21C8060380	N/A	N/A
RF Control Unit	Tonsced	JS0806-2	21F8060439	Aug. 29, 2024	Aug. 28, 2025
Power Control Box	Tonsced	JS0806-4ADC	21C8060387	N/A	N/A
Wideband Radio	Rohde & Schwarz	CMW500	144382	Aug. 29, 2024	Aug. 28, 2025

Communication Tester					
Universal Radio Communication Tester	Rohde&Schwarz	CMW500	168796	Feb.22, 2025	Feb.21, 2026
Temperature and Humidity Chamber	ZhengHang	ZH-QTH-1500	ZH2107264	Jun. 14, 2024	Jun. 13, 2026

5. Radiated Out Band of Emissions

11.1 Test Standard and Limit

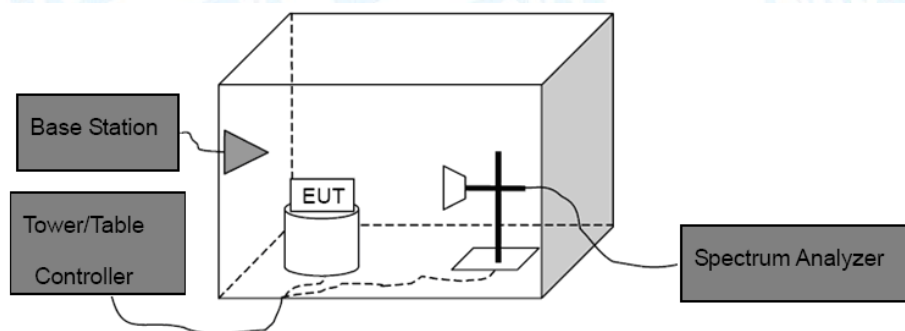
11.1.1 Test Standard

FCC Part 2: 2.1053, FCC Part 22.917(a), FCC part 24.238(a)
FCC Part 27.53 (h), FCC Part 27.53(m)
RSS-130 Section 4.7; RSS-132 Section 5.5; RSS-133 Section 6.5; RSS-139 Section 6.6

11.1.2 Test Limit

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power(P) by a factor of at least $43+10\log(P)$ dB. For all power levels +30 dBm to 0 dBm, this becomes a constant specification limit of -13 dBm.

11.2 Test Setup



11.3 Test Procedure

- (1) The test system setup as show in the block diagram above.
- (2) The EUT was placed on an non-conductive rotating platform in an anechoic chamber. The radiated spurious emissions from 30MHz to 10th harmonious of fundamental frequency were measured at 3 m with a test antenna and a spectrum analyzer with RBW=1 MHz, VBW=1 MHz, peak detector settings.
- (3) During the measurement, the EUT was enforced in maximum power and linked with a base station. All the spurious emissions at 3m were measured by rotation of the turntable and the test antenna raised and lowered over a range from 1 to 4 meters in both horizontally and vertically polarized orientations.
- (4) When found the maximum level of emissions from the EUT. Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious emissions in dB=10 log(TX power in Watts/0.001)-the absolute level

Spurious attenuation limit in dB=43+10 log(power out in Watts)

11.4 Deviation From Test Standard

No deviation

11.5 EUT Operating Mode

The EUT was continuously connected with the Base station and transmitting in the max power during the test.

11.6 Test Data

Please refer to the Attachment B.

Measurement Data (worst case)

ATTACHMENT A--RADIATED OUT BAND OF EMISSIONS

Measurement Data (worst case)

Test mode:	LTE BAND 2 20MHz (RB size 1 & RB offset 0) for QPSK						
Channel:	Middle						
Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
	Polarization (H&V)	Read Level (dBm)	Antenna Correct Factor (dBi)	Cable Loss (dB)	Emission Level (dBm)		
1672.4	Horizontal	-57.39	14.94	9.54	-32.91	-13.00	Pass
2509.6	H	-66.18	13.87	7.86	-44.45		
5856.3	H	-72.20	14.49	6.12	-51.59		
7729.52	H	-39.58	8.02	5.98	-25.58		
10867.45	H	-48.89	10.47	3.97	-34.45		
1669.6	Vertical	-53.13	14.94	9.54	-28.65	-13.00	Pass
2512.5	V	-66.79	13.87	7.86	-45.06		
5846.1	V	-69.57	14.49	6.12	-48.96		
7100.82	V	-37.42	8.02	5.98	-23.42		
10822.21	V	-46.13	10.47	3.97	-31.69		
Remark: 1, The testing has been conformed to 10*1880MHz=18800MHz. 2, All other emissions more than 30 dB below the limit. 3, Emission Level= Read Level+ Antenna Correct Factor +Cable Loss							

Test mode:	LTE BAND 4 20MHz (RB size 1 & RB offset 0) for QPSK						
Channel:	Middle						
Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
	Polarization (H&V)	Read Level (dBm)	Antenna Correct Factor (dBi)	Cable Loss (dB)	Emission Level (dBm)		
1673.9	Horizontal	-55.49	14.94	9.54	-31.01	-13.00	Pass
2509.5	H	-67.17	13.87	7.86	-45.44		
5856.1	H	-70.27	14.49	6.12	-49.66		
7732.52	H	-40.52	8.02	5.98	-26.52		
10924.32	H	-45.96	10.47	3.97	-31.52		
1669.4	Vertical	-53.12	14.94	9.54	-28.64	-13.00	Pass
2512.6	V	-65.59	13.87	7.86	-43.86		
5846.3	V	-69.40	14.49	6.12	-48.79		
7640.21	V	-35.13	8.02	5.98	-21.13		
10911.34	V	-47.75	10.47	3.97	-33.31		
Remark: 1, The testing has been conformed to 10*1732.5MHz=17325MHz. 2, All other emissions more than 30 dB below the limit. 3, Emission Level= Read Level+ Antenna Correct Factor +Cable Loss							

Test mode:	LTE BAND 5 10MHz (RB size 1 & RB offset 0) for QPSK						
Channel:	Middle						
Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
	Polarization (H&V)	Read Level (dBm)	Antenna Correct Factor (dBi)	Cable Loss (dB)	Emission Level (dBm)		
1672.2	Horizontal	-57.95	14.94	9.54	-33.47	-13.00	Pass
2508.8	H	-62.81	13.87	7.86	-41.08		
5855.2	H	-71.51	14.49	6.12	-50.90		
8551.2	H	-35.35	8.02	5.98	-21.35		
10302.57	H	-47.58	10.47	3.97	-33.14		
1668.2	Vertical	-57.26	14.94	9.54	-32.78	-13.00	Pass
2511.8	V	-63.98	13.87	7.86	-42.25		
5845.2	V	-72.65	14.49	6.12	-52.04		
8546.2	V	-36.72	8.02	5.98	-22.72		
10302.57	V	-46.13	10.47	3.97	-31.69		
Remark: 1, The testing has been conformed to 10*836.5MHz=8365MHz. 2, All other emissions more than 30 dB below the limit. 3, Emission Level= Read Level+ Antenna Correct Factor +Cable Loss							

Test mode:	LTE BAND 12 10MHz (RB size 1 & RB offset 0) for QPSK						
Channel:	Middle						
Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
	Polarization (H&V)	Read Level (dBm)	Antenna Correct Factor (dBi)	Cable Loss (dB)	Emission Level (dBm)		
1643.1	Horizontal	-55.74	14.94	9.54	-31.26	-13.00	Pass
2505.6	H	-63.63	13.87	7.86	-41.90		
3336.5	H	-69.44	14.49	6.12	-48.83		
7139.42	H	-38.57	8.02	5.98	-24.57		
9510.71	H	-48.35	10.47	3.97	-33.91		
1653.1	Vertical	-58.21	14.94	9.54	-33.73	-13.00	Pass
2519.6	V	-65.46	13.87	7.86	-43.73		
3326.2	V	-71.20	14.49	6.12	-50.59		
7142.42	V	-36.70	8.02	5.98	-22.70		
9512.71	V	-45.43	10.47	3.97	-30.99		
Remark: 1, The testing has been conformed to 10*707.5MHz=7075MHz. 2, All other emissions more than 30 dB below the limit. 3, Emission Level= Read Level+ Antenna Correct Factor +Cable Loss							

Test mode:	LTE BAND 13 10MHz (RB size 1 & RB offset 0) for QPSK						
Channel:	Middle						
Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
	Polarization (H&V)	Read Level (dBm)	Antenna Correct Factor (dBi)	Cable Loss (dB)	Emission Level (dBm)		
1573.6	Horizontal	-73.32	14.94	9.54	-48.84	-40.00	Pass
2509.2	H	-65.30	13.87	7.86	-43.57	-13.00	Pass
3346.2	H	-71.62	14.49	6.12	-51.01		
8450.15	H	-36.55	8.02	5.98	-22.55		
10871.61	H	-48.15	10.47	3.97	-33.71		
1593.1	Vertical	-77.05	14.94	9.54	-52.57	-40.00	Pass
2509.5	V	-65.54	13.87	7.86	-43.81	-13.00	Pass
3346.1	V	-73.35	14.49	6.12	-52.74		
7042.02	V	-35.47	8.02	5.98	-21.47		
10841.72	V	-45.13	10.47	3.97	-30.69		
Remark: 1, The testing has been conformed to 10*782.0MHz=7820MHz. 2, All other emissions more than 30 dB below the limit. 3, Emission Level= Read Level+ Antenna Correct Factor +Cable Loss							

-----End of Report-----