

Prüfbericht-Nr.: Auftrags-Nr.: Seite 1 von 18 CN21DD82 001 158226611 Test Report No.: Order No.: Page 1 of 18

Kunden-Referenz-Nr.: Auftragsdatum: N/A 18.02.2021

Client Reference No.: Order date:

VTech Electronics Limited Auftraggeber:

Client: 23F Tai Ping Industrial Center, Block 1, 57 Ting Kok Road, Tai Po, Hong Kong

LeapLand Adventures, Prüfgegenstand:

Test item: ABC SMILE TV, L'aventure LeapLand

Bezeichnung / Typ-Nr.: 6132

Identification / Type No.: 80-6132xx, (xx=00~99, see model differences for details)

Auftrags-Inhalt: FCC and ISED Certification Order content:

Prüfgrundlage: FCC Part 15 Subpart C, ANSI C63.10-2013

Test specification: RSS-247 Issue 2, RSS-Gen Issue 5

Wareneingangsdatum: 04.03.2021

Date of receipt:

Prüfmuster-Nr.: A003006149-001

Test sample No.:

Prüfzeitraum: 04.03.2021 - 15.03.2021

Testing period:

Ort der Prüfung: **Hong Kong**

Place of testing.

TÜV Rheinland Hong Prüflaboratorium:

Kong Ltd. Testing laboratory:

Prüfergebnis*:

Pass Test result*:

00 tot 02 05 00 00 00 00 08 06 002 01 02 40 30 50 10 500 30 80 10 e0 20 40 30 50

N/A = not applicable

kontrolliert von I reviewed by:

geprüft von / tested by:

Felicia Chan / Assistant Engineer 25.05.2021 25.05.2021 Sharon Li / Senior Manager

Name / Stellung Datum Name / Stellung Unterschrift Datum Unterschrift Name / Position Name / Position Signature Signature

Sonstiges / Other: FCC ID: G2R-6132

P(ass) = passed a.m test specification(s)

IC: 1135D-6132 HVIN: 6132

Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt

Condition of the test item at delivery:

Test item complete and undamaged 4 = ausreichend 1 = sehr gut 2 = gut 3 = befriedigend

* Legende: 5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet Legend: 1 = very good 2 = good3 = satisfactory 4 = sufficient 5 = poor N/T = not tested

Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.

F(ail) = failed a.m test specification(s)

This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.



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Product information

Manufacturers declarations

	Transceiver
Operating frequency range	2408 - 2472 MHz
Type of modulation	GFSK
Number of channels	3
Type of antenna	Integral PCB Antenna
Antenna gain (dBi)	0 dBi
Power level	fix
Type of equipment	stand alone radio device
Connection to public utility power line	No
Nominal voltage	3.0VDC
Independent Operation Modes	Transmitting

Product function and intended use

The equipment under test (EUT) is a SRD Remote controller.

FCC ID: G2R-6132/ IC: 1135D-6132 HVIN: 6132

Models	Product description
6132	Remote controller

The manufacturer declares that all models listed in the below table are all identical in schematics, PCB layout, and electronic components used except model number.

Model No.		Model Name	Color		Language
6132	80-613203	LeapLand Adventures	Green	UK	English
6132	80-613200	LeapLand Adventures	Green	US	English
6132	80-613200	LeapLand Adventures	Green	CAN	English
6132	80-613206	L'aventure LeapLand	Green	CAN	FR
6132	80-613265	ABC Smile TV	Blue	FR	FR
6132	80-613267	ABC Smile TV	Blue	SP	SP
6132	80-613254	ABC Smile TV	Pink		GER
6132	80-613264	ABC Smile TV	Blue	GER	GER
6132	80-613262	ABC Smile TV	Blue	NL	NL

Submitted documents

Circuit Diagram Block Diagram Technical Description User manual Label

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Independent Operation Modes

The basic operation modes are:

- Transmitting mode.

For further information refer to User Manual

Related Submittal(s) Grants

- This is a single application for certification of the Transmitter.

Remark

The test results in this test report are only relevant to the tested sample and does not involve any assessment in the production.

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Test Set-up and Operation Mode

Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation

level. The test modes were adapted accordingly in reference to the instructions for use.

Test Operation and Test Software

Test operation should refer to test methodology.

A test mode sample is provided by the applicant to control the operating channel. The RF output
power is fixed in the test mode sample. The setting of the RF output power used in the testing shall
be fixed on the firmware of the final end product.

Special Accessories and Auxiliary Equipment

- None

Countermeasures to achieve EMC Compliance

- None

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Test Methodology

Radiated Emission

The radiated emission measurements of the transmitter part were performed according to the procedures in ANSI C63.10-2013.

For measurement below 1GHz - the equipment under test (EUT) was placed at the middle of the 80 cm height turntable. For measurement above 1GHz - the EUT was placed at the middle of the 1.5 m height turntable and RF absorbing material was placed on ground plane between turntable and measuring antenna. During the testing, the EUT was operated standalone and arranged for maximum emissions. The EUT was tested in three orthogonal planes.

The investigation is performed with the EUT rotated 360° , the antenna height scanned between 1m and 4m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations. Repeat the measurement steps until the maximum emissions were obtained.

All radiated tests were performed at an antenna to EUT with 3 meters distance, unless stated otherwise in particular parts of this test report.

Field Strength Calculation

The field strength at 3 m was established by adding the meter reading of the spectrum analyzer to the factors associated with antenna correction factor, cable loss, preamplifiers and filter attenuation.

The equation is expressed as follow:

FS = R + AF + CF + FA - PA

Where FS = Field Strength in dBuV/m at 3 meters.

R = Reading of Spectrum Analyzer in dBuV.

AF = Antenna Factor in dB.

CF = Cable Attenuation Factor in dB.

FA = Filter Attenuation Factor in dB.

PA = Preamplifier Factor in dB.

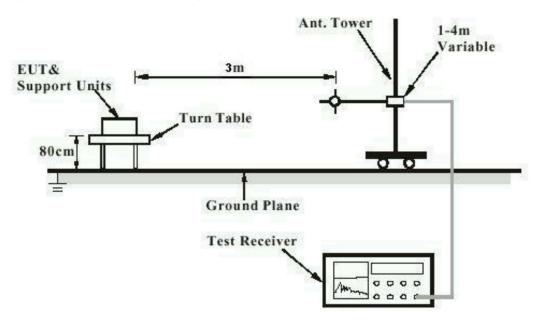
FA and PA are only be used for the measuring frequency above 1 GHz.

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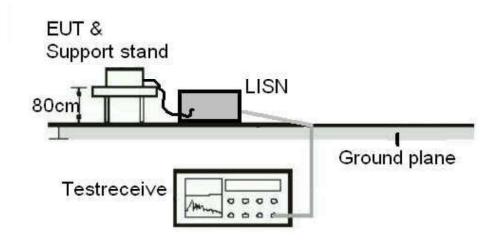
Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test



Note: Measurements above 1 GHz are done with a table height of 1.5m. In addition, there is RF absorbing material on the floor of the test site for above 1GHz measurement.

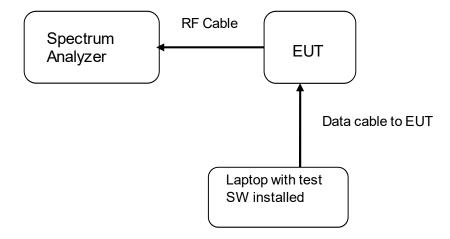
Diagram of Measurement Equipment Configuration for Mains Conduction Measurement (if applicable)



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Diagram of Equipment Configuration for Antenna-port Conducted Measurement (if applicable)



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Test Facility

Test Laboratory Information

TÜV Rheinland Hong Kong Ltd.

Address: 3-4, 11/F., Fou Wah Industrial Building, 10-16 Pun Shan Street, Tsuen Wan, N.T., Hong Kong·

Tel.: +852 2192 1000 Fax: +852 2192 1001 Email <u>service-gc@tuv.com</u>

Web: www.tuv.com

The test facility is recognized or accredited by the following organizations:

FCC

Type : Accredited Test Firm

Designation Number : HK0013 Test Firm Registration : 371735

Number

Scope : Intentional Radiators

Industry Canada

The 10m Semi-anechoic chamber used by TÜV Rheinland Hong Kong Ltd at Hong Kong Productivity Council has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing

Test Site Registration Number : 26152

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List of Test and Measurement Instruments

Radiated Emission

Equipment	Manufacturer	Туре	Cal. Date	Due Date
Multi-functional Anechoic Chamber (SVSWR)	Albatross	N/A	04 Jan 21	04 Jan 22
Standard Gain Horn	ETS-Lindgren	3160-07	24 Nov 20	24 Nov 22
Standard Gain Horn	ETS-Lindgren	3160-08	24 Nov 20	24 Nov 22
Standard Gain Horn	ETS-Lindgren	3160-10	30 Nov 20	30 Nov 22
Double-Ridged Waveguide Horn	EMCO	3116	30 Nov 20	30 Nov 22
Double-Ridged Waveguide Horn	EMCO	3117	11 Nov 20	11 Nov 22
Test Receiver	R&S	ESU26	07 Oct 20	07 Oct 21
Coaxial cable	Huber+Suhner	SF118/11N/11N/ 12000MM	07 Jan 21	07 Jan 23
Microwave Preamplifier	COM-POWER Corporation	PAM-118A	06Mar 20	06 Mar 21
Preamplifier 18GHz to 40GHz with cable	A.H. Systems, Inc.	PAM-1840VH	29 Jan 21	29 Jan 22
High Pass Filter (cutoff freq. =1000MHz)	Trilithic	23042	30 Oct 19	30 Oct 21
High Frequency Cable	Pasternack	PE3VNA4001-3M	29 Jan 21	29 Jan 23
Multi-functional Anechoic Chamber (NSA)	Albatross	Nil	6-Jan-21	6-Jan-22
Bi-conical Antenna	R&S	HK116	15-Sep-20	15-Sep-22
Log Periodic Antenna	R&S	HL223	15-Sep-20	15-Sep-22
Coaxial cable	Huber+Suhner	SF118/11N/11N/ 12000MM	7-Jan-21	7-Jan-23
Active Loop Antenna	EMCO	6502	3-Nov-20	3-Nov-22

Radio Test

Equipment	Manufacturer	Туре	Cal. Date	Due Date
Spectrum Analyzer	R&S	FSV40	21 Jan 21	21 Jan 22

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Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Conducted emission 9KHz-150KHz	±3.2 dB
2	Conducted emission 150KHz-30MHz	±2.7 dB
3	Radiated emission 9KHz-30MHz	± 4.7 dB
4	Radiated emission 30MHz-1GHz	± 4.9 dB
5	Radiated emission 1GHz-18GHz	± 4.8 dB
6	Radiated emission 18GHz-26GHz	± 5.1 dB
7	Radiated emission 26GHz-40GHz	± 5.1 dB
8	Conducted spurious emissions	± 2.7 dB
9	RF Power, Conducted	± 0.9 dB
10	Occupied Bandwidth	± 1.86 %
11	Radio Frequency	2.4 GHz: ± 6.5 x 10-8
12	Transmission Time	± 0.19 %

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor of k=2, which for the level of confidence is approximately 95%.

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Results FCC Part 15 - Subpart C / RSS-247 Issue 2

FCC 15.203 - Antenna Requirement 1

Pass

FCC Requirement: No antenna other than that furnished by the responsible party shall be used with the

device

Results: a) Antenna type:

Integral PCB Antenna

b) Manufacturer and model no:

N/A 0 dBi

c) Peak Gain:

Verdict: Pass

FCC 15.204 - Antenna Requirement 2

Pass

FCC Requirement: An intentional radiator may be operated only with the antenna with which it is

authorized. If an antenna is marketed with the intentional radiator, it shall be of a type

which is authorized with the intentional radiator.

Results: Only one integral antenna can be used.

Verdict: N/A

RSS-Gen 6.3 - External Control

Pass

IC Requirement: The device shall not have any external controls accessible to the user that enable it to

be adjusted, selected or programmed to operate in violation of the limits prescribed in

the applicable RSS.

Results: The device does not have any transmitter external controls accessible to the user that

can be adjusted and operated in violation of the limits of this standard.

Verdict: Pass

RSS-Gen 8.3 - Antenna Requirement

Pass

IC Requirement: When a measurement at the antenna connector is used to determine RF output power,

the effective gain of the device's antenna shall be stated, based on measurement or on

data from the antenna manufacturer.

Results: a) Antenna type: Integral PCB Antenna

b) Manufacturer N/A
c) model no N/A

d) Gain with reference to an isotropic radiator: 0 dBi

Verdict: Pass

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FCC 15.207/ RSS-Gen 8.8 – Conducted Emission on AC Mains

N/A

There is no AC power input or output ports on the EUT.

FCC 15.247 (a)(2) / RSS-247 5.2 – 6dB Bandwidth Measurement

Pass

FCC/ IC Requirement: Systems using digital modulation techniques may operate in the 902 – 928 MHz,

2400 – 2483.5 MHz, and 5725 – 5850 MHz bands. The minimum 6dB bandwidth

shall be at least 500kHz.

Test Specification: ANSI C63.10 - 2013

Test date : 10.03.2021 Mode of operation : Tx mode Supply voltage : 3VDC Temperature : 23°C Humidity : 51%

Results: For test protocols please refer to Appendix 1

Channel frequency (MHz)	6dB bandwidth (kHz)	Limit (kHz)
2408	1064	500
2438	813	500
2472	883.5	500

RSS-Gen 6.6 - Occupied Bandwidth

Pass

FCC/ IC Requirement: N/A

Test Specification: RSS-Gen
Test date: 10.03.2021
Mode of operation: Tx mode
Supply voltage: 3VDC
Temperature: 23°C
Humidity: 51%

Results: Pre-scan has been conducted to determine the worst-case mode from all possible

combinations between available modulations and packet types.

For test protocols refer to Appendix 1.

Frequency (MHz)	99% bandwidth (MHz)
2402	4.624
2440	3.720
2480	3.461

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Pass

FCC 15.247(b)(3) / RSS-247 5.4 – Maximum Peak Conducted Output Power

FCC/ IC Requirement: For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and

5725-5850MHz bands: 1 Watt (30dBm)

Test Specification: ANSI C63.10 - 2013

Test date : 10.03.2021 Mode of operation : Tx mode Supply voltage : 3VDC Temperature : 23°C Humidity : 51%

Results: For test protocols please refer to Appendix 1

Frequency (MHz)	Cable loss (dB)	Measured Output Power (dBm)	Limit (dBm)	Verdict
2408	0.5	-1.58	30.0	Pass
2438	0.5	-1.48	30.0	Pass
2472	0.5	-1.32	30.0	Pass

FCC 15.247(e) / RSS-247 5.2 - Power Spectral Density

Pass

FCC/ IC Requirement: For digitally modulated systems, the power spectral density conducted from the

intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz

band during any time interval of continuous transmission.

Test Specification: ANSI C63.10 - 2013

Test date : 10.03.2021

Mode of operation : Tx mode

Supply voltage : 3VDC

Temperature : 23°C

Humidity : 51%

Results: For test protocols please refer to Appendix 1.

Frequency (MHz)	Cable loss (dB)	Power density (dBm)	Limit (dBm)	Verdict
2408	0.5	-15.053	8.0	Pass
2438	0.5	-15.487	8.0	Pass
2472	0.5	-14.704	8.0	Pass

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FCC 15.247(d) / RSS-247 5.5 – Spurious Conducted Emissions

Pass

Test Specification: ANSI C63.10 - 2013

Test date : 20.10.2020 Mode of operation : Tx mode Supply voltage : 3VDC Temperature : 25°C Humidity : 56%

FCC/ IC Requirement: In any 100 kHz bandwidth outside the frequency band in which the spread spectrum

or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired

power, based on either an RF conducted or a radiated measurement.

Results: Pre-scan has been conducted to determine the worst-case mode from all possible

combinations between available modulations and data rate.

Only the worst cases is shown below. For test protocols refer to Appendix 1

Operating frequency (MHz)	Spurious frequency (MHz)	Spurious Level (dBm)	Reference value (dBm)	Limit (dBm)	Margin (dB)	Verdict
2408	7225.1	-40.873	-1.255	-21.255	19.613	Pass
2438	7313.1	-37.355	1.514	-18.486	18.869	Pass
2472	7414.9	-39.946	-0.365	-20.365	19.581	Pass

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FCC 15.205/ RSS-Gen 8.9 – Radiat	ed Emissions in Restricted Fred	quency Bands Pass
Test Specification: ANSI C63.10 – 2 Test date: 06.03.2021 Mode of operation: Tx mode Frequency range: 9kHz – 25GHz Supply voltage: 3VDC Temperature: 25.2°C Humidity: 50%	2013	
		radiated emissions which fall in the
combination	is been conducted to determine the setween available modulations insmit frequency modes comply with	
restricted ba	ands. There is no spurious found b	
Mode: 2408 MHz TX	Vertical Polarization	
Freq	Level	Limit/ Detector
MHz	dBuV/m	dBuV/m
2390.000	41.29	74.0 / PK
2390.000	27.63	54.0 / AV
4816.000	39.80	74.0 / PK
4816.000	26.23	54.0 / AV
7224.000	45.20	74.0 / PK
7224.000	29.73	54.0 / AV
Mode: 2408 MHz TX	Horizontal Polarization	
Freq	Level	Limit/ Detector
MHz	dBuV/m	dBuV/m
2390.000	41.83	74.0 / PK
2390.000	28.05	54.0 / AV
4816.000	37.73	74.0 / PK
4816.000	26.22	54.0 / AV
7224.000	42.56	74.0 / PK
7224.000	29.84	54.0 / AV
Mode: 2438 MHz TX	Vertical Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4876.000	43.58	74.0 / PK
4876.000	25.85	54.0 / AV
7314.000	45.02	74.0 / PK
7314.000	31.81	54.0 / AV
Mode: 2438 MHz TX	Horizontal Polarization	
Freq	Level	Limit/ Detector
MHz	dBuV/m	dBuV/m
4876.000	49.33	74.0 / PK
4876.000	25.91	54.0 / AV
7314.000	44.27	74.0 / PK
7314.000	32.00	54.0 / AV

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Mode: 2472 MHz TX	Vertical Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2483.500	41.20	74.0 / PK
2483.500	27.17	54.0 / AV
4944.000	38.19	74.0 / PK
4944.000	26.84	54.0 / AV
7416.000	41.65	74.0 / PK
7416.000	29.50	54.0 / AV
Mode: 2472 MHz TX	Horizontal Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2483.500	43.48	74.0 / PK
2483.500	28.50	54.0 / AV
4944.000	38.94	74.0 / PK
4944.000	26.60	54.0 / AV
7416.000	49.28	74.0 / PK
7416.000	29.06	54.0 / AV

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