





# **TEST REPORT**

No. I21N04009-BLE

for

**TCL Communication Ltd.** 

**MOVETIME FAMILY WATCH** 

**Model Name: MT40A** 

with

**Hardware Version: PIO** 

**Software Version: V1.0** 

FCC ID: 2ACCJB112

Issued Date: 2021-12-29

**Designation Number: CN1210** 

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of SAICT.

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# **CONTENTS**

CONT	TENTS	2
1. S	SUMMARY OF TEST REPORT	3
1.1.	Тезт Ітемѕ	3
1.2.	TEST STANDARDS	3
1.3.	TEST RESULT	3
1.4.	TESTING LOCATION	3
1.5.	Project data	3
1.6.	Signature	3
2. C	CLIENT INFORMATION	4
2.1.	APPLICANT INFORMATION	4
2.2.	MANUFACTURER INFORMATION	4
3. E	EQUIPMENT UNDER TEST (EUT) AND ANCILLARY EQUIPMENT (AE)	5
3.1.	ABOUT EUT	5
3.2.	INTERNAL IDENTIFICATION OF EUT USED DURING THE TEST	5
3.3.	INTERNAL IDENTIFICATION OF AE USED DURING THE TEST	5
3.4.	GENERAL DESCRIPTION	6
4. R	REFERENCE DOCUMENTS	7
4.1.	DOCUMENTS SUPPLIED BY APPLICANT	7
4.2.	REFERENCE DOCUMENTS FOR TESTING	7
5. T	TEST RESULTS	8
5.1.	TESTING ENVIRONMENT	8
5.2.	TEST RESULTS	8
5.3.	STATEMENTS	8
6. T	TEST EQUIPMENTS UTILIZED	9
7. L	ABORATORY ENVIRONMENT	10
8. N	MEASUREMENT UNCERTAINTY	11
ANNE	EX A: DETAILED TEST RESULTS	12
TES	T CONFIGURATION	12
A.0	ANTENNA REQUIREMENT	15
A.1	MAXIMUM PEAK OUTPUT POWER	16
A.2	PEAK POWER SPECTRAL DENSITY	17
A.3	6DB BANDWIDTH	20
A.4	BAND EDGES COMPLIANCE	23
A.5	TRANSMITTER SPURIOUS EMISSION - CONDUCTED	25
A.6	TRANSMITTER SPURIOUS EMISSION - RADIATED	32
A.7	AC POWER LINE CONDUCTED EMISSION	39



# 1. Summary of Test Report

## 1.1. Test Items

Product Name MOVETIME FAMILY WATCH

Model Name MT40A

Applicant's name TCL Communication Ltd.

Manufacturer's Name TCL Communication Ltd.

## 1.2. Test Standards

FCC CFR 47, Part 15, Subpart C 2019

#### 1.3. Test Result

#### **Pass**

Please refer to "5.2. Test Results"

#### 1.4. Testing Location

Address: Building G, Shenzhen International Innovation Center, No.1006 Shennan Road, Futian District, Shenzhen, Guangdong, P. R. China

## 1.5. Project data

Testing Start Date: 2021-12-18
Testing End Date: 2021-12-29

#### 1.6. Signature

Lin Zechuang

(Prepared this test report)

An Ran

(Reviewed this test report)

**Zhang Bojun** 

(Approved this test report)



# 2. Client Information

## 2.1. Applicant Information

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#### 2.2. Manufacturer Information

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# 3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

### 3.1. About EUT

Product Name MOVETIME FAMILY WATCH

Model Name MT40A

Frequency Range 2400MHz~2483.5MHz

Type of Modulation GFSK
PHY LE 1M
Number of Channels 40

Antenna Type Integrated
Antenna Gain -8.0dBi

Power Supply 3.8V DC by Battery

FCC ID 2ACCJB112

Condition of EUT as received No abnormality in appearance

Note: Components list, please refer to documents of the manufacturer; it is also included in the original test record of Shenzhen Academy of Information and Communications Technology.

### 3.2. Internal Identification of EUT used during the test

EUT ID*	IMEI	<b>HW Version</b>	SW Version	<b>Receive Date</b>
UT06aa	352213110163741	PIO	V1.0	2021-12-20
UT01aa	352213110163709	PIO	V1.0	2021-10-18

<sup>\*</sup>EUT ID: is used to identify the test sample in the lab internally.

UT06aa is used for conduction test, UT01aa is used for radiation test.

#### 3.3. Internal Identification of AE used during the test

AE ID*	Description	AE IC
AE1	Battery	/
AE2	Charger	/
AE3	Date Cable	/

#### AE1

Model ZWD602531V

Manufacturer ZWD
Capacity 600mAh
Nominal Voltage 3.8V

AE2

Model UC11 Manufacturer PUAN

AE3

Model CDA3122005C1

Manufacturer JUWEI



\*AE ID: is used to identify the test sample in the lab internally.

#### 3.4. General Description

The Equipment under Test (EUT) is a model of MOVETIME FAMILY WATCH with PIFA antenna and battery.

It consists of normal options: travel charger, USB cable and the Watch.

Manual and specifications of the EUT were provided to fulfil the test.

Samples undergoing test were selected by the client.

According to the customer's description, MT40A (SL8521E chip) is a variant of MT40A (SC9820E chip). The two chips only have different screen printing information, other no difference. And the two chips themselves have no change, also does not affect RF performance.

This differences does not affect the following test cases. All results can be referred to the initial model. The spot check of output power see ANNEX attached to the end of report, and the transmitter spurious emission (radiated) has been retested and updated in the report. The initial model report number is I19N01990-BLE.



# 4. Reference Documents

# 4.1. Documents supplied by applicant

EUT feature information is supplied by the applicant or manufacturer, which is the basis of testing.

## 4.2. Reference Documents for testing

The following documents listed in this section are referred for testing.

Reference	Title	Version
FCC Part 15	FCC CFR 47, Part 15, Subpart C:	2019
	15.205 Restricted bands of operation;	
	15.209 Radiated emission limits, general requirements;	
	15.247 Operation within the bands 902–928MHz,	
	2400-2483.5 MHz, and 5725-5850 MHz	
ANSI C63.10	American National Standard of Procedures for Compliance	2013
	Testing of Unlicensed Wireless Devices	



## 5. Test Results

#### 5.1. <u>Testing Environment</u>

Normal Temperature: 15~35°C Relative Humidity: 20~75%

#### 5.2. Test Results

No	Test cases	Sub-clause of Part 15C	Verdict
0	Antenna Requirement	15.203	Р
1	Maximum Peak Output Power	15.247 (b)	Р
2	Peak Power Spectral Density	15.247 (e)	Р
3	6dB Bandwidth	15.247 (a)	Р
4	Band Edges Compliance	15.247 (d)	Р
5	Transmitter Spurious Emission - Conducted	15.247 (d)	Р
6	Transmitter Spurious Emission - Radiated	15.247, 15.205, 15.209	Р
7	AC Power line Conducted Emission	15.107, 15.207	Р

See ANNEX A for details.

#### 5.3. Statements

SAICT has evaluated the test cases requested by the applicant/manufacturer as listed in section 5.2 of this report, for the EUT specified in section 3, according to the standards or reference documents listed in section 4.2.

#### Disclaimer:

- A. After confirmation with the customer, the sample information provided by the customer may affect the validity of the measurement results in this report, and the impact and consequences arising therefrom shall be borne by the customer.
- B. The samples in this report are provided by the customer, and the test results are only applicable to the samples received.



# 6. Test Equipments Utilized

## **Conducted test system**

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Due date	Calibration Period
1	Vector Signal Analyzer	FSV40	100903	Rohde & Schwarz	2022-12-29	1 year
2	Power Sensor	U2021XA	MY55430013	Keysight	2022-01-13	1 year
3	Data Acquisiton	U2531A	TW55443507	Keysight	/	/
4	RF Control Unit	JS0806-2	21C8060398	Tonscend	2022-05-09	1 year
5	Test Receiver	ESCI	100702	Rohde & Schwarz	2022-01-13	1 year
6	LISN	ENV216	102067	Rohde & Schwarz	2022-07-15	1 year

Radiated test system

	Naulateu test system					
No.	Equipment	Model	Serial	Manufacturer	Calibration	Calibration
NO.	Equipment	Wiodei	Number	Wanuracturer	Due date	Period
1	Loop Antenna	HLA6120	35779	TESEQ	2022-04-25	3 years
2	BiLog Antenna	3142E	0224831	ETS-Lindgren	2024-05-27	3 years
3	Horn Antenna	3117	00066577	ETS-Lindgren	2022-04-02	3 years
1	Horn Antenna	QSH-SL-18	17013	Q-par	2023-01-06	3 years
4		-26-S-20				
5	Horn Antenna	QSH-SL-8-	17014	Q-par	2023-01-06	3 years
5	Hom Antenna	26-40-K-20	17014	Q-pai	2023-01-06	
6	Test Receiver	ESR7	101676	Rohde & Schwarz	2022-11-24	1 year
7	Spectrum	FSV40	404400	Rohde & Schwarz	2022-01-13	1 voor
'	Analyser	F3V40	101192	Runue & Schwarz	2022-01-13	1 year
8	Chamber	FACT3-2.0	1285	ETS-Lindgren	2023-05-29	2 years

#### **Test software**

No.	Equipment	Manufacturer	Version
1	RF Test System	Tonscend	2.6
2	EMC32	Rohde & Schwarz	10.50.40

EUT is engineering software provided by the customer to control the transmitting signal.

The EUT was programmed to be in continuously transmitting mode.

#### **Anechoic chamber**

Fully anechoic chamber by ETS-Lindgren



# 7. Laboratory Environment

#### Semi-anechoic chamber

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 20 %, Max. = 75 %
Shielding effectiveness	0.014MHz-1MHz> 60 dB; 1MHz-18000MHz>90 dB
Electrical insulation	> 2MΩ
Ground system resistance	< 4 Ω
Normalised site attenuation (NSA)	< ±4 dB, 3 m distance, from 30 to 1000 MHz

#### Shielded room

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 20 %, Max. = 75 %
Shielding effectiveness	0.014MHz-1MHz> 60 dB; 1MHz-1000MHz>90 dB
Electrical insulation	> 2MΩ
Ground system resistance	< 4 Ω

## Fully-anechoic chamber

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 20 %, Max. = 75 %
Shielding effectiveness	0.014MHz-1MHz> 60 dB; 1MHz-18000MHz>90 dB
Electrical insulation	> 2MΩ
Ground system resistance	< 4 Ω
Voltage Standing Wave Ratio (VSWR)	≤ 6 dB, from 1 to 18 GHz, 3 m distance
Uniformity of field strength	Between 0 and 6 dB, from 80 to 6000 MHz



# 8. Measurement Uncertainty

Test Name	Uncertain	ty ( <i>k</i> =2)
Maximum Peak Output Power	1.32	dB
Peak Power Spectral Density	2.32	dB
3. 6dB Bandwidth	66H	łz
4. Band Edges Compliance	1.92	dB
	30MHz≤f<1GHz	1.41dB
5 Transmitter Spurious Emission Condusted	1GHz≤f<7GHz	1.92dB
5. Transmitter Spurious Emission - Conducted	7GHz≤f<13GHz	2.31dB
	13GHz≤f≤26GHz	2.61dB
	9kHz≤f<30MHz	1.79dB
6 Transmitter Churique Emission Dedicted	30MHz≤f<1GHz	4.86dB
6. Transmitter Spurious Emission - Radiated	1GHz≤f<18GHz	4.82dB
	18GHz≤f≤40GHz	2.90dB
7. AC Power line Conducted Emission	150kHz≤f≤30MHz	2.62dB



## **ANNEX A: Detailed Test Results**

## **Test Configuration**

The measurement is made according to ANSI C63.10.

#### 1) Conducted Measurements

- 1. Connect the EUT to the test system correctly.
- 2. Set the EUT to the required work mode.
- 3. Set the EUT to the required channel.
- 4. Set the spectrum analyzer to start measurement.
- 5. Record the values.

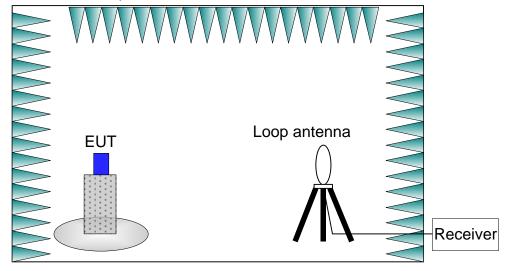


#### 2) Radiated Measurements

#### Test setup:

#### 9kHz-30MHz:

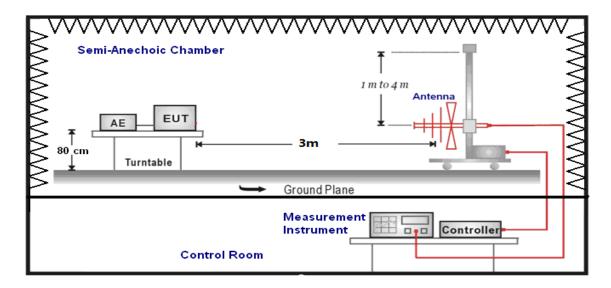
The EUT are measured in a semi-anechoic chamber. The EUT is placed on a non-conductive stand of 80cm high, and at a measurement distance of 3m from the receiving antenna. The center of the receiving loop antenna is 1.0 meter above the ground. The test setup refers to figure below. Detected emissions were maximized at each frequency by rotating the EUT and adjusting the receiver antenna polarization.





#### 30MHz-1GHz:

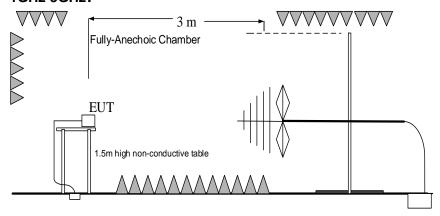
The EUT are measured in a semi-anechoic chamber. The EUT is placed on a non-conductive stand of 80cm high, and at a measurement distance of 3m from the receiving antenna. The center of the receiving antenna is 1.0 meter to 4.0 meter above the ground. The test setup refers to figure below. Detected emissions were maximized at each frequency by rotating the EUT and adjusting the receiver antenna polarization.



#### Above 1GHz:

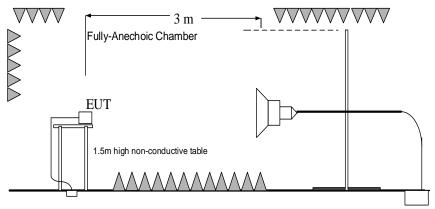
EUT was placed on a 1.5 meter high non-conductive table at a 3 meter test distance from the receive antenna. The test setup refers to figure below. Detected emissions were maximized at each frequency by rotating the EUT and adjusting the receiving antenna polarization.

#### 1GHz-3GHz:



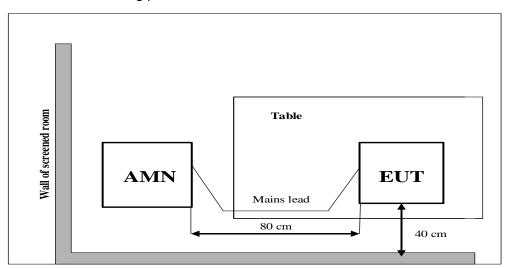


#### 3GHz-40GHz:



### 3) AC Power line Conducted Emission Measurement

For Bluetooth LE, the EUT is working under test mode. The EUT is commanded to operate at maximum transmitting power.





# A.0 Antenna requirement

#### **Measurement Limit:**

Standard	Requirement
Otandard	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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of
FCC CRF Part 15.203	this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators
	which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

Conclusion: The Directional gains of antenna used for transmitting is -8.0dBi.

The RF transmitter uses an integrate antenna without connector.



# A.1 Maximum Peak Output Power

#### Method of Measurement: See ANSI C63.10-clause 11.9.1.3

The maximum peak conducted output power may be measured using a broadband peak RF power meter.

#### **Measurement Limit:**

Standard	Limit (dBm)
FCC 47 CRF Part 15.247(b)	< 30

#### **Measurement Results:**

Mode	Frequency (MHz)	RF output power (dBm)	Conclusion
	2402(CH0)	4.48	Р
LE 1M	2440(CH19)	5.83	Р
	2480(CH39)	5.01	Р

**Conclusion: Pass** 



# A.2 Peak Power Spectral Density

Method of Measurement: See ANSI C63.10-clause 11.10.2

#### **Measurement Limit:**

Standard	Limit (dBm/3 kHz)
FCC 47 CRF Part 15.247(e)	< 8 dBm/3 kHz

#### **Measurement Results:**

Mode	Frequency (MHz)	Peak Power Sp (dB	•	Conclusion
	2402(CH0)	Fig.1	-11.18	Р
LE 1M	2440(CH19)	Fig.2	-9.85	Р
	2480(CH39)	Fig.3	-10.65	Р

See below for test graphs.

**Conclusion: PASS** 



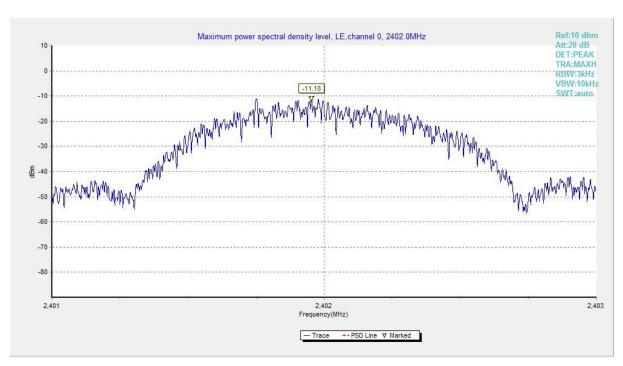


Fig.1 Power Spectral Density (CH0), LE 1M

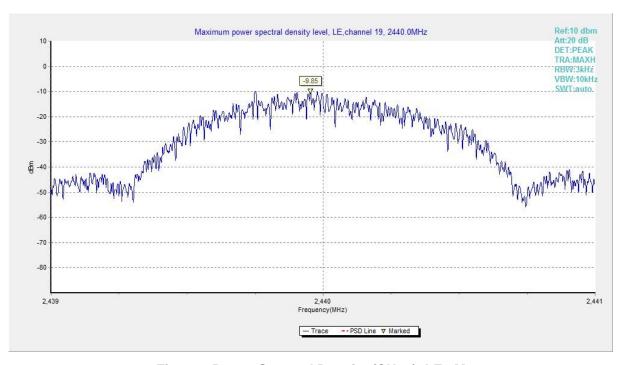


Fig.2 Power Spectral Density (CH19), LE 1M



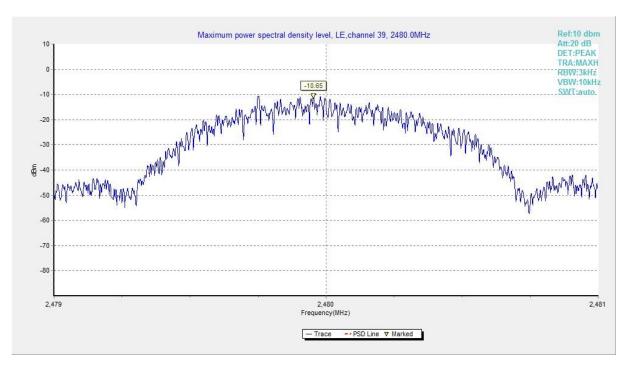


Fig.3 Power Spectral Density (CH39), LE 1M



## A.3 6dB Bandwidth

Method of Measurement: See ANSI C63.10-clause 11.8.2

#### **Measurement Limit:**

Standard	Limit (kHz)
FCC 47 CFR Part 15.247 (a)	≥ 500

#### **Measurement Result:**

Mode	Frequency (MHz)	Test Results (kHz)		Conclusion
	2402(CH0)	Fig.4	664.00	Р
LE 1M	2440(CH19)	Fig.5	664.00	Р
	2480(CH39)	Fig.6	663.50	Р

See below for test graphs.

**Conclusion: PASS** 



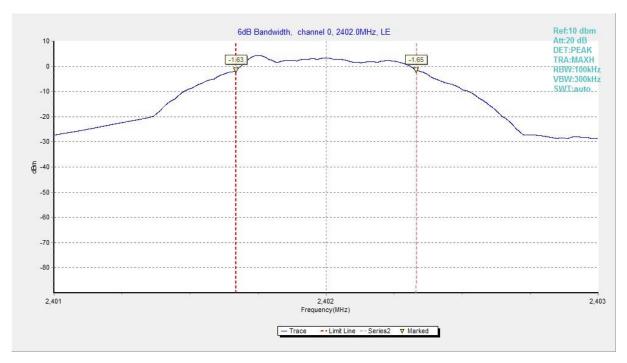


Fig.4 6dB Bandwidth (CH0), LE 1M

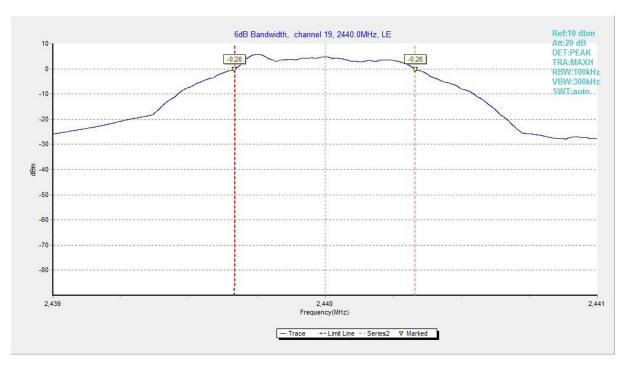


Fig.5 6dB Bandwidth (CH19), LE 1M



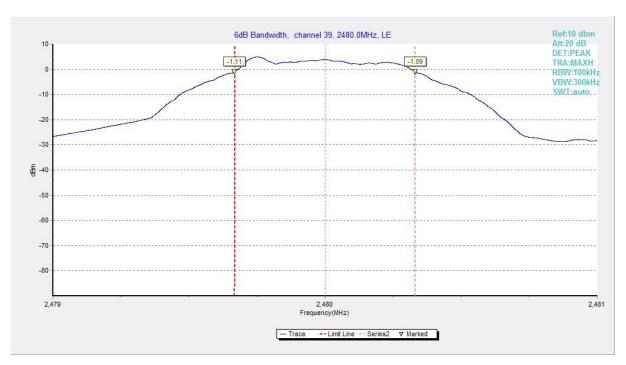


Fig.6 6dB Bandwidth (CH39), LE 1M



# A.4 Band Edges Compliance

Method of Measurement: See ANSI C63.10-clause 11.13.3.2

#### **Measurement Limit:**

Standard	Limit (dBm)
FCC 47 CFR Part 15.247 (d)	≤ -20

#### **Measurement Result:**

Mode	Frequency (MHz)	Test Results (dBm)		Conclusion
LE 1M	2402(CH0)	Fig.7	-58.57	Р
LE IIVI	2480(CH39)	Fig.8	-64.15	Р

See below for test graphs.

**Conclusion: PASS** 



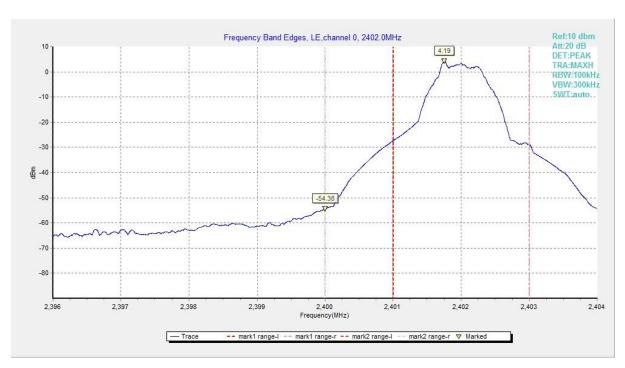


Fig.7 Band Edges (CH0), LE 1M

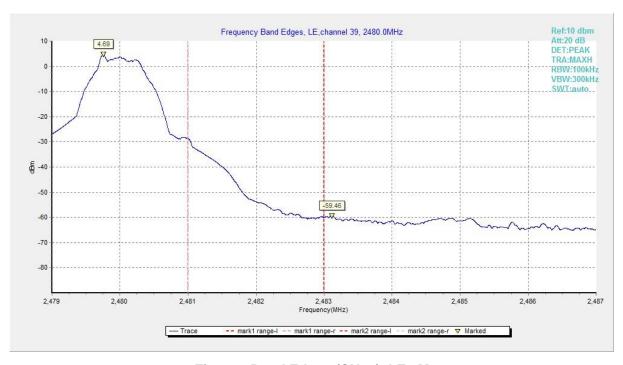


Fig.8 Band Edges (CH39), LE 1M



# A.5 Transmitter Spurious Emission - Conducted

Method of Measurement: See ANSI C63.10-clause 11.11.2&11.11.3

#### **Measurement Limit:**

Standard	Limit (dBm)
FCC 47 CFR Part 15.247 (d)	20dBm below peak output power in 100 kHz
FCC 47 CFR Pait 15.247 (u)	bandwidth

#### **Measurement Results:**

Mode	Channel	Frequency Range	Test Results	Conclusion	
			2.402 GHz	Fig.9	Р
	0	1GHz -3GHz	Fig.10	Р	
		3GHz-10GHz	Fig.11	Р	
		2.440 GHz	Fig.12	Р	
	19	1GHz -3GHz	Fig.13	Р	
GFSK		3GHz-10GHz	Fig.14	Р	
		2.480 GHz	Fig.15	Р	
	39	1GHz -3GHz	Fig.16	Р	
		3GHz-10GHz	Fig.17	Р	
	All channels	30MHz-1GHz	Fig.18	Р	
	All Glaffiels	10GHz-26GHz	Fig.19	Р	

See below for test graphs.

**Conclusion: Pass** 



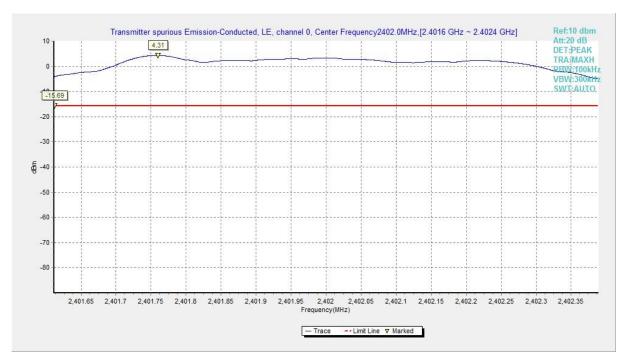


Fig.9 Conducted Spurious Emission (Ch0, Center Frequency)

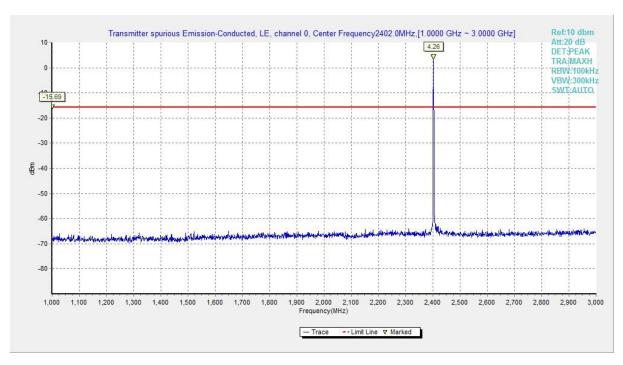


Fig.10 Conducted Spurious Emission (Ch0, 1 GHz-3 GHz)



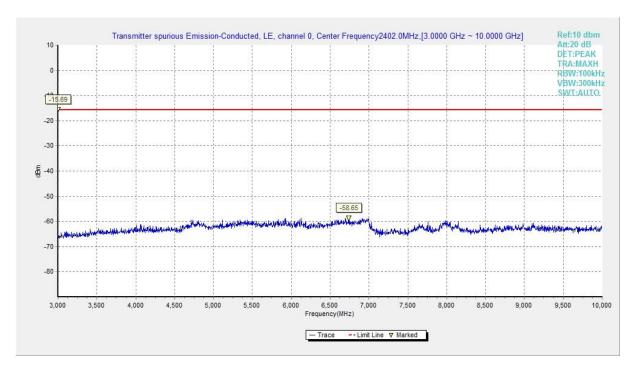


Fig.11 Conducted Spurious Emission (Ch0, 3 GHz-10 GHz)

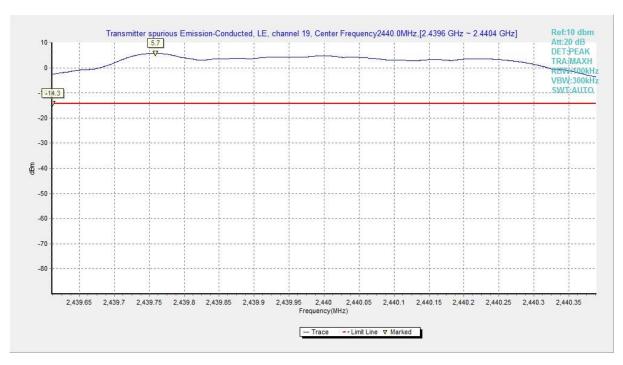


Fig.12 Conducted Spurious Emission (Ch19, Center Frequency)



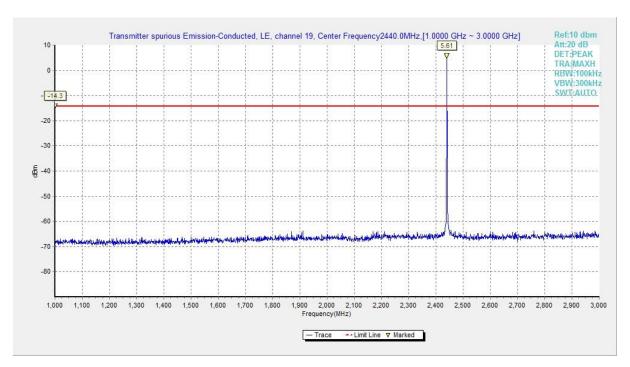


Fig.13 Conducted Spurious Emission (Ch19, 1 GHz-3 GHz)

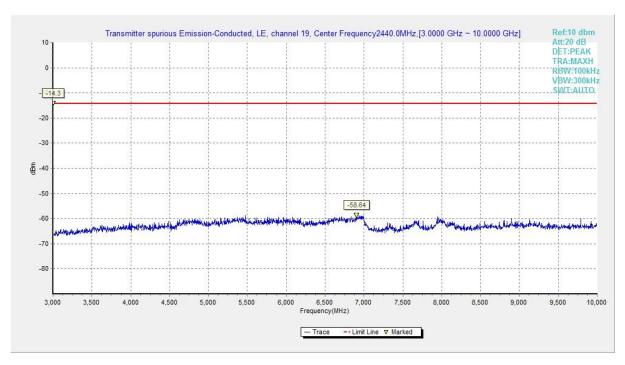


Fig.14 Conducted Spurious Emission (Ch19, 3 GHz-10 GHz)



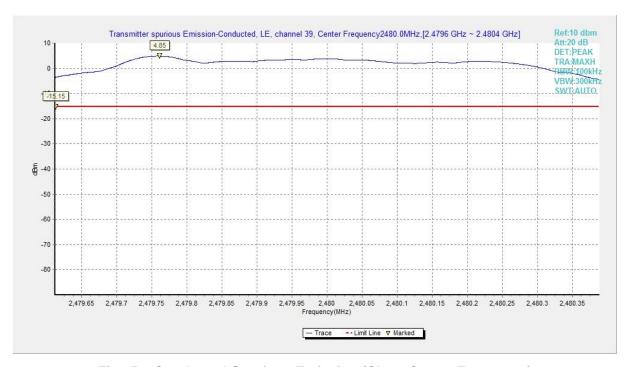


Fig.15 Conducted Spurious Emission (Ch39, Center Frequency)

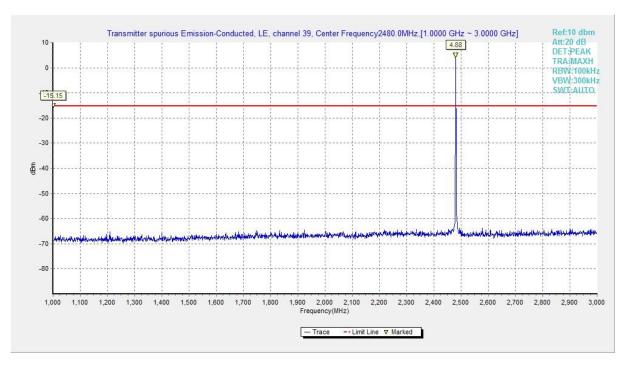


Fig.16 Conducted Spurious Emission (Ch39, 1 GHz-3 GHz)



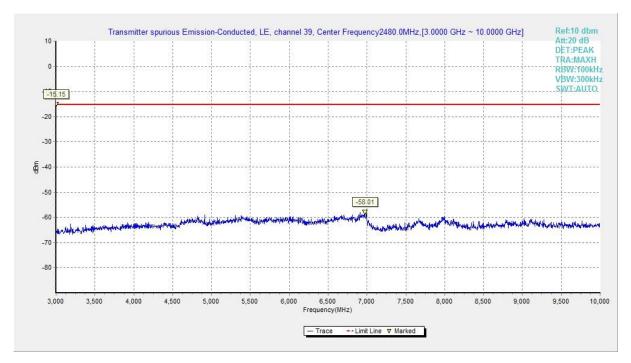


Fig.17 Conducted Spurious Emission (Ch39, 3 GHz-10 GHz)

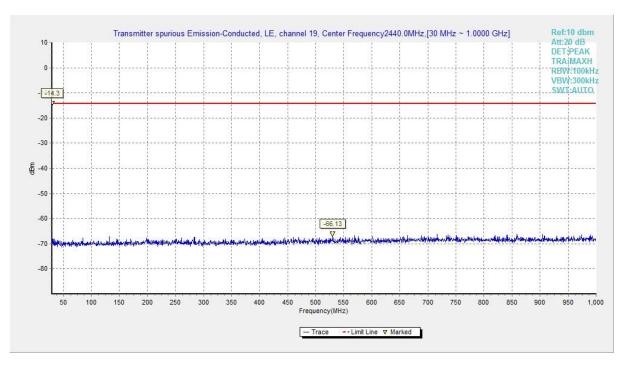


Fig.18 Conducted Spurious Emission (All channels, 30 MHz-1 GHz)



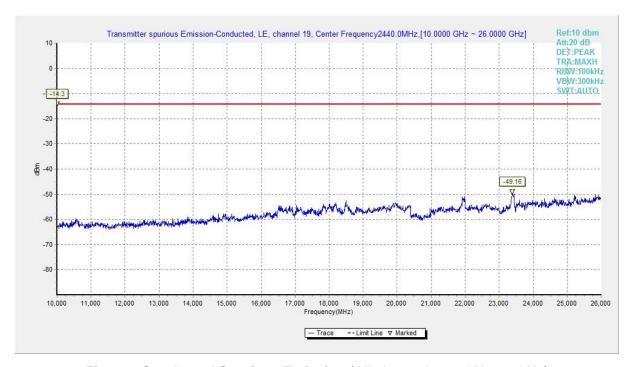


Fig.19 Conducted Spurious Emission (All channels, 10 GHz-26 GHz)



### A.6 Transmitter Spurious Emission - Radiated

Method of Measurement: See ANSI C63.10-clause 6.4&6.5&6.6

#### Measurement Limit:

Standard	Limit (dBm)	
FCC 47 CFR Part 15.247, 15.205, 15.209	20dBm below peak output power	

In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

#### Limit in restricted band:

Frequency of emission (MHz)	Field strength(μV/m)	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

#### **Test Condition:**

The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

Frequency of emission (MHz)	RBW/VBW	Sweep Time(s)
30-1000	120kHz/300kHz	5
1000-4000	1MHz/3MHz	15
4000-18000	1MHz/3MHz	40
18000-26500	1MHz/3MHz	20

**Note:** According to the performance evaluation, the radiated emission margin of EUT is over 20dB in the band from 9kHz to 30MHz. Therefore, the measurement starts from 30MHz to tenth harmonic. The measurement results include the horizontal polarization and vertical polarization measurements.



#### **Measurement Results:**

Mode	Channel	Frequency Range	Test Results	Conclusion
	0	1 GHz ~18 GHz	Fig.20	Р
	19	1 GHz ~18 GHz	Fig.21	Р
	39	1 GHz ~18 GHz	Fig.22	Р
GFSK	Restricted Band(CH0)	2.38 GHz ~ 2.45 GHz	Fig.23	Р
GFSK	Restricted Band(CH39)	2.45 GHz ~ 2.5 GHz	Fig.24	Р
		9 kHz ~30 MHz	Fig.25	Р
	All channels	30 MHz ~1 GHz	Fig.26	Р
		18 GHz ~16.5 GHz	Fig.27	Р

## Worst Case Result CH0 (1-18GHz)

Frequency	MaxPeak	Limit	Margin	Del	Corr.
(MHz)	(dBµV/m)	(dBµV/m)	(dB)	Pol	(dB/m)
8281.285714	46.86	74.00	27.14	Н	6.0
9515.142857	46.71	74.00	27.29	Н	7.1
10829.142857	48.54	74.00	25.46	Н	9.2
12443.142857	48.75	74.00	25.25	V	11.4
14844.428572	50.69	74.00	23.31	Н	13.0
16982.142857	53.91	74.00	20.09	Н	18.3

Frequency	Average	Limit	Margin	Pol	Corr.
(MHz)	(dBµV/m)	(dBµV/m)	(dB)	POI	(dB/m)
8281.285714	33.53	54.00	20.47	Н	6.0
9515.142857	34.47	54.00	19.53	Н	7.1
10829.142857	35.35	54.00	18.65	Н	9.2
12443.142857	36.84	54.00	17.16	V	11.4
14844.428572	38.59	54.00	15.41	Н	13.0
16982.142857	42.24	54.00	11.76	Н	18.3

## CH19 (1-18GHz)

Frequency	MaxPeak	Limit	Margin	Pol	Corr.
(MHz)	(dBµV/m)	(dBµV/m)	(dB)	POI	(dB/m)
7020.428572	45.22	74.00	28.78	V	5.0
8235.428572	45.62	74.00	28.38	Н	5.9
9463.285714	46.66	74.00	27.34	Н	7.0
11232.000000	47.73	74.00	26.27	Н	9.7
14814.000000	51.04	74.00	22.96	Н	12.9
16910.142857	55.29	74.00	18.71	Н	18.1



Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
7020.428572	33.15	54.00	20.85	V	5.0
8235.428572	33.72	54.00	20.28	Н	5.9
9463.285714	33.74	54.00	20.26	Н	7.0
11232.000000	35.28	54.00	18.72	Н	9.7
14814.000000	38.53	54.00	15.47	Н	12.9
16910.142857	42.04	54.00	11.96	Н	18.1

## CH39 (1-18GHz)

Frequency	MaxPeak	Limit	Margin	Pol	Corr.
(MHz)	(dBµV/m)	(dBµV/m)	(dB)	FOI	(dB/m)
9054.000000	46.15	74.00	27.85	Н	6.5
10905.428572	48.22	74.00	25.78	V	9.4
12275.571429	49.23	74.00	24.77	Н	11.0
14833.714286	50.88	74.00	23.12	V	12.9
16505.571429	53.39	74.00	20.61	Н	16.3
17972.142857	54.23	74.00	19.77	V	19.1

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
9054.000000	33.55	54.00	20.45	Н	6.5
10905.428572	35.68	54.00	18.32	V	9.4
12275.571429	36.44	54.00	17.56	Н	11.0
14833.714286	38.65	54.00	15.35	V	12.9
16505.571429	41.32	54.00	12.68	Н	16.3
17972.142857	42.29	54.00	11.71	V	19.1

#### Note:

A "reference path loss" is established and the  $A_{Rpl}$  is the attenuation of "reference path loss", and Antenna Factor, the gain of the preamplifier, the cable loss.  $P_{Mea}$  is the field strength recorded from the instrument.

The measurement results are obtained as described below:

Result=  $P_{Mea}$  +Cable Loss +Antenna Factor-Gain of the preamplifier.

See below for test graphs.

**Conclusion: Pass** 



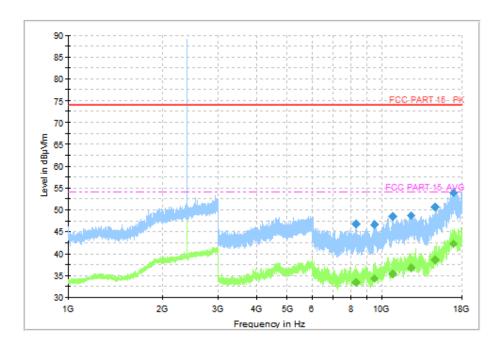


Fig.20 Radiated Spurious Emission (LE 1M, Ch0, 1 GHz ~18 GHz)

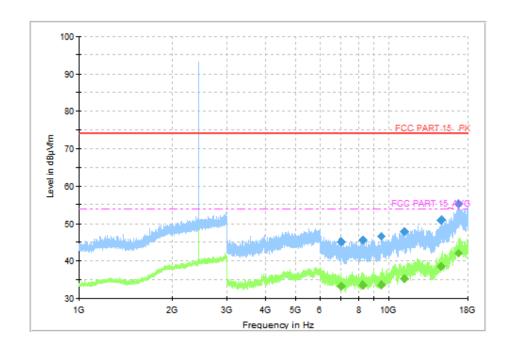


Fig.21 Radiated Spurious Emission (LE 1M, Ch19, 1 GHz ~18 GHz)



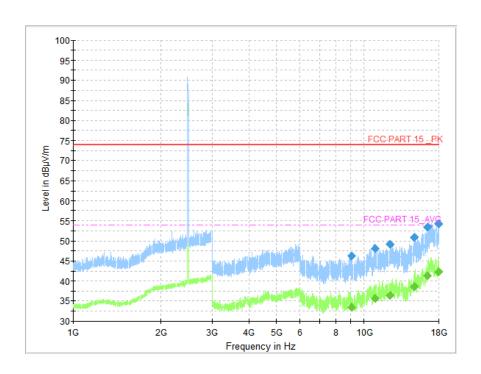


Fig.22 Radiated Spurious Emission (LE 1M, Ch39, 1 GHz ~18 GHz)

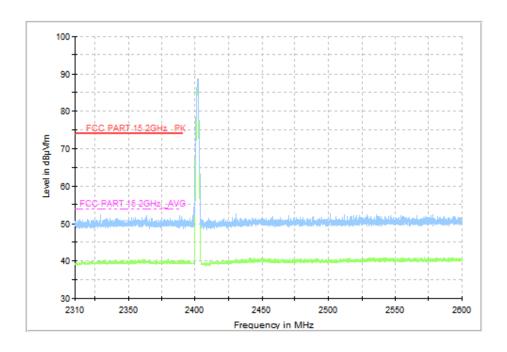


Fig.23 Radiated Band Edges (LE 1M, Ch0, 2380GHz~2450GHz)



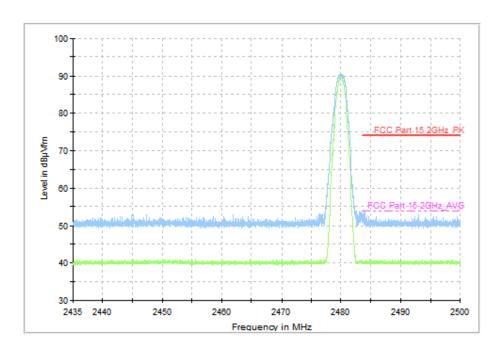


Fig.24 Radiated Band Edges (LE 1M, Ch39, 2450GHz~2500GHz)

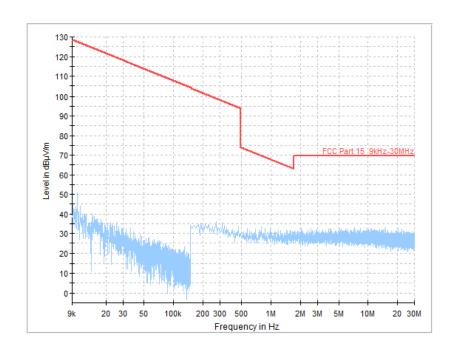


Fig.25 Radiated Spurious Emission (All Channels, 9 kHz-30 MHz)



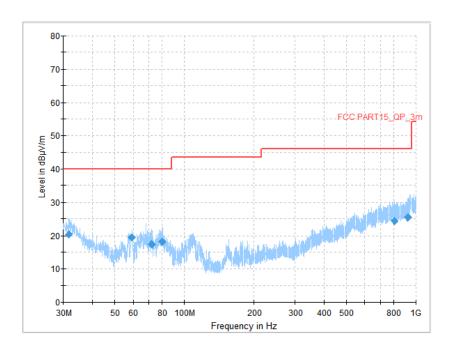


Fig.26 Radiated Spurious Emission (All Channels, 30 MHz-1 GHz)

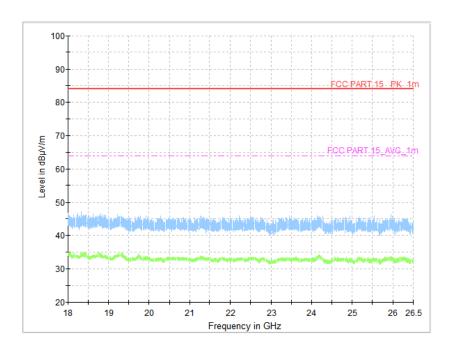


Fig.27 Radiated Spurious Emission (All Channels, 18 GHz-26.5 GHz)



#### A.7 AC Power line Conducted Emission

Method of Measurement: See ANSI C63.10-clause 6.2

#### **Test Condition:**

Voltage (V)	Frequency (Hz)
120	60

#### **Measurement Result and limit:**

Frequency range	Quasi-peak	Average-peak	Result (dBμV)		Conclusion
(MHz)	Limit (dBμV)	Limit (dBμV)	Traffic	ldle	Conclusion
0.15 to 0.5	66 to 56	56 to 46			
0.5 to 5	56	46	Fig.28	Fig.29	Р
5 to 30	60	50			

NOTE: The limit decreases linearly with the logarithm of the frequency in the range  $0.15\,$  MHz to  $0.5\,$  MHz.

Note: The measurement results include the L1 and N measurements.

See below for test graphs.

**Conclusion: Pass** 



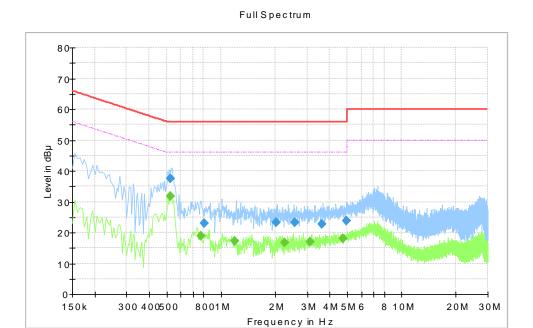


Fig.28 AC Power line Conducted Emission (Traffic), LE 1M

#### Measurement Results: Quasi Peak

Frequency	Quasi Peak	Limit	Margin	Line	Line Filter	Corr.
(MHz)	(dBµV)	(dBµV)	(dB)			(dB)
0.525	37.64	56.00	18.36	L1	ON	9.6
0.810	23.13	56.00	32.87	N	ON	9.6
2.020	23.16	56.00	32.84	L1	ON	9.7
2.565	23.27	56.00	32.73	L1	ON	9.7
3.605	22.85	56.00	33.15	L1	ON	9.7
4.975	23.93	56.00	32.07	L1	ON	9.7

## Measurement Results: Average

Frequency	Average	Limit	Margin	Line	Filter	Corr.
(MHz)	(dBµV)	(dBµV)	(dB)			(dB)
0.525	31.85	46.00	14.15	L1	ON	9.6
0.775	18.80	46.00	27.20	L1	ON	9.6
1.195	17.19	46.00	28.81	L1	ON	9.7
2.250	16.76	46.00	29.24	L1	ON	9.7
3.110	16.92	46.00	29.08	L1	ON	9.7
4.755	18.03	46.00	27.97	L1	ON	9.7



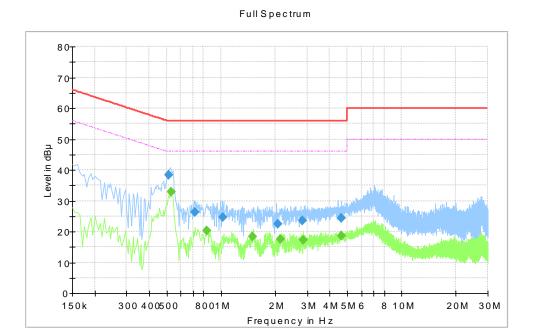


Fig.29 AC Power line Conducted Emission (Idle), LE 1M

#### Measurement Results: Quasi Peak

Frequency	Quasi Peak	Limit	Margin	Line	Filter	Corr.
(MHz)	(dBµV)	(dBµV)	(dB)			(dB)
0.515	38.34	56.00	17.66	L1	ON	9.6
0.715	26.33	56.00	29.68	N	ON	9.6
1.025	24.60	56.00	31.40	N	ON	9.7
2.070	22.43	56.00	33.57	L1	ON	9.7
2.815	23.45	56.00	32.55	L1	ON	9.7
4.655	24.27	56.00	31.73	L1	ON	9.7

## Measurement Results: Average

Frequency	Average	Limit	Margin	Line	Filter	Corr.
(MHz)	(dBµV)	(dBµV)	(dB)			(dB)
0.530	32.88	46.00	13.12	L1	ON	9.6
0.830	20.23	46.00	25.77	L1	ON	9.6
1.500	18.49	46.00	27.51	L1	ON	9.7
2.140	17.63	46.00	28.37	L1	ON	9.7
2.850	17.16	46.00	28.84	L1	ON	9.7
4.635	18.68	46.00	27.32	L1	ON	9.7

#### \*\*\*END OF REPORT\*\*\*



# **ANNEX- Spot Check of Output Power**

Company Name: TCL Communication Ltd.

Product Name: MOVETIME FAMILY WATCH

Model Name: MT40A

#### Differences between models

MT40A(SC9820E chip) is changed to MT40A(SL8521E chip), the two chips only have different screen printing information, other no difference, and the two chips themselves have no change, also does not affect RF performance.

#### **Spot Check of Different Mode**

Model	Mode	Frequency (MHz)	Conducted Output Power (dBm)	
original (SC9820E chip)	LE 1M	2440(CH19)	5.83	
	EDR(8DPSK) 2402(CH0)		6.36	
	802.11b	2412 (CH1)	14.35	
variant (SL8521E chip)	LE 1M	2440(CH19)	-1.62	
	EDR(8DPSK)	2402(CH0)	6.09	
	802.11b	2412 (CH1)	10.19	

Note: Spot check test data included for the variants based on worst-case results reported in the original.

From the above data, it can be concluded that the conducted output power of the variant is less than or near to the original. And the variant conducted test data can refer to the original report (*I19N01990*).

This condition applies to the reports *I21N04009*.