

RF TEST REPORT

Applicant Deer Management Systems LLC
FCC ID 2BBNQ-RVG3
Product CABELAS OUTFITTER CELL CAM
Brand Cabelas
Model CABOCC-V1
Report No. R2407A1004-R4V1
Issue Date October 14, 2024

Eurofins TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 2 (2023)/ FCC CFR 47 Part 90S (2023)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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Version	Revision Description	Issue Date
Rev.0	Initial issue of report.	September 20, 2024
Rev.1	Updated information, data and description.	October 14, 2024
Note: This revised report (Report No.: R2407A1004-R4V1) supersedes and replaces the previously issued report (Report No.: R2407A1004-R4). Please discard or destroy the previously issued report and dispose of it accordingly.		

Summary of Measurement Results

No.	Test Case	Clause in FCC rules	Verdict
1	RF Power Output and Effective Radiated Power	2.1046/90.635(b)	Not Test ¹
2	Occupied Bandwidth	2.1049/ 90.209	Not Test ¹
3	Emission Masks	2.1051 / 90.691	Not Test ¹
4	Peak-to-Average Power Ratio	KDB 971168 D01(5.7)	Not Test ¹
5	Frequency Stability	2.1055 / 90.213	Not Test ¹
6	Spurious Emissions at Antenna Terminals	2.1051 / 90.691	Not Test ¹
7	Radiated Spurious Emission	2.1053 /90.691	Only tested LTE Band 26 5MHz CH Middle and PASS Others Not Test ¹
Date of Testing: September 3, 2024 ~ September 4, 2024			
Date of Sample Received: August 23, 2024			
Note: PASS: The EUT complies with the essential requirements in the standard. FAIL: The EUT does not comply with the essential requirements in the standard. 1. Not Test means after evaluation, test items are no need to test, the test results please refer to Original Report. 2. All indications of Pass/Fail in this report are opinions expressed by Eurofins TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.			

CABOCC-V1 (Report No.: R2407A1004-R4V1) is a variant model of Gen3 (Report No.: R2401A0012-R4).

This product only changes Product Name, Model Name, SW Version and Mechanical shell.

The Radiated Spurious Emission tested the worst case (LTE Band 26 5MHz CH Middle) of all bands and record it in this report.

This report is used in conjunction with the original report (Report No.: R2401A0012-R4).

The detailed product change description please refers to the Difference Declaration Letter.

1. Test Laboratory

1.1. Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of **Eurofins TA Technology (Shanghai) Co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

1.2. Test Facility

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

Eurofins TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

A2LA (Certificate Number: 3857.01)

Eurofins TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

1.3. Testing Location

Company: Eurofins TA Technology (Shanghai) Co., Ltd.
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2. General Description of Equipment Under Test

2.1. Applicant and Manufacturer Information

Applicant	Deer Management Systems LLC
Applicant address	1668 Jordan West Rd, Decorah Iowa, United States, 52101
Manufacturer	AsiaTelco Technologies Co.
Manufacturer address	No. 68 Huatuo Road, Building-8, Zhangjiang Hi-Tech Park, Pudong, Shanghai 201203, China

2.2. General Information

EUT Description			
Model	CABOCC-V1		
SN	Original: G32351P300017		
Hardware Version	P3		
Software Version	1.0		
Power Supply	Battery		
Antenna Type	External Antenna		
Antenna Gain	4.4 dBi		
Test Mode(s)	LTE Band 26;		
Test Modulation	QPSK, 16QAM;		
LTE Category	1		
Rated Power Supply Voltage	9V		
Operating Voltage	Minimum: 6V Maximum: 12V		
Operating Temperature	Lowest: -25°C Highest: +55°C		
Testing Temperature	Lowest: -30°C Highest: +50°C		
Operating Frequency Range(s)	Band	Tx (MHz)	Rx (MHz)
	LTE Band 26	814 ~ 824	859 ~ 869
EUT Accessory			
Power supply 1	Dry battery: six AA Batteries DC 9V		
Power supply 2	Lithium battery: Manufacturer: Asiatelco Technologies Co. Model: TBP-01 DC 7.25V 5000mAh		
Note: 1. The EUT is sent from the applicant to Eurofins TA and the information of the EUT is declared by the applicant.			

3. Applied Standards

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

Test standards:

FCC CFR 47 Part 90S (2023)

FCC CFR47 Part 2 (2023)

Reference standard:

ANSI C63.26-2015

KDB 971168 D01 Power Meas License Digital Systems v03r01

4. Test Configuration

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

All mode and data rates and positions were investigated.

The following testing in LTE is set based on the maximum RF Output Power.

Test modes are chosen as the worst case configuration below for LTE Band 26

Test items	Bandwidth (MHz)				Modulation		RB			Test Channel		
	1.4	3	5	10	QPSK	16QAM	1	50%	100%	L	M	H
Radiated Spurious Emission	-	-	O	-	O	-	O	-	-	-	O	-
Note	1. The mark "O" means that this configuration is chosen for testing. 2. The mark "-" means that this configuration is not testing.											

5. Test Case

5.1. Radiated Spurious Emission

Ambient Condition

Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

Method of Measurement

1. The testing follows FCC KDB 971168 v03r01 Section 5.8 and ANSI C63.26-2015.
2. Below 1GHz: The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H). Above 1GHz: (Note: the FCC's permission to use 1.5m as an alternative per TCBC Conf call of Dec. 2, 2014.) The EUT is placed on a turntable 1.5 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).
3. A loop antenna, A log-periodic antenna or horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
4. The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=100kHz, VBW=300kHz, and the maximum value of the receiver should be recorded as (Pr).
5. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
6. A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss (Pcl) ,the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.
7. The measurement results are obtained as described below:
$$\text{Power(EIRP)} = \text{PMea} - \text{PAg} - \text{Pcl} + \text{Ga}$$

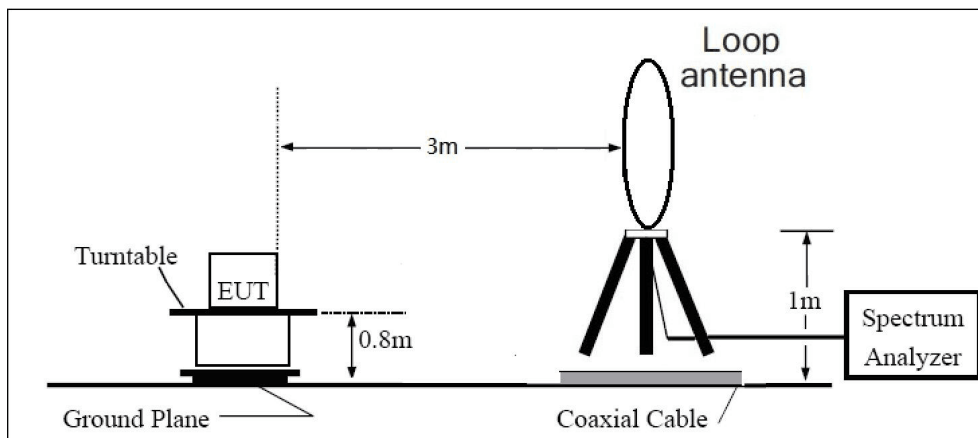
The measurement results are amend as described below:
$$\text{Power(EIRP)} = \text{PMea} - \text{Pcl} + \text{Ga}$$
8. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi)

and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole, $ERP = EIRP - 2.15\text{dBi}$.

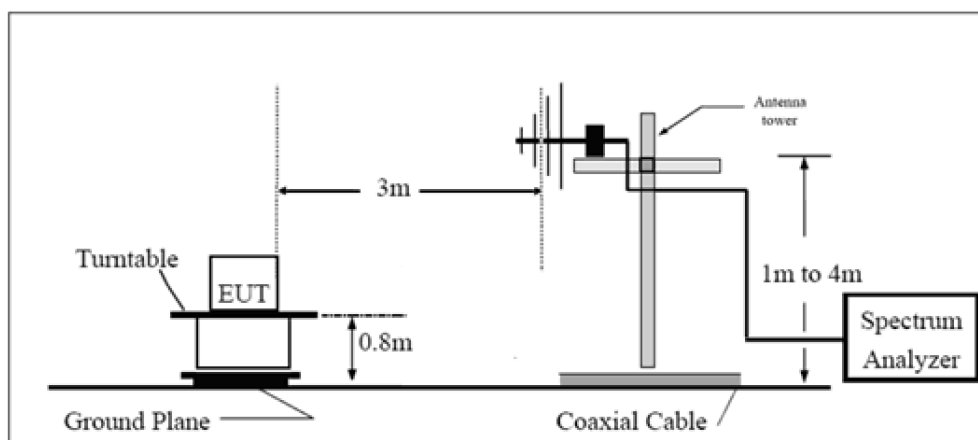
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test Setup

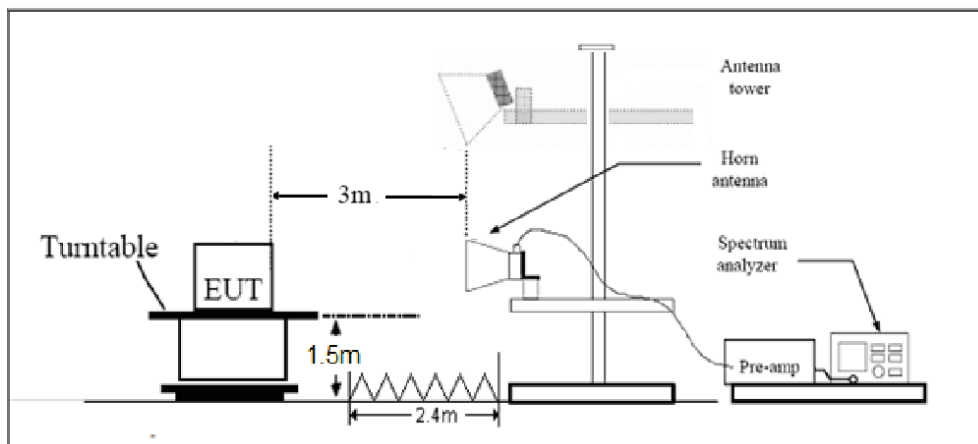
9KHz~ 30MHz



30MHz~ 1GHz



Above 1GHz



Note: Area side: 2.4mX3.6m

Limits

Rule Part 90.691 specifies that “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.”

Limit	-13 dBm
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Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$, $U = 3.55$ dB.

Test Results

Refer to the section 6.1 of this report for test data.

6. Test Results

6.1. Radiated Spurious Emission

LTE Band 26 5MHz CH Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	Result Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1633.60	-58.93	1.70	8.70	Vertical	-54.08	-13.00	41.08	-54.08
3	2450.40	-57.23	2.30	12.00	Vertical	-49.68	-13.00	36.68	-49.68
4	3266.00	-62.12	2.20	13.10	Vertical	-53.37	-13.00	40.37	-53.37
5	4082.50	-62.40	3.00	12.50	Vertical	-55.05	-13.00	42.05	-55.05
6	4899.00	-61.26	3.10	12.50	Vertical	-54.01	-13.00	41.01	-54.01
7	5715.50	-60.59	3.40	12.50	Vertical	-53.64	-13.00	40.64	-53.64
8	6532.00	-58.26	3.80	11.50	Vertical	-52.71	-13.00	39.71	-52.71
9	7348.50	-56.10	4.20	12.20	Vertical	-50.25	-13.00	37.25	-50.25
10	8165.00	-53.49	4.30	12.30	Vertical	-47.64	-13.00	34.64	-47.64
Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is vertical position.									

7. Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Spectrum Analyzer	R&S	FSV30	104028	2024-05-07	2025-05-06
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2023-04-16	2026-04-15
TRILOG Broadband Antenna	SCHWARZBECK	VULB 9163	391	2022-09-29	2025-09-28
Horn Antenna	SCHWARZBECK	BBHA 9120D	01799	2022-09-01	2025-08-31
Software	R&S	EMC32	10.35.10	/	/

ANNEX A: The EUT Appearance

The EUT Appearance is submitted separately.

ANNEX B: Test Setup Photos

The Test Setup Photos is submitted separately.

ANNEX C: Product Change Description

The Product Change Description are submitted separately.

***** END OF REPORT *****