

TEST REPORT

Reference No..... : WTS17S0784720-2EX1
FCC ID : 2AB6F900
Applicant..... : ALTECZA S.A.S
Address..... : Calle 13 # 15- 61 Piso 3 oficina 10 bogota Colombia
Manufacturer : Shenzhen Leed Electronic Co.,LTD
Address..... : RM 509 Building A3 Navigation City Innovation Pioneer Park,
Hangcheng RD Xixiang Street, Baoan District, Shenzhen China
Product Name..... : GSM Mobile Phone
Model No..... : 900
Brand..... : MC MOBILE
Standards..... : FCC CFR47 Part 22 Subpart H: 2016
FCC CFR47 Part 24 Subpart E: 2016
Date of Receipt sample : Jul. 13, 2017
Date of Test : Oct. 22, 2017
Date of Issue..... : Oct. 30, 2017
Test Result..... : **Pass**
Remark : This project only increase the measurement above 18G spurious
Emissions for Antenna Terminal and Field Strength on the basis of
the original report WTS17S0784720-2E.

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

Prepared By:

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2 Laboratories Introduction

Waltek Services Test Group Ltd is a professional third-party testing and certification organization with multi-year product testing and certification experience, established strictly in accordance with ISO/IEC 17025 requirements, and accredited by CNAS (China National Accreditation Service for Conformity Assessment) AQSIQ, CMA and IECEE for CBTL. Meanwhile, Waltek has got recognition as registration and accreditation laboratory from EMSD (Electrical and Mechanical Services Department), and American Energy star, FCC(The Federal Communications Commission), CPSC(Consumer Product Safety Commission), CEC(California energy efficiency), IC(Industry Canada) and ELI(Efficient Lighting Initiative). It's the strategic partner and data recognition laboratory of international authoritative organizations, such as UL, Intertek(ETL-SEMKO), CSA, TÜV Rheinland, TÜV SÜD, etc.



Waltek Services Test Group Ltd. is one of the largest and the most comprehensive third party testing organizations in China, our headquarter located in Shenzhen and have branches in Foshan, Dongguan, Zhongshan, Suzhou, Ningbo and Hong Kong, Our test capability covered four large fields: safety test. ElectroMagnetic Compatibility(EMC), reliability and energy performance, Chemical test. As a professional, comprehensive, justice international test organization, we still keep the scientific and rigorous work attitude to help each client satisfy the international standards and assist their product enter into globe market smoothly.

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4 Revision History

Test report No.	Date of Receipt sample	Date of Test	Date of Issue	Purpose	Comment	Approved
WTS17S0784720-2EX1	Jul. 13, 2017	Oct. 22, 2017	Oct. 30, 2017	original	-	Valid

Remark: This project only increase the measurement above 18G spurious Emissions for Antenna Terminal and Field Strength on the basis of the original report WTS17S0784720-2E.

5 General Information

5.1 General Description of E.U.T.

Product Name:	GSM Mobile Phone
Model No.:	900
Model Description:	N/A
GSM Band(s):	GSM 850/900/1800/1900MHz
GPRS Class:	12
WCDMA Band(s):	N/A
LTE Band(s):	N/A
Wi-Fi Specification:	N/A
Bluetooth Version:	Bluetooth v2.1+EDR
GPS:	N/A
NFC:	N/A
Hardware Version:	X506_PCB_V1.2
Software Version:	V1
Highest frequency (Exclude Radio):	312MHz
Storage Location:	Internal Storage

Note: This EUT has two SIM card slots, and use same one RF module. We found that RF parameters are the same, when we insert the card 1 and card 2. So we usually performed the test under main card slot 1.

5.2 Details of E.U.T.

Operation Frequency:	GSM/GPRS 850: 824~849MHz PCS/GPRS 1900: 1850~1910MHz Bluetooth: 2402~2480MHz
Max. RF output power:	GSM 850: 32.34dBm PCS1900: 29.53dBm Bluetooth: -0.17dBm
Type of Modulation:	GSM,GPRS: GMSK Bluetooth: GFSK, Pi/4 DQPSK, 8DPSK
Antenna installation:	GSM: internal permanent antenna Bluetooth: internal permanent antenna
Antenna Gain:	GSM 850: -1.2dBi PCS1900: -1.4dBi Bluetooth: 0.8dBi

Technical Data: Battery DC 3.7V, 1050mAh
 DC 5V±0.25, 1.0A, charging from adapter
 (Adapter Input: 100-240V~50Hz/0.15A)

Adapter: Manufacture: Shenzhen Huateng Electronics Co.,Ltd.

Type of Emission: GSM850: 245KGXW, GPRS850: 245KGXW,
 PCS1900: 251KGXW, GPRS1900: 243KGXW

5.3 Subcontracted

Whether parts of tests for the product have been subcontracted to other labs:

☒ Yes ☐ No

If Yes, list the related test items and lab information:

Test Lab: Shenzhen BALUN Technology Co., Ltd.

Lab address: No. 17, Block B, FL1, Baisha Science and Technology Park Shahe Xi Road,
 Nanshan District, Shenzhen City, Guangdong Province, China, 518055

Test items: Conducted Spurious Emissions and Radiated Spurious Emissions for 18GHz-25GHz.

FCC Designation No.: CN1196

Test Firm Registration No.: 935607.

5.4 Test Mode

All test mode(s) and condition(s) mentioned were considered and evaluated respectively by performing full tests, the worst data were recorded and reported.

performing rain tests, the worst data were recorded and reported.

Support Band	Test Mode	Channel Frequency	Channel Number
PCS 1900	GSM/GPRS	1850.2 MHz	512
		1880.0 MHz	661
		1909.8 MHz	810
Remark: All mode(s) were tested and the worst data was recorded.			

5.5 Test Facility

Waltek Services(Shenzhen) Co., Ltd.

Accreditations for Conformity Assessment			
Country/Region	Acccreditation Body	Scope	Note
USA	A2LA (Certificate No.: 4243.01)	FCC ID\DOC\VOC	1
Canada		IC\VOC	2
Japan		MIC-TMIC-R	
Europe		EMCD\LVD\RED	
Taiwan		BSMI\NCC	

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Hong Kong	CNAS (Registration No.:L3110)	OFCA	
Australia		RCM	
South Korea		KC	
Thailand		NTC	
Singapore		IDA	
Note: FCC Desugnation No.:CN1201. Test Firm Registration No.:523476. IC Canada Registration No.:7760A.			

6 Test Summary

Test Items	Test Requirement	Result
Spurious Emissions at Antenna Terminal	2.1051 22.917 (a) 24.238 (a)	PASS
Field Strength of Spurious Radiation	2.1053 22.917 (a) 24.238 (a)	PASS

Note : Only increase the measurement above 18G spurious Emissions for Antenna Terminal and Field Strength on the basis of the original report WTS17S0784720-2E; test from Shenzhen BALUN Technology Co., Ltd.

7 Equipment Used during Test

7.1 Equipments List

3m Semi-anechoic Chamber for Radiation Emissions Test site (balun)						
1	Spectrum Analyzer	R&S	FSV-40	103118	2017-06-12	2018-06-11
2	Test Antenna-Horn(18-40GHz)	A-INFO	LB-180400KF	J211060273	2017-01-06	2018-01-05
3	Amplifier	COM-MV	ZLNA-18-40G-021	1608001	2017-02-17	2018-02-16
4	Cable	Top	18-40GHz	-	2017-02-17	2018-02-16
5	Wireless Communications Test Set	R&S	CMW500	142028	2017-06-28	2018-06-11

7.2 Measurement Uncertainty

Parameter	Uncertainty
Conducted Spurious emissions	± 2.2 dB
Radiated Spurious Emissions	± 7.5 dB
Confidence interval: 95%. Confidence factor:k=2	

8 SPURIOUS EMISSIONS AT ANTENNA TERMINALS

Test Requirement:	FCC Part 2.1051, 22.917(a), 24.238(a)
Test Method:	TIA/EIA-603-D:2010 KDB971168 D01 v02r02
Test Mode:	TX transmitting

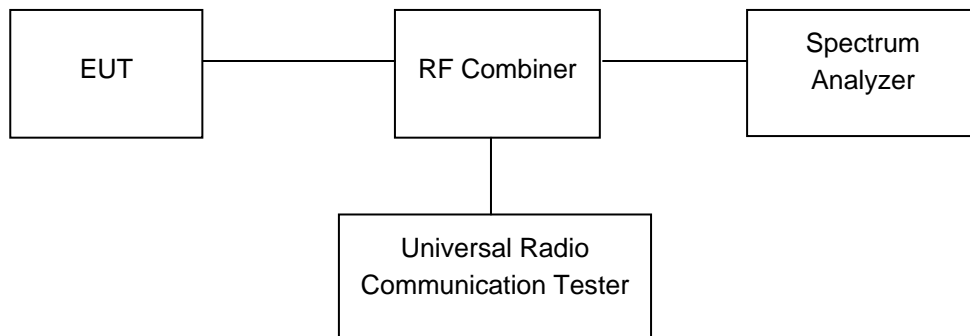
8.1 EUT Operation

Operating Environment :

Temperature:	23.4 °C
Humidity:	52.3% RH
Atmospheric Pressure:	101.4kPa

8.2 Test Procedure

The RF output of the transceiver was connected to a spectrum analyzer and simulator through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 1MHz. Sufficient scans were taken to show any out of band emissions up to 10th harmonics.



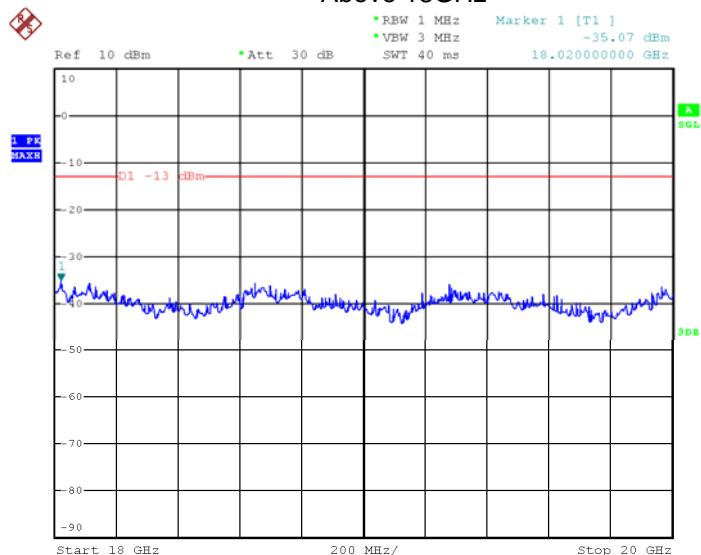
8.3 Test Result

Remark: All test data were reported and only the worst case (low channel mode) test graphs were showed in test report.

Cellular Band (Part 24E)

PCS 1900 - channel 512

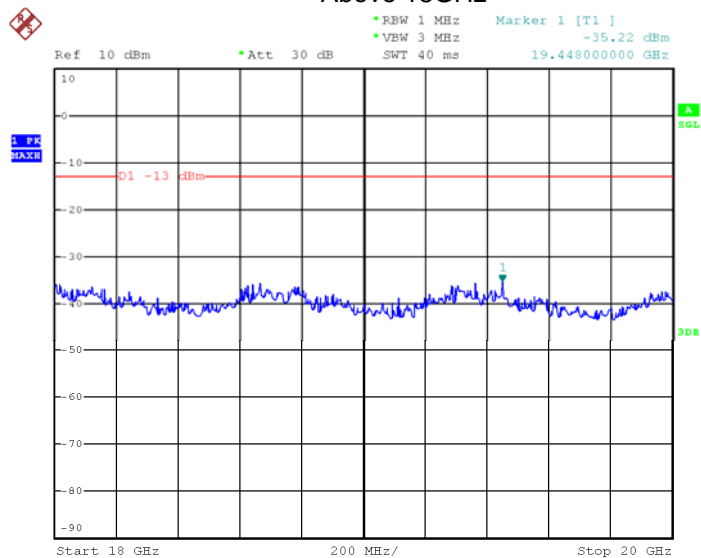
Above 18GHz



Cellular Band (Part 24E)

GPRS 1900 - channel 512

Above 18GHz



9 **SPURIOUS RADIATED EMISSIONS**

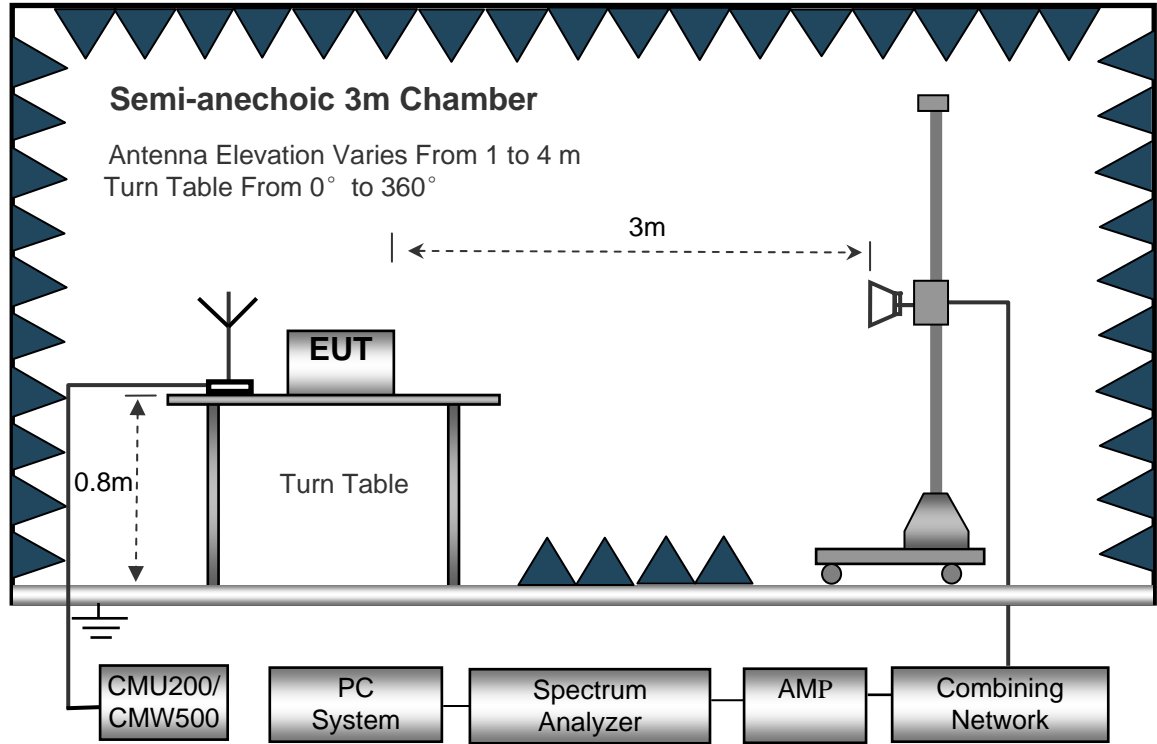
Test Requirement: FCC Part 2.1053, 22.917, 24.238
Test Method: TIA/EIA-603-D:2010
 KDB971168 D01 v02r02
Test Mode: TX transmitting

9.1 **EUT Operation**

Operating Environment :
Temperature: 23.5 °C
Humidity: 52.2 % RH
Atmospheric Pressure: 101.5kPa

9.2 **Test Setup**

The test setup for emission measurement above 18 GHz.



9.3 **Spectrum Analyzer Setup**

Above 1GHz
Sweep Speed Auto
Detector PK
Resolution Bandwidth.....1MHz
Video Bandwidth.....3MHz
Detector Ave.

Resolution Bandwidth..... 1MHz

Video Bandwidth..... 10Hz

9.4 Test Procedure

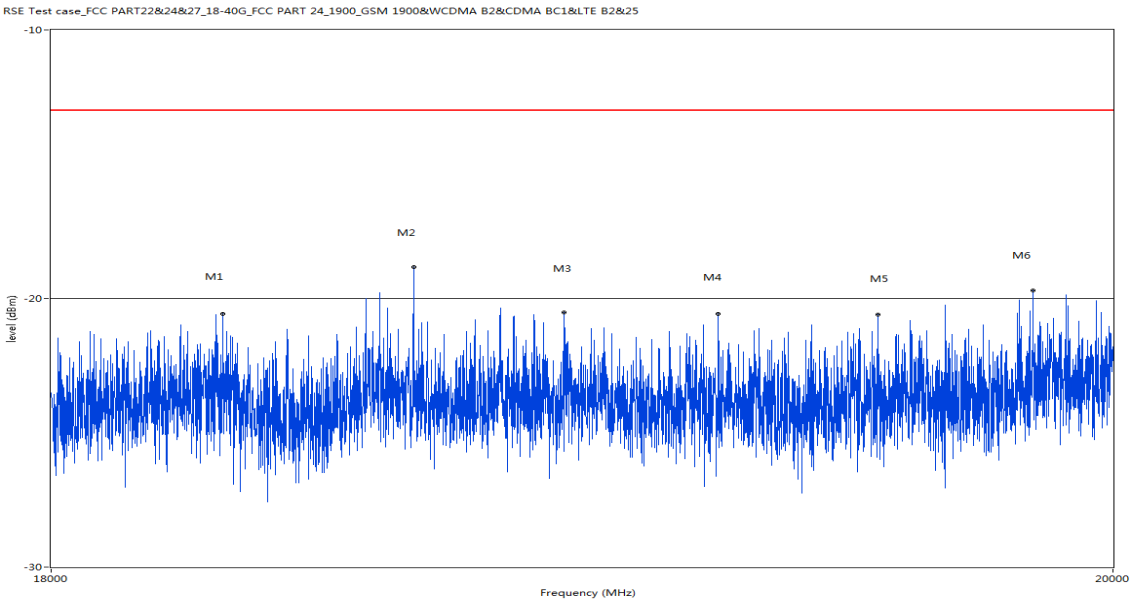
1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions. The spectrum was investigated from 30MHz up to the tenth harmonic of the highest fundamental frequency.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. The radiation measurements are tested under 3-axes(X,Y,Z) position(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand), After pre-test, It was found that the worse radiation emission was get at the Z position. So the data shown was the Z position only.
7. 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.
$$\text{Spurious emissions in dB} = 10 \lg (\text{TXpwr in Watts}/0.001) - \text{the absolute level}$$
$$\text{Spurious attenuation limit in dB} = 43 + 10 \lg (\text{power out in Watts})$$
8. Repeat above procedures until the measurements for all frequencies are completed.

9.5 Summary of Test Results

Remark: Test performed from 18GHz to 10th harmonics with low/middle/high channels, only the worst data were recorded.

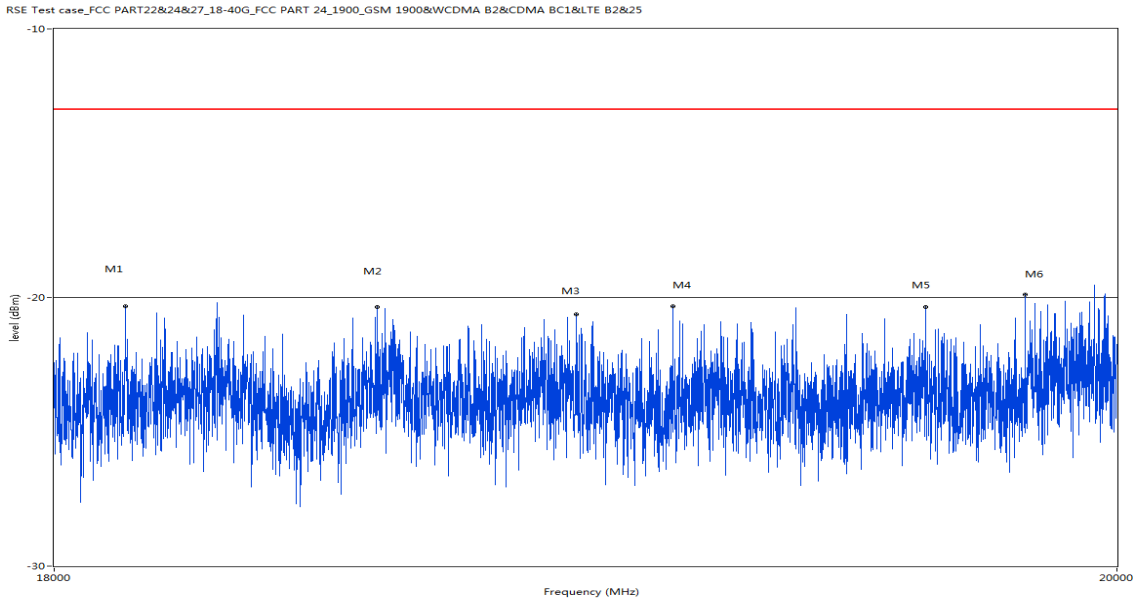
Vertical:

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Margin (dB)	Table (o)	ANT	EUT	Verdict
18308.999	-20.56	49.01	-13.0	7.56	5.00	Vertical	Vertical	Pass
18659.000	-18.83	49.11	-13.0	5.83	8.00	Vertical	Vertical	Pass
18939.001	-20.52	49.18	-13.0	7.52	9.00	Vertical	Vertical	Pass
19232.000	-20.58	49.26	-13.0	7.58	2.00	Vertical	Vertical	Pass
19538.500	-20.59	49.34	-13.0	7.59	7.00	Vertical	Vertical	Pass
19842.001	-19.70	49.42	-13.0	6.70	8.00	Vertical	Vertical	Pass

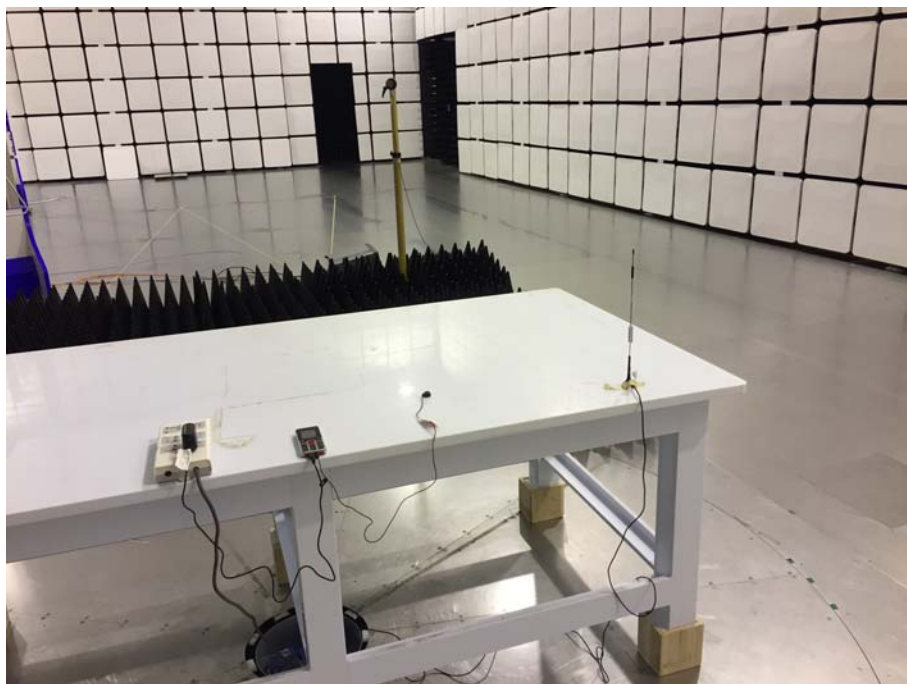


Horizontal

Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Margin (dB)	Table (o)	ANT	EUT	Verdict
18127.000	-20.32	48.96	-13.0	7.32	6.00	Horizontal	Horizontal	Pass
18586.499	-20.35	49.09	-13.0	7.35	5.00	Horizontal	Horizontal	Pass
18955.500	-20.63	49.18	-13.0	7.63	8.00	Horizontal	Horizontal	Pass
19139.000	-20.34	49.23	-13.0	7.34	9.00	Horizontal	Horizontal	Pass
19625.001	-20.36	49.36	-13.0	7.36	10.0	Horizontal	Horizontal	Pass
19818.500	-19.88	49.42	-13.0	6.88	3.00	Horizontal	Horizontal	Pass



10 Photographs of test setup and EUT.



===== End of Report =====