

TEST REPORT

Report No.: SHATBL2511019W02

Applicant : Fanlight Corporation, Inc.

Product Name : Wireless Control Device

Brand Name : SyncMesh

Model Name : SYNC-101-ANT

FCC ID : 2BT4K-3602

Test Standard : 47 CFR Part 15 Subpart C §15.225

Date of Test : 2025.11.24~2026.01.28

Report Prepared by :

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(Guozheng Li)

Authorized Signatory :

Terry Yang

(Terry Yang)



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REVISION HISTORY

Rev.	Issue Date	Revisions	Revised by
00	2026.01.28	Initial Release	Guozheng Li

DECLARATION OF REPORT

1. The device has been tested by ATBL, and the test results show that the equipment under test (EUT) is in compliance with the requirements of 47 CFR Part 15 Subpart C §15.225. And it is applicable only to the tested sample identified in the report.
2. This report shall not be reproduced except in full, without the written approval of ATBL, this document only be altered or revised by ATBL, personal only, and shall be noted in the revision of the document.
3. The general information of EUT in this report is provided by the customer or manufacture, ATBL is only responsible for the test data but not for the information provided by the customer or manufacture.
4. The results in this report is only apply to the sample as tested under conditions. The customer or manufacturer is responsible for ensuring that the additional production units of this model have the same electrical and mechanical components.
5. In this report, '☐' indicates that EUT does not support content after '☐', and '☑' indicates that it supports content after '☑'

SUMMARY OF TEST RESULT

Report Section	Standard Section	Test Item	Judgment	Remark
3.1	47 CFR 15.215(c)	20dB Bandwidth	PASS	--
	--	99% Bandwidth	Report only	--
3.2	47 CFR 15.225(e)	Frequency Stability	PASS	--
3.3	47 CFR 15.225(a)(b)(c)	Field Strength of Fundamental Emissions	PASS	--
3.4	47 CFR 15.225(d)&15.209	Radiated Spurious Emissions	PASS	--
3.5	47 CFR 15.207(a)	AC Power-Line Conducted Emission	PASS	--
3.6	47 CFR 15.203	Antenna Requirements	PASS	--

1. GENERAL DESCRIPTION

1.1. Applicant

Name : Fanlight Corporation, Inc.

Address : 2000 S Grove Ave Building B, Ontario, California, United States

1.2. Manufacturer

Name : Fanlight Corporation, Inc.

Address : 2000 S Grove Ave Building B, Ontario, California, United States

1.3. General Information of EUT

General Information	
Equipment Name	Wireless Control Device
Brand Name	SyncMesh
Model Name	SYNC-101-ANT
Series Model	N/A
Model Difference	N/A
Sample No.	202511180014003
Power Input	DC 12V from Adapter
Adapter	Manufacturer: Pross Electric (China) Co., Ltd. Model: GLCG-150C-F-260BHG Input: 120-277Vac Output1: 180-260Vdc 500-750mA 150W Max. Output2: 12VDC 200mA Max.
Battery	N/A
Hardware Version	CNBR-B REV01
Software Version	v1.0.0
Operating Temperature Range	-30 ~ +70°C
Connecting I/O Port(s)	Refer to the remark below.

Remark:

The above information of EUT was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.4. Equipment Specification

Equipment Specification	
Frequency Range	13.56MHz
Number of Channels	1
Type of Modulation	ASK
Antenna Type	coil antenna
Antenna Gain	3 dBi

1.5. Modification of EUT

No modifications are made to the EUT during all test items.

1.6. Laboratory Information

Company Name	:	Shanghai ATBL Technology Co., Ltd.
Address	:	5-6/F., Unit 1, No 8, Free Trade One Life Science No. 160, Basheng Road, Pudong New District, Shanghai, China
Telephone	:	+86(0)21-51298625
FCC-Registration Number	:	485917
Designation Number	:	CN1306
A2LA Number	:	6184.01
CNAS Number	:	CNAS L14531
ISED Designation Number	:	27371
CAB identifier	:	CN0116

1.7. Applicable Standards

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

47 CFR Part 15 Subpart C §15.225

ANSI C63.10-2020

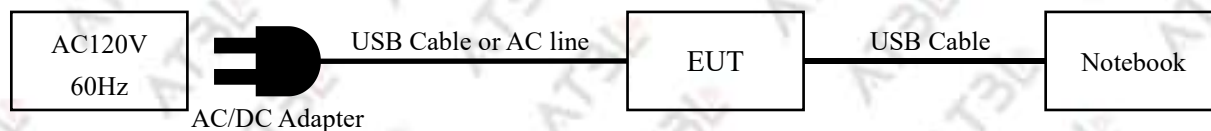
Remark:

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

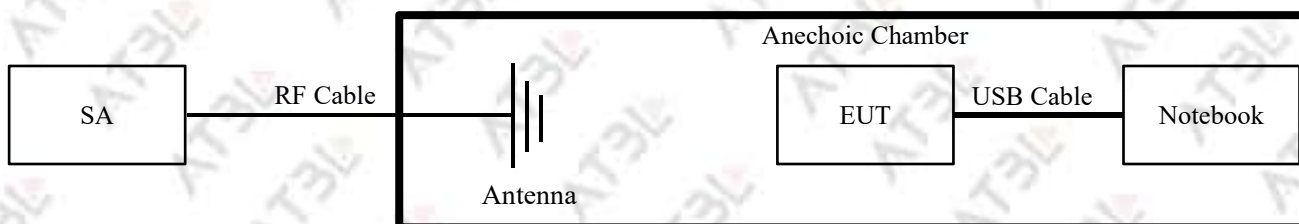
2. TEST CONFIGURATION OF EUT

2.1. Block Diagram of Test System

2.1.1. For AC Power-Line Conducted Emission



2.1.2. For Radiated Spurious Emission



2.1.3. For Conducted Test



2.2. Description of Support Units

NO.	Unit	Brand	Model	Description
1	Notebook	Lenovo	DESKTOP-USDEO09	N/A
2	USB Cable	N/A	100cm	N/A

2.3. EUT Operating Conditions

For AC power-line conducted emission, the EUT was connected under the large package sizes transmission.

For radiated spurious emission and conducted test, the engineering test program was provided and make the EUT to continuous transmit/receive.

2.4. Equipment List

2.4.1. For Conducted Test

Kind of Equipment	Manufacturer	Type No.	Serial No.	equipment number	Calibrated until	Calibrated due until	Cal. Interval
Power sensor	DARE	RPR3006W	16I00054SN016	SHATBL-W008	2025.07.28	2026.07.27	1 year
Adjustable Attenuator	Agilent	8494B	MY42144015	SHATBL-W009	2025.07.28	2026.07.27	1 year
Adjustable Attenuator	Agilent	8496B	MY42143776	SHATBL-W010	2025.07.28	2026.07.27	1 year
Environmental Test Chamber	KSON	THS-B6C-150	9159K	SHATBL-W019	2025.03.17	2026.03.16	1 year
Signal analyzer	Keysight	N9020A	MY50510136	SHATBL-W003	2025.07.18	2026.07.17	1 year
Vector signal generator	Agilent	N5182A	MY48180764	SHATBL-W043	2025.07.18	2026.07.17	1 year
Analog signal generator	Keysight	N5182B	MY57300196	SHATBL-W005	2025.07.18	2026.07.17	1 year
Wideband radio communication tester	R&S	CMW500	101331	SHATBL-W007	2025.07.28	2026.07.27	1 year
Switch Box	Cesheng	smu 1003	WCS20221215	SHATBL-W046	2025.03.19	2026.03.18	1 year
Thermometer	DeLi	N/A	N/A	SHATBL-W011	2025.08.01	2026.07.31	1 year
Test Software	Cesheng	WCS-WC N	N/A	SHATBL-W021	N/A	N/A	N/A

2.4.2. For Radiated Spurious Emission

Kind of Equipment	Manufacturer	Type No.	Serial No.	equipment number	Calibrated until	Calibrated due until	Cal. Interval
Signal analyzer	Agilent	N9020A	MY50200811	SHATBL-E017	2025.03.17	2026.03.16	1 year
Amplifier	JPT	JPA0118-55-303A	1910001800055000	SHATBL-E006	2025.03.24	2026.03.23	1 year
Amplifier	JPT	JPA-10M1G32	21010100035001	SHATBL-E005	2025.03.17	2026.03.16	1 year
Antenna/Turntable Controller	Brilliant	N/A	N/A	SHATBL-E007	N/A	N/A	N/A
Loop Antenna(9kHz-30 MHz)	Daze	ZN30900C	20077	SHATBL-E042	2025.05.13	2026.05.12	1 year
Bilog Antenna	SCHWARZBECK	VULB 9168	01174	SHATBL-E008	2025.05.20	2026.05.19	1 year
Broad-band Horn Antenna	SCHWARZBECK	BBHA 9120D	02334	SHATBL-E009	2025.05.20	2026.05.19	1 year
Horn Antenna	COM-POWER	AH-1840	10100008	SHATBL-E043	2025.07.27	2026.07.26	1 year
Thermometer	DeLi	N/A	N/A	SHATBL-E015	2025.08.01	2026.07.31	1 year
Test Software	FALA	EMC-RI(Ver.4A2)	N/A	N/A	N/A	N/A	N/A
Wideband radio communication tester	R&S	CMW500	101331	SHATBL-W044	2025.07.28	2026.07.27	1 year
Spectrum analyzer	R&S	FSV40-N	101761	SHATBL-W036	2025.07.28	2026.07.27	1 year

2.4.3. For AC Power-Line Conducted Emission

Kind of Equipment	Manufacturer	Type No.	Serial No.	equipment number	Calibrated until	Calibrated due until	Cal. Interval
EMI Test Receiver	R&S	ESPI	100679	SHATBL-E012	2025.03.17	2026.03.16	1 year
LISN	R&S	ENV216	101300	SHATBL-E013	2025.03.17	2026.03.16	1 year
LISN	R&S	ENV216	100333	SHATBL-E041	2025.03.17	2026.03.16	1 year
CE Cable	Chuangce xing	2M	EMI0014	SHATBL-E014	N/A	N/A	N/A
Temperature & Humidity	Deli	Deli	EMI0015	SHATBL-E015	2025.08.01	2026.07.31	1 year
Testing Software	FALA	EZ-EMC(Ver.EMC-CON 3A1.1)	EMI0044	SHATBL-E044	N/A	N/A	N/A

2.5. Measurement Uncertainty

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	Conducted Output Power	1.27dB
2	Power spectral density	1.28dB
3	Conducted Frequency Stability	10.14Hz
4	Conducted spurious emissions	1.73dB
5	RF Cable Loss	1.22dB
6	Radiated Spurious Emission 9KHz-30MHz	2.35dB
7	Radiated Spurious Emission 30MHz-1GHz	2.59dB
8	Radiated Spurious Emission 1GHz-18GHz	2.62dB
9	Radiated Spurious Emission 18GHz - 40GHz	2.80dB
10	Occupied bandwidth	23.20Hz

3. TEST RESULT

3.1. 20dB Bandwidth and 99% Bandwidth

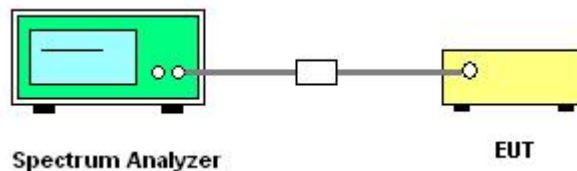
3.1.1. Limit

Intentional radiators must be designed to ensure that the 20dB and 99% emission bandwidth in the specific band 13.553~13.567MHz.

3.1.2. Test Procedure

1. The spectrum analyzer connected via a receive antenna placed near the EUT in peak Max hold mode.
2. The resolution bandwidth of 1 kHz and the video bandwidth of 3 kHz were used.
3. Measured the spectrum width with power higher than 20dB below carrier.
4. Measured the 99% OBW.

3.1.3. Test Setup



3.1.4. Test Result

Please refer to the Appendix A2.

3.2. Frequency Stability

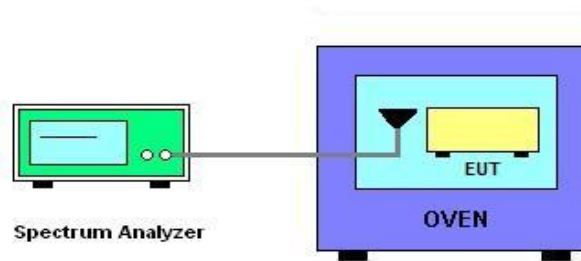
3.2.1. Limit

The frequency tolerance of the carrier signal shall be maintained within $\pm 0.01\%$ (100ppm) of the operating frequency over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

3.2.2. Test Procedures

1. The spectrum analyzer connected via a receive antenna placed near the EUT.
2. EUT have transmitted signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire emissions bandwidth.
4. Set RBW = 1 kHz, VBW = 3 kHz with peak detector and maxhold settings.
5. The f_c is declaring of channel frequency. Then the frequency error formula is $(f_c - f)/f_c \times 10^6$ ppm and the limit is less than ± 100 ppm.
6. Extreme temperature rule is -20°C~50°C.

3.2.3. Test Setup



3.2.4. Test Result

Please refer to the Appendix A2.

3.3. Field Strength of Fundamental Emissions

3.3.1. Limit

Rules and specifications	Rules and specifications			
Description	Compliance with the spectrum mask is tested with RBW set to 9kHz.			
Freq. of Emission	Field Strength	Field Strength	Field Strength	Field Strength
(MHz)	($\mu\text{V/m}$) at 30m	($\mu\text{V/m}$) at 30m	($\mu\text{V/m}$) at 10m	($\mu\text{V/m}$) at 3m
1.705~13.110	30	29.5	48.58	69.5
13.110~13.410	106	40.5	59.58	80.5
13.410~13.553	334	50.5	69.58	90.5
13.553~13.567	15848	84.0	103.08	124.0
13.567~13.710	334	50.5	69.58	90.5
13.710~14.010	106	40.5	59.58	80.5
14.010~30.000	30	29.5	48.58	69.5

3.3.2. Test Procedures

1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable
0.8 meter above ground. The phase center of the loop receiving antenna mounted antenna tower
was placed 3 meters far away from the turntable.

2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to
determine the position of the highest radiation.

3. The height of the receiving antenna was fixed at one meter above ground to find the maximum
emissions field strength.

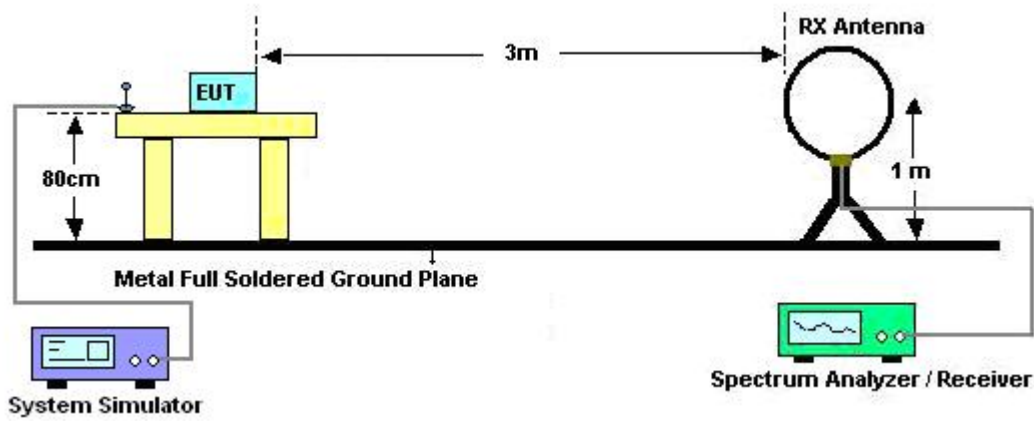
4. For Fundamental emissions, use the receiver to measure QP reading.

5. When the radiated emissions limits are expressed in terms of the average value of the emissions,
and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.

6. Compliance with the spectrum mask is tested with RBW set to 9kHz.

Note: Emission level (dB $\mu\text{V/m}$) = 20 log Emission level ($\mu\text{V/m}$).

3.3.3. Test Setup



3.3.4. Test Result

Please refer to the Appendix A2.

3.4. Radiated Spurious Emissions

3.4.1. Limit

The field strength of any emissions which appear outside of 13.110 ~14.010MHz band shall not exceed the general radiated emissions limits.

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

3.4.2. Test Procedure

1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable

0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.

2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.

3. The height of the broadband receiving antenna was varied between one meter and four meters

above ground to find the maximum emissions field strength of both horizontal and vertical polarization.

4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.

5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.

6. When the radiated emissions limits are expressed in terms of the average value of the emissions,

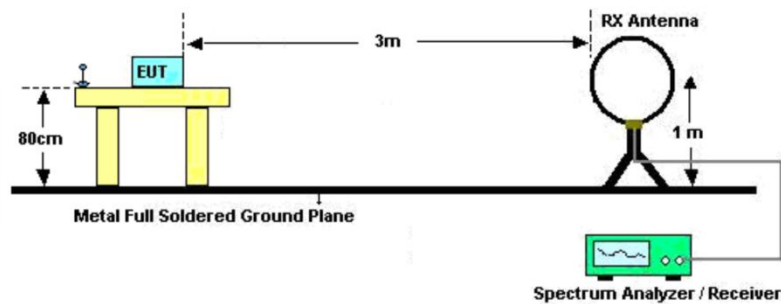
and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength

shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.

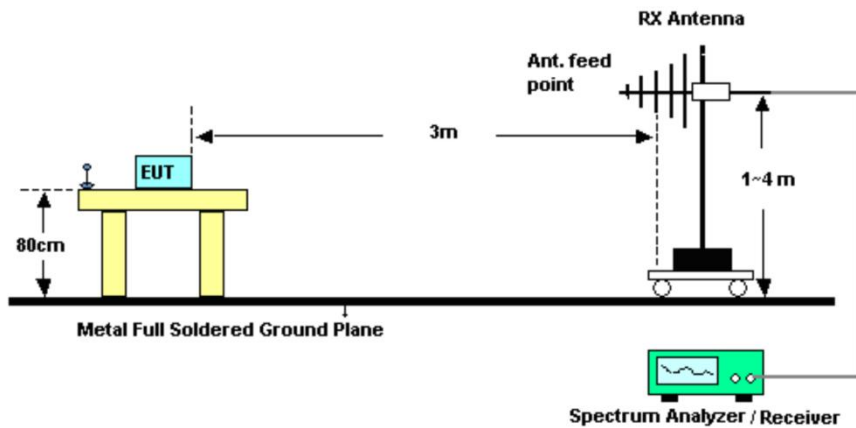
7. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. Antenna Requirements

3.4.3. Test Setup

3.4.3.1. For radiated emissions below 30MHz



3.4.3.2. For radiated emissions from 30MHz to 1GHz



3.4.4. Test Result

Please refer to the Appendix A2.

3.5. AC Power-Line Conducted Emission

3.5.1. Limit

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table:

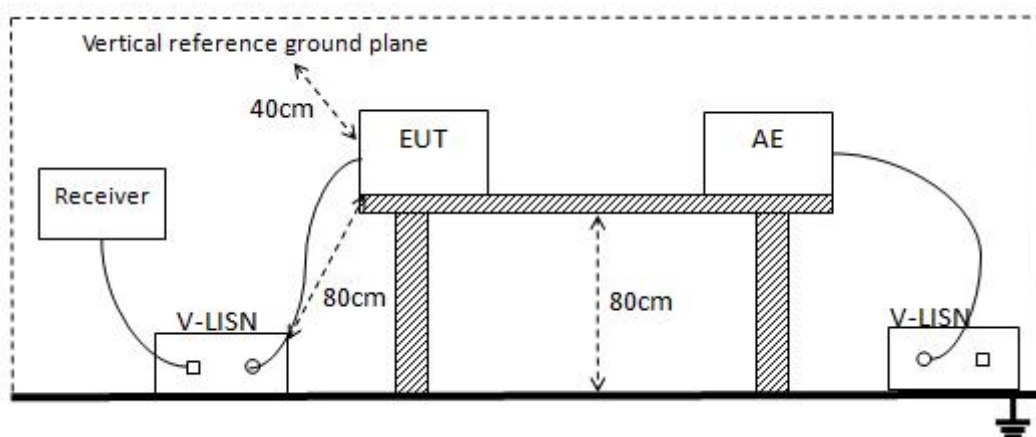
Frequency of emission (MHz)	Conducted limit (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

3.5.2. Test Procedure

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9 kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

3.5.3. Test Setup



3.5.4. Test Result

Please refer to the Appendix A2.

3.6. Antenna Requirement

3.6.1. Standard Requirement

According to 47 CFR 15.225, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

3.6.2. EUT Antenna

The antenna used for the EUT is coil antenna antenna, which meets the antenna requirements.

4. APPENDIX

Appendix A2	Test Data
Appendix B	Setup Photos
Appendix C1	External Photos
Appendix C2	Internal Photos

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