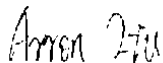


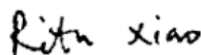
TEST REPORT

Product Name: Telematics Unit
FCC ID: S8UT-229LA
Trademark: N/A
Model Number: T-229LA-L, T-229LA
Prepared For: Sinocastel Co., Ltd.
Address: 501A, Building 11, Shenzhen Software Park (Phase 2), No. 1, Kejizhong Middle Road, High-tech Middle District, Maling Community, Yuehai Street, Nanshan District, Shenzhen
Manufacturer: Sinocastel Co., Ltd.
Address: 501A, Building 11, Shenzhen Software Park (Phase 2), No. 1, Kejizhong Middle Road, High-tech Middle District, Maling Community, Yuehai Street, Nanshan District, Shenzhen
Prepared By: Shenzhen CTB Testing Technology Co., Ltd.
Address: Floor 1&2, Building A, No. 26 of Xinhe Road, Xinqiao Street, Baoan District, Shenzhen China
Sample Received Date: Sep. 10, 2020
Sample tested Date: Sep. 10, 2020 to Sep. 24 2020
Issue Date: Sep. 24 2020
Report No.: CTB200929025RFX
Test Standards: FCC Part 22, 24E, 27
Test Results: PASS
Remark: This is LTE radio test report.

Compiled by:

Arron Liu

Reviewed by:

Rita Xiao

Approved by:

Sherwin Qian/ Director

The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen CTB Testing Technology Co., Ltd. this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client.

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(Note: N/A means not applicable)

1. VERSION

Report No.	Issue Date	Description	Approved
CTB200929025RFX	Sep. 24, 2020	Original	Valid

2. TEST SUMMARY

The Product has been tested according to the following specifications:

FCC Rules	Description of Test Item	Result
§1.1307, §2.1091, §2.1093	RF Exposure	Compliant
§22.913 (a), §24.232 (c), §27.50(d)	RF Output Power	Compliant
§24.51, §27.50	Peak-to-average Ratio(PAR) of Transmitter	Compliant
§22.917 (b), §24.238 (b), §27.53	Emission Bandwidth	Compliant
§22.917 (a), §24.238 (a), §27.53(h)	Spurious Emissions at Antenna Terminal	Compliant
§22.917 (a), §24.238 (a), §27.53(h)	Spurious Radiation Emissions	Compliant
§22.917 (a), §24.238 (a), §27.53(h)	Out of Band Emissions	Compliant
§22.355, §24.235, §27.54	Frequency Stability	Compliant

3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

Item	Uncertainty
Occupancy bandwidth	54.3kHz
Conducted output power Above 1G	0.9dB
Conducted output power below 1G	0.9dB
Power Spectral Density , Conduction	0.9dB
Conduction spurious emissions	2.0dB
Out of band emission	2.0dB
3m chamber Radiated spurious emission(30MHz-1GHz)	4.6dB
3m chamber Radiated spurious emission(1GHz-18GHz)	5.1dB
3m chamber Radiated spurious emission(18GHz-40GHz)	3.4dB
Receiver Reference Sensitivity level	1.9dB
humidity uncertainty	5.5%
Temperature uncertainty	0.63°C
frequency	1×10^{-7}

4. PRODUCT INFORMATION AND TEST SETUP

4.1 Product Information

Model(s):	T-229LA-L,T-229LA
Model Description:	N/A
Hardware Version:	V2.0
Software Version:	V3.1.2
Operation Frequency:	FDD-LTE BAND 2:1850-1910MHz FDD-LTE BAND 4:1710-1755MHz FDD-LTE BAND 12: 699-716MHz
Max. conducted output power:	FDD-LTE BAND 2: 23.24dBm FDD-LTE BAND 4: 23.24dBm FDD-LTE BAND 12: 23.31dBm
Type of Modulation:	QPSK, 16QAM
Antenna installation:	Integral antenna
Antenna Gain:	2dBi
Ratings:	DC12V from battery

4.2 Test Setup Configuration

See test photographs attached in EUT TEST SETUP PHOTOGRAPHS for the actual connections between Product and support equipment.

4.3 Support Equipment

No.	Device Type	Brand	Model	Series No.	Note

Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.4 Test Mode

Test Mode List		
Test Mode	Description	Remark
TM1	FDD-LTE BAND 2	Low, Middle, High Channels
TM2	FDD-LTE BAND 4	Low, Middle, High Channels
TM3	FDD-LTE BAND 12	Low, Middle, High Channels

4.5 Test Environment

Humidity(%):	55
Atmospheric Pressure(kPa):	101.1
Normal Voltage(DC):	3.7V
Normal Temperature(°C)	25
Low Temperature(°C)	0
High Temperature(°C)	40

5. TEST FACILITY AND TEST INSTRUMENT USED

5.1 Test Facility

All measurement facilities used to collect the measurement data are located at Floor 1&2, Building A, No. 26 of Xinh Road, Xinqiao Street, Baoan District, Shenzhen China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

5.2 Test Instrument Used

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum Analyzer	Agilent	N9020A	MY52090073	Oct. 17, 2019	Oct. 16, 2020
2	Power Sensor	Agilent	U2021XA	MY56120032	Nov. 02, 2019	Nov. 01, 2020
3	Power Sensor	Agilent	U2021XA	MY56120034	Nov. 02, 2019	Nov. 01, 2020
4	Communication test set	R&S	CMW500	118735	Nov. 02, 2019	Nov. 01, 2020
5	Spectrum Analyzer	R&S	FSP40	100550	Nov. 02, 2019	Nov. 01, 2020
6	Signal Generator	Agilent	N5181A	MY49060920	Nov. 03, 2019	Nov. 02, 2020
7	Signal Generator	Agilent	N5182A	MY47420195	Nov. 03, 2019	Nov. 02, 2020
8	Communication test set	R&S	CMU200	119978	Nov. 02, 2019	Nov. 01, 2020
9	band rejection filter	Shenxiang	MSF2400-24 83.5MS-1154	20181015001	Nov. 02, 2019	Nov. 01, 2020
10	band rejection filter	Shenxiang	MSF5150-58 50MS-1155	20181015001	Nov. 02, 2019	Nov. 01, 2020
11	band rejection filter	Xingbo	XBLBQ-DZA 120	190821-1-1	Nov. 02, 2019	Nov. 01, 2020
12	BT&WI-FI Automatic test software	Microwave	MTS8310	Ver. 2.0.0.0	\	\
13	Rohde & Schwarz SFU Broadcast Test System	R&S	SFU	101017	Nov. 02, 2019	Nov. 01, 2020
14	Temperature humidity chamber	Hongjing	TH-80CH	DG-15174	Nov. 02, 2019	Nov. 01, 2020
15	234G Automatic test software	Microwave	MTS8200	Ver. 2.0.0.0	\	\
16	966 chamber	C.R.T.	966 Room	966	Nov. 10, 2019	Nov. 09, 2020
17	Receiver	R&S	ESPI	100362	Nov. 02, 2019	Nov. 01, 2020

18	Amplifier	HP	8447E	2945A02747	Nov. 03, 2019	Nov. 02, 2020
19	Amplifier	Agilent	8449B	3008A01838	Nov. 03, 2019	Nov. 02, 2020
20	TRILOG Broadband Antenna	Schwarzbeck	VULB 9163	869	Nov. 02, 2019	Nov. 01, 2020
21	Horn Antenna	Schwarzbeck	BBHA9120D	1911	Nov. 02, 2019	Nov. 01, 2020
22	Software	Fala	EZ-EMC	FA-03A2 RE	\	\
23	3-Loop Antenna	Daze	ZN30401	17014	Nov. 02, 2019	Nov. 01, 2020
24	loop antenna	ZHINAN	ZN30900A	/	Nov. 02, 2019	Nov. 01, 2020
25	Horn antenna	A/H/System	SAS-574	588	Nov. 02, 2019	Nov. 01, 2020
26	Amplifier	AEROFLEX	/	S/N/ 097	Nov. 02, 2019	Nov. 01, 2020

6. RF EXPOSURE

6.1 Standard Applicable

According to §1.1307 and §2.1091, §2.1093, the portable transmitter must comply the RF exposure requirements.

6.2 Test Result

This product complied with the requirement of the RF exposure, please see the RF Exposure report.

7. RF OUTPUT POWER

7.1 Standard Applicable

According to §22.913(a)(2), the ERP of mobile and portable stations transmitters and auxiliary test transmitters must not exceed 7 Watts.

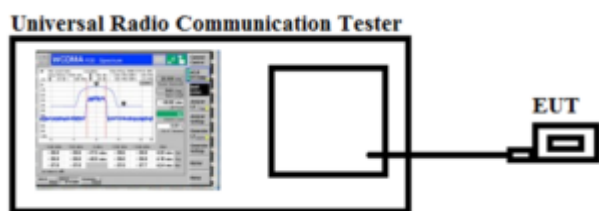
According to §24.232(c), mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

According to §27.50(d)(4), fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

According to §27.50(c)(10), portable stations (hand-held devices) in the 698-746 MHz band are limited to 3 watts ERP.

7.2 Test Procedure

Conducted output power test method:



Radiated power test method:

1. The setup of EUT is according with per ANSI/TIA Standard 603E and ANSI C63.26 measurement procedure.
2. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.
3. The frequency range up to tenth harmonic of the fundamental frequency was investigated.
4. 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.

7.3 Summary of Test Results/Plots

Max. Radiated Power:
FDD-LTE Band 2

Channel Bandwidth: 1.4 MHz					
Modulation	Channel	Antenna Polar	E.i.r.p [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	21.55	<33.00	PASS
		H	21.46		
	MCH	V	21.16		PASS
		H	21.04		
	HCH	V	21.38		PASS
		H	21.33		
16QAM	LCH	V	20.34	<33.00	PASS
		H	20.20		
	MCH	V	20.19		PASS
		H	19.17		
	HCH	V	19.95		PASS
		H	19.94		
Channel Bandwidth: 3 MHz					
Modulation	Channel	Antenna Polar	E.i.r.p [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	21.30	<33.00	PASS
		H	21.24		
	MCH	V	21.07		PASS
		H	20.31		
	HCH	V	21.31		PASS
		H	21.32		
16QAM	LCH	V	20.38	<33.00	PASS
		H	21.97		
	MCH	V	19.35		PASS
		H	20.12		
	HCH	V	19.92		PASS
		H	19.94		
Channel Bandwidth: 5 MHz					
Modulation	Channel	Antenna Polar	E.i.r.p [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	21.35	<33.00	PASS
		H	21.31		

	MCH	V	21.32		PASS
		H	21.16		
	HCH	V	21.18		PASS
		H	20.16		
16QAM	LCH	V	20.40	<33.00	PASS
		H	19.30		
	MCH	V	20.20		PASS
		H	20.14		
	HCH	V	20.26		PASS
		H	20.24		
Channel Bandwidth: 10 MHz					
Modulation	Channel	Antenna Polar	E.i.r.p [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	20.28	<33.00	PASS
		H	20.22		
	MCH	V	20.20		PASS
		H	21.10		
	HCH	V	21.23		PASS
		H	21.20		
16QAM	LCH	V	20.41	<33.00	PASS
		H	20.23		
	MCH	V	20.22		PASS
		H	20.21		
	HCH	V	19.99		PASS
		H	19.94		
Channel Bandwidth: 15 MHz					
Modulation	Channel	Antenna Polar	E.i.r.p [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	13.86	<34.77	PASS
		H	16.20		
	MCH	V	15.25		PASS
		H	14.72		
	HCH	V	14.22		PASS
		H	6.36		
16QAM	LCH	V	13.04	<34.77	PASS
		H	15.35		
	MCH	V	15.07		PASS
		H	15.17		

	HCH	V	6.19		PASS
		H	12.49		
Channel Bandwidth: 20 MHz					
Modulation	Channel	Antenna Polar	E.i.r.p [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	15.93	<34.77	PASS
		H	16.06		
	MCH	V	15.68		PASS
		H	15.57		
	HCH	V	13.57		PASS
		H	13.06		
16QAM	LCH	V	15.27	<34.77	PASS
		H	15.42		
	MCH	V	14.75		PASS
		H	15.00		
	HCH	V	13.44		PASS
		H	7.89		

FDD-LTE Band 4

Channel Bandwidth: 1.4 MHz					
Modulation	Channel	Antenna Polar	E.i.r.p [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	21.32	<33.00	PASS
		H	21.66		
	MCH	V	21.01		PASS
		H	21.09		
	HCH	V	21.22		PASS
		H	21.13		
16QAM	LCH	V	20.25	<33.00	PASS
		H	20.14		
	MCH	V	21.02		PASS
		H	20.23		
	HCH	V	20.33		PASS
		H	20.78		
Channel Bandwidth: 3 MHz					
Modulation	Channel	Antenna Polar	E.i.r.p [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	21.54	<33.00	PASS
		H	21.86		

	MCH	V	21.13		PASS
		H	20.21		
	HCH	V	21.17		PASS
		H	21.19		
16QAM	LCH	V	20.16	<33.00	PASS
		H	21.35		
	MCH	V	19.23		PASS
		H	20.35		
	HCH	V	19.75		PASS
		H	20.66		
Channel Bandwidth: 5 MHz					
Modulation	Channel	Antenna Polar	E.i.r.p [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	20.56	<33.00	PASS
		H	20.35		
	MCH	V	20.33		PASS
		H	20.37		
	HCH	V	20.69		PASS
		H	20.01		
16QAM	LCH	V	20.68	<33.00	PASS
		H	20.57		
	MCH	V	20.16		PASS
		H	20.33		
	HCH	V	20.95		PASS
		H	20.56		
Channel Bandwidth: 10 MHz					
Modulation	Channel	Antenna Polar	E.i.r.p [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	21.03	<33.00	PASS
		H	20.57		
	MCH	V	20.62		PASS
		H	20.43		
	HCH	V	20.78		PASS
		H	20.62		
16QAM	LCH	V	20.24	<33.00	PASS
		H	20.65		
	MCH	V	20.37		PASS
		H	20.34		

	HCH	V	20.62		PASS
		H	20.02		
Channel Bandwidth: 15 MHz					
Modulation	Channel	Antenna Polar	E.i.r.p [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	21.03	<33.00	PASS
		H	21.23		
	MCH	V	20.24		PASS
		H	20.35		
	HCH	V	20.45		PASS
		H	20.67		
16QAM	LCH	V	19.99	<33.00	PASS
		H	20.03		
	MCH	V	20.56		PASS
		H	20.35		
	HCH	V	20.45		PASS
		H	20.33		
Channel Bandwidth: 20 MHz					
Modulation	Channel	Antenna Polar	E.i.r.p [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	20.76	<33.00	PASS
		H	21.12		
	MCH	V	20.77		PASS
		H	20.36		
	HCH	V	20.25		PASS
		H	20.47		
16QAM	LCH	V	19.89	<33.00	PASS
		H	20.25		
	MCH	V	20.35		PASS
		H	20.24		
	HCH	V	20.33		PASS
		H	20.58		

FDD-LTE Band 12

Channel Bandwidth: 1.4 MHz					
Modulation	Channel	Antenna Polar	E.i.r.p [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	20.65	<33.00	PASS

	MCH	H	20.89		PASS
		V	21.03		
		H	21.45		
	HCH	V	21.32		PASS
		H	21.25		
16QAM	LCH	V	20.68	<33.00	PASS
		H	20.64		
	MCH	V	20.56		PASS
		H	19.79		
	HCH	V	20.62		PASS
		H	20.03		
Channel Bandwidth: 3 MHz					
Modulation	Channel	Antenna Polar	E.i.r.p [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	21.63	<33.00	PASS
		H	21.55		
	MCH	V	21.42		PASS
		H	20.37		
	HCH	V	21.13		PASS
		H	21.22		
16QAM	LCH	V	20.31	<33.00	PASS
		H	20.54		
	MCH	V	20.47		PASS
		H	20.53		
	HCH	V	20.32		PASS
		H	20.68		
Channel Bandwidth: 5 MHz					
Modulation	Channel	Antenna Polar	E.i.r.p [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	20.12	<38.45	PASS
		H	20.16		
	MCH	V	20.27		PASS
		H	19.63		
	HCH	V	19.47		PASS
		H	19.65		
16QAM	LCH	V	19.52	<38.45	PASS
		H	19.39		
	MCH	V	19.57		PASS

		H	19.99		PASS
	HCH	V	19.98		
		H	20.34		
Channel Bandwidth: 10 MHz					
Modulation	Channel	Antenna Polar	E.i.r.p [dBm]	Limit (dBm)	Verdict
QPSK	LCH	V	20.75	<38.45	PASS
		H	20.65		
	MCH	V	20.72		PASS
		H	20.33		
	HCH	V	19.96		PASS
		H	20.53		
16QAM	LCH	V	20.15	<38.45	PASS
		H	20.26		
	MCH	V	20.15		PASS
		H	20.32		
	HCH	V	20.15		PASS
		H	20.37		

Max. Conducted Output Power

Please refer to Please refer to report of FCC ID :XMR201605EC25A

Test result: Pass

8. PEAK-TO-AVERAGE RATIO (PAR) OF TRANSMITTER

8.1 Standard Applicable

According to §24.232(d), power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (e) of this section. In both instances, equipment employed must be authorized in accordance with the provisions of §24.51, in measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

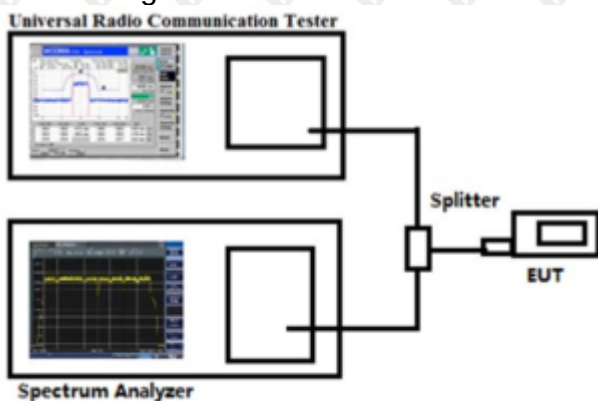
According to §27.50(B), the peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB. The PAPR measurements should be made using either an instrument with complementary cumulative distribution function (CCDF) capabilities to determine that PAPR will not exceed 13 dB for more than 0.1 percent of the time or other Commission approved procedure. The measurement must be performed using a signal corresponding to the highest PAPR expected during periods of continuous transmission.

8.2 Test Procedure

According with KDB 971168

1. The signal analyzer's CCDF measurement profile is enabled
2. Frequency = carrier center frequency
3. Measurement BW > Emission bandwidth of signal
4. The signal analyzer was set to collect one million samples to generate the CCDF curve
5. The measurement interval was set depending on the type of signal analyzed. For continuous signals (>98% duty cycle), the measurement interval was set to 1ms. For burst transmissions, the spectrum analyzer is set to use an internal " RF Burst" trigger that is synced with an incoming pulse and the measurement interval is set to less than the duration of the " on time" of one burst to ensure that energy is only captured during a time in which the transmitter is operating at maximum power

Test Configuration for the emission bandwidth testing:



8.3 Summary of Test Results

Please refer to report of FCC ID :XMR201605EC25A

Test result: Pass

9. EMISSION BANDWIDTH

9.1 Standard Applicable

According to §22.917(b), the emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

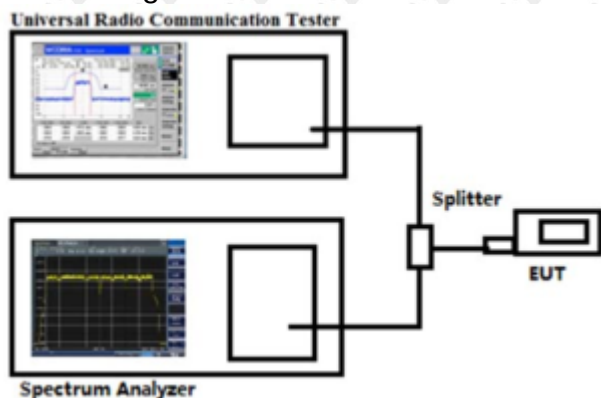
According to §24.238(b), the emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

According to §27.53, the emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

9.2 Test Procedure

According to § 22.917(b), the emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

Test Configuration for the emission bandwidth testing:



9.3 Summary of Test Results/Plots

Please refer to report of FCC ID :XMR201605EC25A
Test result: Pass

10. OUT OF BAND EMISSIONS AT ANTENNA TERMINAL

10.1 Standard Applicable

According to §22.917(a), the power of any emissions 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.

According to §24.238(a), 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.

According to §27.53 (c) For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

- (1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;
- (2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;
- (3) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $76 + 10 \log(P)$ dB in a 6.25 kHz band segment, for base and fixed stations;
- (4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $65 + 10 \log(P)$ dB in a 6.25 kHz band segment, for mobile and portable stations;
- (5) Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;
- (6) Compliance with the provisions of paragraphs (c)(3) and (c)(4) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

According to §27.53 (f) For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

According to §27.53(h), the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB.

According to §27.53(g), for operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be

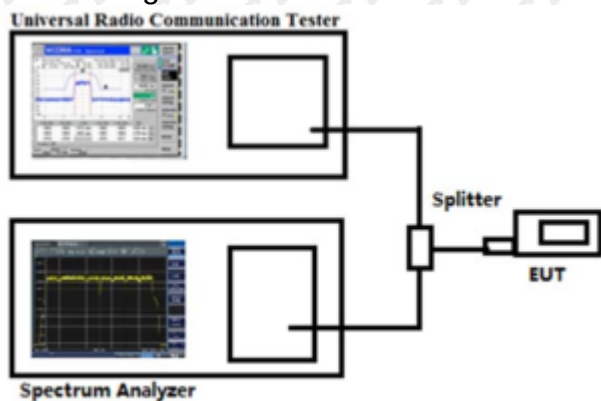
attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P)$ dB.

According to §27.53(m)(4), for mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz.

10.2 Test Procedure

The RF output terminal of the transmitter was connected to the input of the spectrum analyzer via a suitable attenuation. The RBW of the spectrum analyzer was set to 100kHz and 1MHz for the scan frequency from 30MHz to 1GHz and the scan frequency from 1GHz to up to 10 th harmonic.

Test Configuration for the out of band emissions testing:



10.3 Summary of Test Results/Plots

Please refer to report of FCC ID :XMR201605EC25A

Test result: Pass

11. SPURIOUS RADIATED EMISSIONS

11.1 Standard Applicable

According to § 22.917(a), the power of any emissions 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.

According to § 24.238(a), 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.

According to § 27.53 (c) For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

(1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;

(2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;

(3) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $76 + 10 \log(P)$ dB in a 6.25 kHz band segment, for base and fixed stations;

(4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $65 + 10 \log(P)$ dB in a 6.25 kHz band segment, for mobile and portable stations;

(5) Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

(6) Compliance with the provisions of paragraphs (c)(3) and (c)(4) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

According to § 27.53 (f) For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

According to § 27.53(h), the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB.

According to § 27.53(g) the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P)$ dB.

11.2 Test Procedure

1. The setup of EUT is according with per ANSI/TIA-603-E and ANSI C63.4-2014 measurement procedure.
 2. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.
 3. The frequency range up to tenth harmonic of the fundamental frequency was investigated.
 4. 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.
- Spurious attenuation limit in dB $= 43 + 10 \log_{10} (\text{power out in Watts})$

11.3 Summary of Test Results/Plots

Note: 1. this EUT was tested in 3 orthogonal positions and the worst case position data was reported.

2. All test modes (different bandwidth and different modulation) are performed, but only the worst case is recorded in this report.

Test Data:

QPSK

Band 2 18607 channel/BW1.4(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1274.721	152	40	-60.68	-13.00	-47.68	Pass	H
1633.892	150	54	-51.97	-13.00	-38.97	Pass	H
3859.037	152	209	-50.32	-13.00	-37.32	Pass	H
5762.527	153	100	-47.32	-13.00	-34.32	Pass	H
6501.260	152	276	-46.04	-13.00	-33.04	Pass	H
7966.120	152	100	-46.46	-13.00	-33.46	Pass	H
1218.322	148	159	-58.06	-13.00	-45.06	Pass	V
1349.515	151	66	-59.48	-13.00	-46.48	Pass	V
3491.050	151	42	-54.52	-13.00	-41.52	Pass	V
3824.302	151	145	-52.47	-13.00	-39.47	Pass	V
5831.171	149	57	-48.67	-13.00	-35.67	Pass	V
6554.944	153	304	-48.22	-13.00	-35.22	Pass	V

Band 2 18900 channel/BW1.4(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1285.754	148	28	-58.44	-13.00	-45.44	Pass	H
1592.179	153	40	-52.71	-13.00	-39.71	Pass	H
3863.718	150	91	-50.18	-13.00	-37.18	Pass	H
5772.008	150	24	-47.41	-13.00	-34.41	Pass	H
6508.712	150	64	-46.74	-13.00	-33.74	Pass	H
7987.524	151	158	-48.53	-13.00	-35.53	Pass	H
1187.078	149	257	-58.30	-13.00	-45.30	Pass	V
1444.228	152	217	-58.50	-13.00	-45.50	Pass	V
3491.005	152	166	-52.75	-13.00	-39.75	Pass	V
3828.463	150	321	-50.01	-13.00	-37.01	Pass	V
5819.595	149	256	-48.91	-13.00	-35.91	Pass	V
6517.992	152	119	-49.78	-13.00	-36.78	Pass	V

Band 2 19193 channel/BW1.4(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1255.758	152	82	-59.10	-13.00	-46.10	Pass	H
1592.939	152	133	-53.93	-13.00	-40.93	Pass	H
3805.815	148	238	-52.28	-13.00	-39.28	Pass	H
5771.354	151	218	-45.76	-13.00	-32.76	Pass	H
6460.374	152	212	-46.76	-13.00	-33.76	Pass	H
7969.397	152	135	-46.17	-13.00	-33.17	Pass	H
1237.367	148	313	-58.65	-13.00	-45.65	Pass	V
1425.805	149	181	-60.49	-13.00	-47.49	Pass	V
3413.608	152	199	-54.46	-13.00	-41.46	Pass	V
3838.075	153	106	-50.97	-13.00	-37.97	Pass	V
5790.637	150	252	-47.67	-13.00	-34.67	Pass	V
6463.444	150	69	-47.33	-13.00	-34.33	Pass	V

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Band 2 18607 channel/BW1.4(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1274.414	150	316	-60.26	-13.00	-47.26	Pass	H
1586.496	150	311	-52.73	-13.00	-39.73	Pass	H
3785.222	150	261	-49.40	-13.00	-36.40	Pass	H
5785.566	152	349	-48.24	-13.00	-35.24	Pass	H
6508.923	149	55	-46.06	-13.00	-33.06	Pass	H
8037.229	153	230	-49.02	-13.00	-36.02	Pass	H
1204.199	150	170	-60.00	-13.00	-47.00	Pass	V
1393.910	149	104	-59.53	-13.00	-46.53	Pass	V
3453.009	153	134	-53.28	-13.00	-40.28	Pass	V
3832.912	150	325	-51.50	-13.00	-38.50	Pass	V
5766.325	148	319	-46.38	-13.00	-33.38	Pass	V
6476.194	150	13	-48.25	-13.00	-35.25	Pass	V

Band 2 18900 channel/BW1.4(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1280.766	149	13	-59.67	-13.00	-46.67	Pass	H
1623.596	148	27	-51.65	-13.00	-38.65	Pass	H
3825.338	151	290	-50.94	-13.00	-37.94	Pass	H
5852.068	149	241	-47.10	-13.00	-34.10	Pass	H
6500.431	149	72	-48.31	-13.00	-35.31	Pass	H
7960.070	151	192	-48.74	-13.00	-35.74	Pass	H
1235.840	152	310	-57.98	-13.00	-44.98	Pass	V
1363.961	150	155	-59.62	-13.00	-46.62	Pass	V
3443.031	153	298	-51.90	-13.00	-38.90	Pass	V
3878.058	150	279	-50.73	-13.00	-37.73	Pass	V
5775.252	150	80	-46.61	-13.00	-33.61	Pass	V
6526.687	153	148	-50.28	-13.00	-37.28	Pass	V

Band 2 19193 channel/BW1.4(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1199.624	148	173	-59.70	-13.00	-46.70	Pass	H
1595.673	150	184	-52.86	-13.00	-39.86	Pass	H
3774.401	150	26	-49.98	-13.00	-36.98	Pass	H
5776.211	151	176	-47.82	-13.00	-34.82	Pass	H
6510.263	149	8	-47.82	-13.00	-34.82	Pass	H
7955.124	149	77	-49.00	-13.00	-36.00	Pass	H
1169.030	151	170	-59.48	-13.00	-46.48	Pass	V
1446.031	153	21	-60.27	-13.00	-47.27	Pass	V
3442.499	152	317	-53.39	-13.00	-40.39	Pass	V
3908.846	151	58	-51.82	-13.00	-38.82	Pass	V
5819.102	153	111	-48.39	-13.00	-35.39	Pass	V
6548.387	150	264	-48.30	-13.00	-35.30	Pass	V

Note:

- 1) Scan from 9kHz to 25GHz, the disturbance above 13GHz and below 1GHz are attenuated more than 20 dB below the applicable limit and not required to be reported, the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.
- 2) Tested with all kind of bandwidth, RB Size and RB Offset, Found the 1.4MHz with full RB were the worst case; and then Only the worst case is recorded in the report.

QPSK

Band 4 19957 channel/BW 1.4(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1242.825	150	142	-60.51	-13.00	-47.51	Pass	H
1664.510	148	100	-51.99	-13.00	-38.99	Pass	H
3793.489	151	335	-50.29	-13.00	-37.29	Pass	H
5829.984	151	23	-47.94	-13.00	-34.94	Pass	H
6487.837	149	42	-48.03	-13.00	-35.03	Pass	H
7987.461	152	176	-46.82	-13.00	-33.82	Pass	H
1213.162	150	308	-58.47	-13.00	-45.47	Pass	V
1372.232	152	244	-58.36	-13.00	-45.36	Pass	V
3507.781	152	8	-54.25	-13.00	-41.25	Pass	V
3837.380	152	297	-50.96	-13.00	-37.96	Pass	V
5737.007	150	275	-46.50	-13.00	-33.50	Pass	V
6540.479	151	4	-49.01	-13.00	-36.01	Pass	V

Band 4 20175 channel/BW 1.4(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1260.747	150	158	-60.77	-13.00	-47.77	Pass	H
1579.946	153	320	-52.95	-40.00	-12.95	Pass	H
3805.355	152	130	-49.95	-13.00	-36.95	Pass	H
5847.537	148	59	-46.78	-13.00	-33.78	Pass	H
6495.263	153	158	-47.65	-13.00	-34.65	Pass	H
8019.626	150	234	-47.15	-13.00	-34.15	Pass	H
1214.194	148	30	-57.80	-13.00	-44.80	Pass	V
1372.369	152	47	-58.56	-13.00	-45.56	Pass	V
3505.945	152	309	-52.53	-13.00	-39.53	Pass	V
3871.903	150	282	-52.30	-13.00	-39.30	Pass	V
5802.199	150	357	-46.02	-13.00	-33.02	Pass	V
6534.315	151	2	-49.45	-13.00	-36.45	Pass	V

Band 4 20393 channel/BW 1.4(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1270.291	148	3	-58.85	-13.00	-45.85	Pass	H
1613.202	150	329	-51.73	-13.00	-38.73	Pass	H
3814.647	153	227	-52.26	-13.00	-39.26	Pass	H
5850.214	153	64	-48.40	-13.00	-35.40	Pass	H
6496.679	150	231	-47.59	-13.00	-34.59	Pass	H
8004.855	153	227	-48.94	-13.00	-35.94	Pass	H
1173.931	150	92	-60.06	-13.00	-47.06	Pass	V
1401.093	150	312	-58.63	-13.00	-45.63	Pass	V
3470.450	151	243	-52.61	-13.00	-39.61	Pass	V
3910.916	151	334	-49.81	-13.00	-36.81	Pass	V
5784.554	151	339	-48.06	-13.00	-35.06	Pass	V
6482.066	152	335	-50.06	-13.00	-37.06	Pass	V

16QAM

Band 4 19957 channel/BW 1.4(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1258.391	152	170	-60.27	-13.00	-47.27	Pass	H
1641.162	150	269	-53.59	-13.00	-40.59	Pass	H
3820.733	148	272	-50.78	-13.00	-37.78	Pass	H
5805.850	150	79	-47.47	-13.00	-34.47	Pass	H
6471.015	149	103	-45.85	-13.00	-32.85	Pass	H
7997.699	150	266	-46.24	-13.00	-33.24	Pass	H
1245.089	152	321	-57.44	-13.00	-44.44	Pass	V
1363.048	150	173	-59.13	-13.00	-46.13	Pass	V
3451.971	149	154	-52.74	-13.00	-39.74	Pass	V
3818.164	152	139	-52.57	-13.00	-39.57	Pass	V
5821.301	148	328	-47.70	-13.00	-34.70	Pass	V
6514.957	151	179	-50.08	-13.00	-37.08	Pass	V

Band 4 20175 channel/BW 1.4(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1288.932	149	355	-58.66	-13.00	-45.66	Pass	H
1621.184	149	70	-52.48	-13.00	-39.48	Pass	H
3823.855	151	166	-51.58	-13.00	-38.58	Pass	H
5829.359	150	53	-47.52	-13.00	-34.52	Pass	H
6447.951	149	223	-47.69	-13.00	-34.69	Pass	H
7946.524	150	106	-46.88	-13.00	-33.88	Pass	H
1215.380	152	206	-57.67	-13.00	-44.67	Pass	V
1428.360	151	217	-59.76	-13.00	-46.76	Pass	V
3499.883	152	122	-52.96	-13.00	-39.96	Pass	V
3854.579	151	341	-50.64	-13.00	-37.64	Pass	V
5754.563	153	331	-48.50	-13.00	-35.50	Pass	V
6542.138	148	331	-48.82	-13.00	-35.82	Pass	V

Band 4 20393 channel/BW 1.4(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1262.832	148	84	-59.95	-13.00	-46.95	Pass	H
1662.832	149	262	-52.55	-13.00	-39.55	Pass	H
3807.731	152	41	-50.48	-13.00	-37.48	Pass	H
5854.959	150	220	-46.87	-13.00	-33.87	Pass	H
6459.729	150	181	-47.48	-13.00	-34.48	Pass	H
7986.051	150	191	-47.35	-13.00	-34.35	Pass	H
1170.490	152	170	-57.83	-13.00	-44.83	Pass	V
1364.541	152	264	-60.53	-13.00	-47.53	Pass	V
3509.861	149	192	-52.99	-13.00	-39.99	Pass	V
3830.152	152	2	-52.29	-13.00	-39.29	Pass	V
5760.493	149	324	-48.53	-13.00	-35.53	Pass	V
6487.761	151	134	-48.70	-13.00	-35.70	Pass	V

Note:

- 1)Scan from 9kHz to 25GHz, the disturbance above 13GHz and below 1GHz are attenuated more than 20 dB below the applicable limit and not required to be reported, the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.
- 2)Tested with all kind of bandwidth, RB Size and RB Offset, Found the 1.4MHz with full RB were the worst case; and then Only the worst case is recorded in the report.

QPSK

Band 12 37775 channel/BW 1.4(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1242.825	150	142	-60.51	-13.00	-47.51	Pass	H
1664.510	148	100	-51.99	-13.00	-38.99	Pass	H
3793.489	151	335	-50.29	-13.00	-37.29	Pass	H
5829.984	151	23	-47.94	-13.00	-34.94	Pass	H
6487.837	149	42	-48.03	-13.00	-35.03	Pass	H
7987.461	152	176	-46.82	-13.00	-33.82	Pass	H
1213.162	150	308	-58.47	-13.00	-45.47	Pass	V
1372.232	152	244	-58.36	-13.00	-45.36	Pass	V
3507.781	152	8	-54.25	-13.00	-41.25	Pass	V
3837.380	152	297	-50.96	-13.00	-37.96	Pass	V
5737.007	150	275	-46.50	-13.00	-33.50	Pass	V
6540.479	151	4	-49.01	-13.00	-36.01	Pass	V

Band 12 38000 channel/BW 1.4(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1260.747	150	158	-60.77	-13.00	-47.77	Pass	H
1579.946	153	320	-52.95	-40.00	-12.95	Pass	H
3805.355	152	130	-49.95	-13.00	-36.95	Pass	H
5847.537	148	59	-46.78	-13.00	-33.78	Pass	H
6495.263	153	158	-47.65	-13.00	-34.65	Pass	H
8019.626	150	234	-47.15	-13.00	-34.15	Pass	H
1214.194	148	30	-57.80	-13.00	-44.80	Pass	V
1372.369	152	47	-58.56	-13.00	-45.56	Pass	V
3505.945	152	309	-52.53	-13.00	-39.53	Pass	V
3871.903	150	282	-52.30	-13.00	-39.30	Pass	V
5802.199	150	357	-46.02	-13.00	-33.02	Pass	V
6534.315	151	2	-49.45	-13.00	-36.45	Pass	V

Band 12 38225 channel/BW 1.4(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1270.291	148	3	-58.85	-13.00	-45.85	Pass	H
1613.202	150	329	-51.73	-13.00	-38.73	Pass	H
3814.647	153	227	-52.26	-13.00	-39.26	Pass	H
5850.214	153	64	-48.40	-13.00	-35.40	Pass	H
6496.679	150	231	-47.59	-13.00	-34.59	Pass	H
8004.855	153	227	-48.94	-13.00	-35.94	Pass	H
1173.931	150	92	-60.06	-13.00	-47.06	Pass	V
1401.093	150	312	-58.63	-13.00	-45.63	Pass	V
3470.450	151	243	-52.61	-13.00	-39.61	Pass	V
3910.916	151	334	-49.81	-13.00	-36.81	Pass	V
5784.554	151	339	-48.06	-13.00	-35.06	Pass	V
6482.066	152	335	-50.06	-13.00	-37.06	Pass	V

16QAM

Band 12 37775 channel/BW 1.4(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1258.391	152	170	-60.27	-13.00	-47.27	Pass	H
1641.162	150	269	-53.59	-13.00	-40.59	Pass	H
3820.733	148	272	-50.78	-13.00	-37.78	Pass	H
5805.850	150	79	-47.47	-13.00	-34.47	Pass	H
6471.015	149	103	-45.85	-13.00	-32.85	Pass	H
7997.699	150	266	-46.24	-13.00	-33.24	Pass	H
1245.089	152	321	-57.44	-13.00	-44.44	Pass	V
1363.048	150	173	-59.13	-13.00	-46.13	Pass	V
3451.971	149	154	-52.74	-13.00	-39.74	Pass	V
3818.164	152	139	-52.57	-13.00	-39.57	Pass	V
5821.301	148	328	-47.70	-13.00	-34.70	Pass	V
6514.957	151	179	-50.08	-13.00	-37.08	Pass	V

Band 12 38000 channel/BW 1.4(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1288.932	149	355	-58.66	-13.00	-45.66	Pass	H
1621.184	149	70	-52.48	-13.00	-39.48	Pass	H
3823.855	151	166	-51.58	-13.00	-38.58	Pass	H
5829.359	150	53	-47.52	-13.00	-34.52	Pass	H
6447.951	149	223	-47.69	-13.00	-34.69	Pass	H
7946.524	150	106	-46.88	-13.00	-33.88	Pass	H
1215.380	152	206	-57.67	-13.00	-44.67	Pass	V
1428.360	151	217	-59.76	-13.00	-46.76	Pass	V
3499.883	152	122	-52.96	-13.00	-39.96	Pass	V
3854.579	151	341	-50.64	-13.00	-37.64	Pass	V
5754.563	153	331	-48.50	-13.00	-35.50	Pass	V
6542.138	148	331	-48.82	-13.00	-35.82	Pass	V

Band 12 38225 channel/BW 1.4(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1262.832	148	84	-59.95	-13.00	-46.95	Pass	H
1662.832	149	262	-52.55	-13.00	-39.55	Pass	H
3807.731	152	41	-50.48	-13.00	-37.48	Pass	H
5854.959	150	220	-46.87	-13.00	-33.87	Pass	H
6459.729	150	181	-47.48	-13.00	-34.48	Pass	H
7986.051	150	191	-47.35	-13.00	-34.35	Pass	H
1170.490	152	170	-57.83	-13.00	-44.83	Pass	V
1364.541	152	264	-60.53	-13.00	-47.53	Pass	V
3509.861	149	192	-52.99	-13.00	-39.99	Pass	V
3830.152	152	2	-52.29	-13.00	-39.29	Pass	V
5760.493	149	324	-48.53	-13.00	-35.53	Pass	V
6487.761	151	134	-48.70	-13.00	-35.70	Pass	V

Note:

- 1)Scan from 9kHz to 25GHz, the disturbance above 13GHz and below 1GHz are attenuated more than 20 dB below the applicable limit and not required to be reported, the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.
- 2)Tested with all kind of bandwidth, RB Size and RB Offset, Found the 1.4MHz with full RB were the worst case; and then Only the worst case is recorded in the report.

12. FREQUENCY STABILITY

12.1 Standard Applicable

According to §22.355, §24.235, §27.54 the limit is 2.5ppm.

12.2 Test Procedure

According to §2.1055, the following test procedure was performed.

The Frequency Stability is measured directly with a Frequency Domain Analyzer. Frequency Deviation in ppm is calculated from the measured peak to peak value.

The Carrier Frequency Stability over Power Supply Voltage and over Temperature is measured with a Frequency Domain Analyzer in histogram mode

12.3 Summary of Test Results/Plots

Band2:

Channel Bandwidth: 1.4 MHz

Channel Bandwidth: 1.4 MHz					
Voltage					
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VL	TN	-0.83	-0.000447
		VN	TN	-1.87	-0.001008
		VH	TN	-2.61	-0.001413
	MCH	VL	TN	-3.99	-0.002121
		VN	TN	-2.08	-0.001107
		VH	TN	-4.18	-0.002223
	HCH	VL	TN	-0.35	-0.000183
		VN	TN	-0.60	-0.000312
		VH	TN	0.66	0.000345
16QAM	LCH	VL	TN	-2.26	-0.001220
		VN	TN	-1.40	-0.000759
		VH	TN	-1.43	-0.000772
	MCH	VL	TN	-2.11	-0.001124
		VN	TN	-3.63	-0.001930
		VH	TN	-3.04	-0.001617
	HCH	VL	TN	-1.80	-0.000940
		VN	TN	0.73	0.000381
		VH	TN	-0.28	-0.000145
Temperature					
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VN	-30	0.05	0.000028
		VN	-20	-1.01	-0.000546
		VN	-10	-2.46	-0.001330
		VN	0	-3.99	-0.002157
		VN	10	-1.30	-0.000700

		VN	20	-3.48	-0.001881
		VN	30	-0.76	-0.000410
		VN	40	-0.12	-0.000067
		VN	50	1.95	0.001052
	MCH	VN	-30	-0.89	-0.000472
		VN	-20	-2.17	-0.001154
		VN	-10	-1.29	-0.000687
		VN	0	-2.76	-0.001471
		VN	10	-3.06	-0.001627
		VN	20	-2.61	-0.001389
		VN	30	-0.75	-0.000399
		VN	40	0.88	0.000469
		VN	50	0.63	0.000333
	HCH	VN	-30	0.14	0.000073
		VN	-20	-1.59	-0.000834
		VN	-10	-2.67	-0.001397
		VN	0	-1.66	-0.000868
		VN	10	-0.77	-0.000402
		VN	20	-0.60	-0.000312
		VN	30	-0.95	-0.000499
		VN	40	-0.01	-0.000004
		VN	50	0.98	0.000511
16QAM	LCH	VN	-30	0.41	0.000219
		VN	-20	-0.94	-0.000509
		VN	-10	-2.72	-0.001468
		VN	0	-4.20	-0.002271
		VN	10	-1.18	-0.000637
		VN	20	-4.18	-0.002258
		VN	30	-0.81	-0.000439
		VN	40	-0.56	-0.000303
		VN	50	1.47	0.000793
	MCH	VN	-30	-1.20	-0.000639
		VN	-20	-2.03	-0.001079
		VN	-10	-1.11	-0.000592
		VN	0	-2.37	-0.001261
		VN	10	-2.91	-0.001550
		VN	20	-2.96	-0.001576
		VN	30	-1.29	-0.000689
		VN	40	1.06	0.000562
		VN	50	1.04	0.000555
	HCH	VN	-30	-0.04	-0.000023
		VN	-20	-1.86	-0.000975
		VN	-10	-2.21	-0.001156
		VN	0	-1.71	-0.000897
		VN	10	-0.75	-0.000391
		VN	20	-0.34	-0.000180
		VN	30	-1.03	-0.000538
		VN	40	0.53	0.000276
		VN	50	0.25	0.000129

Channel Bandwidth: 3 MHz

Channel Bandwidth: 3 MHz					
Voltage					
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VL	TN	-0.14	-0.000078
		VN	TN	-1.51	-0.000815
		VH	TN	-2.54	-0.001370
	MCH	VL	TN	-4.58	-0.002435
		VN	TN	-1.90	-0.001011
		VH	TN	-4.23	-0.002250
	HCH	VL	TN	-0.36	-0.000186
		VN	TN	-1.23	-0.000643
		VH	TN	0.55	0.000290
16QAM	LCH	VL	TN	-2.48	-0.001338
		VN	TN	-2.22	-0.001198
		VH	TN	-1.92	-0.001037
	MCH	VL	TN	-2.24	-0.001193
		VN	TN	-3.87	-0.002060
		VH	TN	-2.98	-0.001585
	HCH	VL	TN	-1.66	-0.000869
		VN	TN	0.77	0.000401
		VH	TN	-0.37	-0.000191
Temperature					
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VN	-30	-0.17	-0.000091
		VN	-20	-1.73	-0.000936
		VN	-10	-2.02	-0.001089
		VN	0	-3.38	-0.001826
		VN	10	-1.30	-0.000702
		VN	20	-3.82	-0.002066
		VN	30	-0.22	-0.000119
		VN	40	-0.39	-0.000209
		VN	50	1.59	0.000859
	MCH	VN	-30	-0.88	-0.000470
		VN	-20	-1.80	-0.000957
		VN	-10	-0.71	-0.000376
		VN	0	-2.08	-0.001106
		VN	10	-2.68	-0.001428
		VN	20	-2.16	-0.001147
		VN	30	-1.08	-0.000573
		VN	40	1.07	0.000569
		VN	50	1.17	0.000623
	HCH	VN	-30	0.55	0.000290
		VN	-20	-1.92	-0.001008
		VN	-10	-1.97	-0.001031
		VN	0	-1.32	-0.000690
		VN	10	0.04	0.000022

QPSK		VN	20	-0.06	-0.000031
		VN	30	-1.02	-0.000534
		VN	40	0.74	0.000385
		VN	50	0.23	0.000119
	LCH	VN	-30	0.07	0.000038
		VN	-20	-0.94	-0.000508
		VN	-10	-2.44	-0.001319
		VN	0	-3.50	-0.001891
		VN	10	-1.26	-0.000681
		VN	20	-3.53	-0.001904
		VN	30	-1.16	-0.000628
		VN	40	0.25	0.000135
	MCH	VN	50	1.04	0.000561
		VN	-30	-0.90	-0.000478
		VN	-20	-2.16	-0.001147
		VN	-10	-0.95	-0.000506
		VN	0	-2.51	-0.001335
		VN	10	-2.76	-0.001470
		VN	20	-2.84	-0.001512
		VN	30	-1.04	-0.000551
	HCH	VN	40	0.93	0.000493
		VN	50	0.64	0.000343
		VN	-30	0.27	0.000143
		VN	-20	-0.96	-0.000502
		VN	-10	-2.63	-0.001380
		VN	0	-1.03	-0.000540
		VN	10	-0.39	-0.000207
		VN	20	-0.66	-0.000346
		VN	30	-0.87	-0.000454
		VN	40	0.30	0.000158
		VN	50	1.03	0.000542

Channel Bandwidth: 5 MHz

Channel Bandwidth: 5 MHz					
Voltage					
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VL	TN	-0.07	-0.000039
		VN	TN	-1.42	-0.000768
		VH	TN	-2.53	-0.001365
	MCH	VL	TN	-3.86	-0.002052
		VN	TN	-1.99	-0.001060
		VH	TN	-4.47	-0.002377
	HCH	VL	TN	-0.44	-0.000232
		VN	TN	-1.11	-0.000584
		VH	TN	1.18	0.000617
16QAM	LCH	VL	TN	-1.79	-0.000965
		VN	TN	-2.08	-0.001124
		VH	TN	-1.47	-0.000796

	MCH	VL	TN	-3.03	-0.001614
		VN	TN	-3.18	-0.001690
		VH	TN	-2.24	-0.001191
	HCH	VL	TN	-1.32	-0.000689
		VN	TN	0.55	0.000286
		VH	TN	0.07	0.000037
Temperature					
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VN	-30	0.42	0.000226
		VN	-20	-1.33	-0.000716
		VN	-10	-2.12	-0.001143
		VN	0	-3.93	-0.002122
		VN	10	-1.98	-0.001071
		VN	20	-3.40	-0.001838
		VN	30	-0.22	-0.000118
		VN	40	-0.66	-0.000357
		VN	50	1.52	0.000820
	MCH	VN	-30	-1.23	-0.000652
		VN	-20	-1.65	-0.000876
		VN	-10	-1.12	-0.000594
		VN	0	-2.49	-0.001325
		VN	10	-2.44	-0.001300
		VN	20	-2.93	-0.001558
		VN	30	-1.24	-0.000659
		VN	40	1.03	0.000545
		VN	50	1.20	0.000640
	HCH	VN	-30	0.05	0.000028
		VN	-20	-1.31	-0.000685
		VN	-10	-2.29	-0.001202
		VN	0	-1.20	-0.000630
		VN	10	0.02	0.000012
		VN	20	-0.24	-0.000126
		VN	30	-0.97	-0.000506
		VN	40	0.57	0.000296
		VN	50	0.57	0.000296
16QAM	LCH	VN	-30	-0.09	-0.000049
		VN	-20	-1.30	-0.000702
		VN	-10	-1.96	-0.001056
		VN	0	-3.81	-0.002058
		VN	10	-2.09	-0.001126
		VN	20	-3.63	-0.001960
		VN	30	-1.13	-0.000612
		VN	40	0.15	0.000082
		VN	50	1.31	0.000710
	MCH	VN	-30	-1.12	-0.000596
		VN	-20	-1.52	-0.000808
		VN	-10	-1.48	-0.000789
		VN	0	-2.21	-0.001175
		VN	10	-3.00	-0.001594

		VN	20	-2.92	-0.001551
		VN	30	-1.00	-0.000531
		VN	40	0.91	0.000482
		VN	50	0.49	0.000259
	HCH	VN	-30	0.37	0.000194
		VN	-20	-1.22	-0.000641
		VN	-10	-2.11	-0.001104
		VN	0	-1.42	-0.000744
		VN	10	-0.71	-0.000372
		VN	20	-0.26	-0.000136
		VN	30	-1.64	-0.000860
		VN	40	0.37	0.000195
		VN	50	0.61	0.000318

Channel Bandwidth: 10 MHz

Channel Bandwidth: 10 MHz					
Voltage					
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VL	TN	-0.32	-0.000170
		VN	TN	-1.96	-0.001055
		VH	TN	-2.33	-0.001259
	MCH	VL	TN	-4.34	-0.002306
		VN	TN	-2.66	-0.001414
		VH	TN	-5.09	-0.002706
	HCH	VL	TN	-0.59	-0.000308
		VN	TN	-0.98	-0.000513
		VH	TN	0.38	0.000201
16QAM	LCH	VL	TN	-2.13	-0.001149
		VN	TN	-1.38	-0.000743
		VH	TN	-1.66	-0.000896
	MCH	VL	TN	-2.38	-0.001266
		VN	TN	-3.36	-0.001788
		VH	TN	-2.81	-0.001493
	HCH	VL	TN	-1.16	-0.000608
		VN	TN	-0.07	-0.000039
		VH	TN	-0.37	-0.000193
Temperature					
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)
16QAM	LCH	VN	-30	0.43	0.000230
		VN	-20	-0.97	-0.000521
		VN	-10	-2.38	-0.001284
		VN	0	-4.18	-0.002254
		VN	10	-2.00	-0.001081
		VN	20	-4.31	-0.002325
		VN	30	-0.34	-0.000185
		VN	40	-0.12	-0.000063
		VN	50	1.79	0.000967

	MCH	VN	-30	-0.93	-0.000495
		VN	-20	-1.90	-0.001011
		VN	-10	-0.68	-0.000362
		VN	0	-2.72	-0.001449
		VN	10	-2.93	-0.001559
		VN	20	-2.74	-0.001458
		VN	30	-1.11	-0.000589
		VN	40	1.47	0.000783
		VN	50	0.70	0.000370
	HCH	VN	-30	0.30	0.000158
		VN	-20	-1.20	-0.000630
		VN	-10	-1.93	-0.001012
		VN	0	-1.44	-0.000758
		VN	10	-0.85	-0.000444
		VN	20	-0.32	-0.000165
		VN	30	-1.69	-0.000889
		VN	40	0.17	0.000088
		VN	50	0.57	0.000298
QPSK	LCH	VN	-30	0.06	0.000033
		VN	-20	-1.16	-0.000627
		VN	-10	-2.33	-0.001254
		VN	0	-3.48	-0.001878
		VN	10	-2.14	-0.001153
		VN	20	-3.43	-0.001849
		VN	30	-1.17	-0.000630
		VN	40	-0.40	-0.000214
		VN	50	1.39	0.000751
	MCH	VN	-30	-1.42	-0.000754
		VN	-20	-1.70	-0.000906
		VN	-10	-0.64	-0.000340
		VN	0	-2.41	-0.001284
		VN	10	-2.41	-0.001281
		VN	20	-2.08	-0.001106
		VN	30	-0.86	-0.000458
		VN	40	1.41	0.000751
		VN	50	0.92	0.000487
	HCH	VN	-30	0.06	0.000033
		VN	-20	-1.60	-0.000837
		VN	-10	-1.96	-0.001026
		VN	0	-1.47	-0.000772
		VN	10	-0.40	-0.000208
		VN	20	-0.07	-0.000035
		VN	30	-1.49	-0.000783
		VN	40	0.32	0.000167
		VN	50	0.34	0.000176

Channel Bandwidth: 15 MHz

Channel Bandwidth: 15 MHz
Voltage

Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VL	TN	-0.78	-0.000423
		VN	TN	-1.56	-0.000838
		VH	TN	-2.20	-0.001183
	MCH	VL	TN	-4.39	-0.002337
		VN	TN	-2.10	-0.001116
		VH	TN	-4.75	-0.002526
	HCH	VL	TN	-0.77	-0.000406
		VN	TN	-1.34	-0.000707
		VH	TN	1.12	0.000590
16QAM	LCH	VL	TN	-1.98	-0.001063
		VN	TN	-1.52	-0.000817
		VH	TN	-2.10	-0.001131
	MCH	VL	TN	-2.58	-0.001373
		VN	TN	-2.97	-0.001577
		VH	TN	-2.33	-0.001242
	HCH	VL	TN	-1.34	-0.000704
		VN	TN	0.42	0.000222
		VH	TN	0.42	0.000221

Temperature

Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VN	-30	0.47	0.000252
		VN	-20	-1.55	-0.000834
		VN	-10	-2.48	-0.001338
		VN	0	-3.70	-0.001993
		VN	10	-1.84	-0.000992
		VN	20	-3.40	-0.001833
		VN	30	-0.72	-0.000389
		VN	40	-0.36	-0.000196
		VN	50	1.66	0.000891
	MCH	VN	-30	-1.65	-0.000878
		VN	-20	-1.39	-0.000740
		VN	-10	-1.51	-0.000804
		VN	0	-2.29	-0.001217
		VN	10	-2.50	-0.001330
		VN	20	-2.39	-0.001271
		VN	30	-1.41	-0.000750
		VN	40	1.56	0.000829
		VN	50	0.55	0.000290
	HCH	VN	-30	0.55	0.000290
		VN	-20	-1.78	-0.000938
		VN	-10	-2.26	-0.001186
		VN	0	-1.53	-0.000805
		VN	10	-0.89	-0.000468
		VN	20	-0.27	-0.000143
		VN	30	-1.21	-0.000637
		VN	40	0.49	0.000257
		VN	50	0.17	0.000090

16QAM	LCH	VN	-30	0.44	0.000237
		VN	-20	-1.11	-0.000597
		VN	-10	-2.24	-0.001204
		VN	0	-3.54	-0.001906
		VN	10	-1.69	-0.000909
		VN	20	-3.55	-0.001912
		VN	30	-1.04	-0.000560
		VN	40	0.28	0.000152
		VN	50	1.45	0.000781
	MCH	VN	-30	-0.95	-0.000507
		VN	-20	-1.44	-0.000764
		VN	-10	-1.58	-0.000838
		VN	0	-2.58	-0.001370
		VN	10	-2.41	-0.001282
		VN	20	-3.02	-0.001609
		VN	30	-1.05	-0.000561
		VN	40	1.54	0.000821
		VN	50	0.85	0.000451
	HCH	VN	-30	-0.04	-0.000022
		VN	-20	-1.87	-0.000985
		VN	-10	-2.52	-0.001323
		VN	0	-1.32	-0.000696
		VN	10	-0.15	-0.000081
		VN	20	-0.40	-0.000208
		VN	30	-1.46	-0.000769
		VN	40	0.60	0.000315
		VN	50	0.64	0.000337

Channel Bandwidth: 20 MHz

Channel Bandwidth: 20 MHz					
Voltage					
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VL	TN	-0.52	-0.000281
		VN	TN	-1.63	-0.000877
		VH	TN	-2.04	-0.001095
	MCH	VL	TN	-4.67	-0.002484
		VN	TN	-2.53	-0.001344
		VH	TN	-4.47	-0.002378
	HCH	VL	TN	-0.76	-0.000400
		VN	TN	-1.01	-0.000530
		VH	TN	0.74	0.000392
16QAM	LCH	VL	TN	-1.61	-0.000867
		VN	TN	-2.12	-0.001140
		VH	TN	-2.35	-0.001263
	MCH	VL	TN	-2.83	-0.001504
		VN	TN	-3.44	-0.001831
		VH	TN	-2.47	-0.001315
	HCH	VL	TN	-1.16	-0.000609

		VN	TN	0.05	0.000026
		VH	TN	-0.32	-0.000168
Temperature					
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VN	-30	0.17	0.000089
		VN	-20	-1.64	-0.000881
		VN	-10	-1.90	-0.001024
		VN	0	-3.64	-0.001958
		VN	10	-1.35	-0.000726
		VN	20	-3.83	-0.002059
		VN	30	-0.68	-0.000364
		VN	40	-0.33	-0.000177
		VN	50	1.53	0.000822
	MCH	VN	-30	-1.59	-0.000844
		VN	-20	-1.64	-0.000870
		VN	-10	-1.20	-0.000638
		VN	0	-2.52	-0.001339
		VN	10	-2.84	-0.001512
		VN	20	-2.97	-0.001579
		VN	30	-0.70	-0.000370
		VN	40	1.00	0.000533
		VN	50	0.80	0.000428
	HCH	VN	-30	-0.04	-0.000019
		VN	-20	-1.41	-0.000740
		VN	-10	-1.91	-0.001003
		VN	0	-1.15	-0.000608
		VN	10	-0.44	-0.000232
		VN	20	0.00	-0.000002
		VN	30	-1.43	-0.000751
		VN	40	0.50	0.000262
		VN	50	0.37	0.000196
16QAM	LCH	VN	-30	0.35	0.000190
		VN	-20	-1.18	-0.000633
		VN	-10	-2.01	-0.001083
		VN	0	-3.33	-0.001790
		VN	10	-1.17	-0.000626
		VN	20	-3.83	-0.002057
		VN	30	-0.94	-0.000504
		VN	40	0.20	0.000105
		VN	50	1.80	0.000969
	MCH	VN	-30	-1.17	-0.000621
		VN	-20	-2.13	-0.001134
		VN	-10	-0.92	-0.000490
		VN	0	-2.06	-0.001094
		VN	10	-2.95	-0.001571
		VN	20	-2.08	-0.001105
		VN	30	-0.67	-0.000355
		VN	40	1.44	0.000768
		VN	50	1.00	0.000531

	HCH	VN	-30	0.37	0.000196
		VN	-20	-1.78	-0.000938
		VN	-10	-2.15	-0.001133
		VN	0	-1.52	-0.000801
		VN	10	0.06	0.000031
		VN	20	-0.33	-0.000172
		VN	30	-1.69	-0.000888
		VN	40	0.91	0.000481
		VN	50	0.67	0.000355

Band4:

Channel Bandwidth: 1.4 MHz

Channel Bandwidth: 1.4 MHz					
Voltage					
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VL	TN	-0.19	-0.000109
		VN	TN	-1.63	-0.000953
		VH	TN	-1.88	-0.001097
	MCH	VL	TN	-4.68	-0.002704
		VN	TN	-1.89	-0.001089
		VH	TN	-4.89	-0.002820
	HCH	VL	TN	-0.52	-0.000298
		VN	TN	-1.30	-0.000739
		VH	TN	1.02	0.000582
16QAM	LCH	VL	TN	-1.85	-0.001081
		VN	TN	-1.95	-0.001142
		VH	TN	-1.78	-0.001038
	MCH	VL	TN	-3.04	-0.001757
		VN	TN	-3.88	-0.002241
		VH	TN	-3.11	-0.001795
	HCH	VL	TN	-1.12	-0.000639
		VN	TN	0.43	0.000246
		VH	TN	0.32	0.000180
Temperature					
Modulation	Channel I	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VN	-30	0.42	0.000246
		VN	-20	-1.61	-0.000938
		VN	-10	-2.61	-0.001528
		VN	0	-3.37	-0.001972
		VN	10	-2.10	-0.001230
		VN	20	-4.36	-0.002551
		VN	30	-1.02	-0.000597
		VN	40	-0.18	-0.000105
		VN	50	1.47	0.000857
	MCH	VN	-30	-1.41	-0.000811
		VN	-20	-2.12	-0.001221
		VN	-10	-0.85	-0.000490
		VN	0	-2.09	-0.001206
		VN	10	-2.72	-0.001572

		VN	20	-2.35	-0.001358
		VN	30	-1.65	-0.000952
		VN	40	1.05	0.000605
		VN	50	1.04	0.000600
	HCH	VN	-30	0.64	0.000368
		VN	-20	-1.70	-0.000971
		VN	-10	-2.38	-0.001356
		VN	0	-1.44	-0.000819
		VN	10	-0.18	-0.000103
		VN	20	0.14	0.000080
		VN	30	-1.07	-0.000610
		VN	40	0.08	0.000044
		VN	50	0.85	0.000486
		VN	-30	-0.16	-0.000095
16QAM	LCH	VN	-20	-1.74	-0.001020
		VN	-10	-2.05	-0.001201
		VN	0	-3.51	-0.002050
		VN	10	-1.98	-0.001160
		VN	20	-4.13	-0.002411
		VN	30	-0.94	-0.000551
		VN	40	-0.22	-0.000127
		VN	50	1.11	0.000647
	MCH	VN	-30	-1.31	-0.000758
		VN	-20	-1.63	-0.000940
		VN	-10	-0.93	-0.000540
		VN	0	-2.36	-0.001363
		VN	10	-2.81	-0.001621
		VN	20	-2.80	-0.001617
		VN	30	-1.24	-0.000718
		VN	40	1.78	0.001025
		VN	50	0.68	0.000395
	HCH	VN	-30	-0.06	-0.000036
		VN	-20	-0.95	-0.000541
		VN	-10	-1.94	-0.001106
		VN	0	-1.01	-0.000574
		VN	10	-0.65	-0.000372
		VN	20	-0.71	-0.000406
		VN	30	-1.59	-0.000906
		VN	40	0.67	0.000379
		VN	50	0.41	0.000236

Channel Bandwidth: 3 MHz

Channel Bandwidth: 3 MHz					
Voltage					
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VL	TN	-0.37	-0.000216
		VN	TN	-1.44	-0.000840
		VH	TN	-2.56	-0.001497

	MCH	VL	TN	-3.92	-0.002265
		VN	TN	-1.88	-0.001085
		VH	TN	-4.41	-0.002548
	HCH	VL	TN	-0.47	-0.000266
		VN	TN	-0.71	-0.000407
		VH	TN	0.45	0.000257
16QAM	LCH	VL	TN	-2.16	-0.001263
		VN	TN	-1.62	-0.000947
		VH	TN	-2.08	-0.001214
	MCH	VL	TN	-2.28	-0.001317
		VN	TN	-3.85	-0.002220
		VH	TN	-2.87	-0.001656
	HCH	VL	TN	-2.04	-0.001162
		VN	TN	0.43	0.000244
		VH	TN	0.05	0.000030
Temperature					
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VN	-30	0.63	0.000368
		VN	-20	-1.81	-0.001059
		VN	-10	-2.05	-0.001198
		VN	0	-3.55	-0.002076
		VN	10	-1.39	-0.000813
		VN	20	-3.98	-0.002324
		VN	30	-0.53	-0.000312
		VN	40	0.11	0.000066
		VN	50	1.74	0.001015
	MCH	VN	-30	-1.32	-0.000760
		VN	-20	-1.56	-0.000900
		VN	-10	-1.55	-0.000897
		VN	0	-2.58	-0.001487
		VN	10	-2.20	-0.001269
		VN	20	-2.61	-0.001508
		VN	30	-0.89	-0.000514
		VN	40	1.04	0.000603
		VN	50	1.20	0.000695
	HCH	VN	-30	-0.04	-0.000023
		VN	-20	-0.98	-0.000556
		VN	-10	-2.40	-0.001368
		VN	0	-1.63	-0.000930
		VN	10	-0.05	-0.000031
		VN	20	-0.57	-0.000325
		VN	30	-0.93	-0.000530
		VN	40	0.37	0.000210
		VN	50	0.35	0.000200
QPSK	LCH	VN	-30	0.16	0.000096
		VN	-20	-1.77	-0.001034
		VN	-10	-2.62	-0.001529
		VN	0	-3.40	-0.001985
		VN	10	-1.93	-0.001129

		VN	20	-3.83	-0.002240
		VN	30	-1.06	-0.000622
		VN	40	-0.28	-0.000161
		VN	50	1.72	0.001003
	MCH	VN	-30	-1.70	-0.000984
		VN	-20	-2.17	-0.001250
		VN	-10	-1.12	-0.000646
		VN	0	-2.79	-0.001610
		VN	10	-2.80	-0.001613
		VN	20	-2.84	-0.001638
		VN	30	-1.03	-0.000594
		VN	40	1.22	0.000704
		VN	50	0.50	0.000288
	HCH	VN	-30	0.45	0.000257
		VN	-20	-1.46	-0.000830
		VN	-10	-2.61	-0.001491
		VN	0	-1.28	-0.000729
		VN	10	-0.77	-0.000438
		VN	20	-0.36	-0.000205
		VN	30	-1.03	-0.000588
		VN	40	0.76	0.000435
		VN	50	1.01	0.000576

Channel Bandwidth: 5 MHz

Channel Bandwidth: 5 MHz					
Voltage					
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VL	TN	0.10	0.000056
		VN	TN	-2.18	-0.001273
		VH	TN	-2.59	-0.001512
	MCH	VL	TN	-4.75	-0.002741
		VN	TN	-2.53	-0.001458
		VH	TN	-4.86	-0.002804
	HCH	VL	TN	-1.10	-0.000627
		VN	TN	-0.74	-0.000423
		VH	TN	1.16	0.000663
16QAM	LCH	VL	TN	-1.91	-0.001117
		VN	TN	-1.79	-0.001044
		VH	TN	-2.30	-0.001344
	MCH	VL	TN	-2.80	-0.001614
		VN	TN	-3.59	-0.002070
		VH	TN	-2.31	-0.001332
	HCH	VL	TN	-1.23	-0.000700
		VN	TN	0.72	0.000413
		VH	TN	0.57	0.000324
Temperature					
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)

QPSK	LCH	VN	-30	-0.15	-0.000090
		VN	-20	-1.77	-0.001035
		VN	-10	-2.47	-0.001443
		VN	0	-3.40	-0.001985
		VN	10	-1.16	-0.000677
		VN	20	-3.97	-0.002321
		VN	30	-1.15	-0.000671
		VN	40	-0.05	-0.000029
		VN	50	1.58	0.000920
	MCH	VN	-30	-1.70	-0.000982
		VN	-20	-1.43	-0.000823
		VN	-10	-1.19	-0.000688
		VN	0	-2.60	-0.001502
		VN	10	-2.23	-0.001287
		VN	20	-2.98	-0.001720
		VN	30	-0.69	-0.000396
		VN	40	1.09	0.000631
		VN	50	1.40	0.000809
	HCH	VN	-30	0.09	0.000049
		VN	-20	-1.14	-0.000651
		VN	-10	-2.55	-0.001453
		VN	0	-1.07	-0.000610
		VN	10	-0.44	-0.000252
		VN	20	-0.70	-0.000399
		VN	30	-1.27	-0.000727
		VN	40	0.77	0.000439
		VN	50	0.93	0.000530
16QAM	LCH	VN	-30	0.36	0.000210
		VN	-20	-1.84	-0.001073
		VN	-10	-1.77	-0.001031
		VN	0	-3.63	-0.002117
		VN	10	-1.30	-0.000760
		VN	20	-4.11	-0.002403
		VN	30	-0.41	-0.000237
		VN	40	-0.31	-0.000181
		VN	50	1.73	0.001008
	MCH	VN	-30	-0.77	-0.000443
		VN	-20	-1.73	-0.000998
		VN	-10	-1.34	-0.000775
		VN	0	-2.33	-0.001346
		VN	10	-2.37	-0.001368
		VN	20	-2.42	-0.001398
		VN	30	-1.25	-0.000719
		VN	40	1.33	0.000766
		VN	50	0.99	0.000570
	HCH	VN	-30	0.47	0.000268
		VN	-20	-1.01	-0.000576
		VN	-10	-2.20	-0.001256
		VN	0	-1.68	-0.000961
		VN	10	-0.18	-0.000104

		VN	20	0.11	0.000062
		VN	30	-1.26	-0.000721
		VN	40	0.13	0.000073
		VN	50	1.13	0.000644

Channel Bandwidth: 10 MHz

Channel Bandwidth: 10 MHz					
Voltage					
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VL	TN	-0.14	-0.000084
		VN	TN	-2.31	-0.001346
		VH	TN	-2.55	-0.001485
	MCH	VL	TN	-4.40	-0.002538
		VN	TN	-1.79	-0.001033
		VH	TN	-4.98	-0.002872
	HCH	VL	TN	-0.89	-0.000506
		VN	TN	-0.52	-0.000298
		VH	TN	0.82	0.000466
16QAM	LCH	VL	TN	-1.93	-0.001126
		VN	TN	-2.21	-0.001288
		VH	TN	-2.27	-0.001322
	MCH	VL	TN	-2.17	-0.001253
		VN	TN	-3.63	-0.002092
		VH	TN	-2.27	-0.001312
	HCH	VL	TN	-1.21	-0.000694
		VN	TN	0.11	0.000064
		VH	TN	-0.37	-0.000211
Temperature					
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)
16QAM	LCH	VN	-30	0.57	0.000333
		VN	-20	-1.77	-0.001034
		VN	-10	-2.60	-0.001515
		VN	0	-3.70	-0.002160
		VN	10	-1.62	-0.000942
		VN	20	-3.74	-0.002182
		VN	30	-0.41	-0.000240
		VN	40	0.10	0.000058
		VN	50	1.22	0.000711
	MCH	VN	-30	-1.63	-0.000938
		VN	-20	-2.03	-0.001170
		VN	-10	-1.33	-0.000766
		VN	0	-2.72	-0.001570
		VN	10	-2.86	-0.001653
		VN	20	-2.56	-0.001479
		VN	30	-1.43	-0.000824
		VN	40	1.24	0.000714
		VN	50	0.68	0.000394

	HCH	VN	-30	-0.21	-0.000119
		VN	-20	-1.18	-0.000676
		VN	-10	-2.70	-0.001545
		VN	0	-1.05	-0.000601
		VN	10	-0.36	-0.000208
		VN	20	-0.02	-0.000013
		VN	30	-1.68	-0.000958
		VN	40	0.92	0.000528
		VN	50	1.08	0.000619
QPSK	LCH	VN	-30	0.45	0.000263
		VN	-20	-1.62	-0.000942
		VN	-10	-2.64	-0.001537
		VN	0	-3.71	-0.002164
		VN	10	-1.69	-0.000987
		VN	20	-3.83	-0.002232
		VN	30	-0.68	-0.000394
		VN	40	-0.37	-0.000219
		VN	50	1.91	0.001114
	MCH	VN	-30	-0.98	-0.000568
		VN	-20	-1.49	-0.000861
		VN	-10	-1.23	-0.000709
		VN	0	-2.70	-0.001558
		VN	10	-3.09	-0.001782
		VN	20	-2.39	-0.001380
		VN	30	-1.00	-0.000576
		VN	40	1.07	0.000619
		VN	50	1.19	0.000685
	HCH	VN	-30	-0.28	-0.000162
		VN	-20	-1.86	-0.001061
		VN	-10	-2.14	-0.001226
		VN	0	-1.68	-0.000963
		VN	10	-0.76	-0.000434
		VN	20	-0.20	-0.000117
		VN	30	-0.75	-0.000429
		VN	40	0.35	0.000203
		VN	50	0.78	0.000444

Channel Bandwidth: 15 MHz

Channel Bandwidth: 15 MHz					
Voltage					
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VL	TN	-0.10	-0.000056
		VN	TN	-1.71	-0.000997
		VH	TN	-2.74	-0.001593
	MCH	VL	TN	-4.31	-0.002489
		VN	TN	-2.62	-0.001514
		VH	TN	-4.71	-0.002717
	HCH	VL	TN	-0.65	-0.000371

16QAM	LCH	VN	TN	-0.65	-0.000369
		VH	TN	0.34	0.000196
		VL	TN	-1.54	-0.000894
	MCH	VN	TN	-1.68	-0.000976
		VH	TN	-1.66	-0.000968
		VL	TN	-2.60	-0.001503
	HCH	VN	TN	-3.03	-0.001747
		VH	TN	-2.84	-0.001638
		VL	TN	-1.25	-0.000715
		VN	TN	0.16	0.000089
		VH	TN	0.40	0.000229
Temperature					
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VN	-30	0.57	0.000332
		VN	-20	-1.52	-0.000886
		VN	-10	-2.62	-0.001526
		VN	0	-3.39	-0.001971
		VN	10	-1.97	-0.001148
		VN	20	-3.80	-0.002213
		VN	30	-0.80	-0.000463
		VN	40	-0.11	-0.000062
	MCH	VN	50	1.13	0.000660
		VN	-30	-1.74	-0.001003
		VN	-20	-2.13	-0.001232
		VN	-10	-0.71	-0.000411
		VN	0	-2.92	-0.001684
		VN	10	-2.19	-0.001264
		VN	20	-2.25	-0.001298
		VN	30	-1.16	-0.000672
	HCH	VN	40	1.31	0.000756
		VN	50	0.95	0.000547
		VN	-30	0.61	0.000351
		VN	-20	-1.63	-0.000932
		VN	-10	-1.97	-0.001128
		VN	0	-0.96	-0.000547
		VN	10	-0.26	-0.000148
		VN	20	-0.52	-0.000297
16QAM	LCH	VN	30	-0.74	-0.000422
		VN	40	0.53	0.000302
		VN	50	0.95	0.000545
		VN	-30	0.37	0.000214
		VN	-20	-1.04	-0.000603
		VN	-10	-2.24	-0.001305
		VN	0	-4.14	-0.002410
		VN	10	-1.86	-0.001082
		VN	20	-3.72	-0.002168
		VN	30	-0.53	-0.000310
		VN	40	0.00	0.000002
		VN	50	1.04	0.000607

	MCH	VN	-30	-1.72	-0.000990
		VN	-20	-2.22	-0.001283
		VN	-10	-1.49	-0.000860
		VN	0	-2.11	-0.001217
		VN	10	-2.81	-0.001621
		VN	20	-2.79	-0.001613
		VN	30	-1.57	-0.000908
		VN	40	1.16	0.000672
		VN	50	0.65	0.000377
	HCH	VN	-30	0.08	0.000048
		VN	-20	-1.10	-0.000631
		VN	-10	-2.42	-0.001385
		VN	0	-0.83	-0.000477
		VN	10	-0.52	-0.000298
		VN	20	0.08	0.000045
		VN	30	-1.01	-0.000577
		VN	40	0.17	0.000098
		VN	50	0.59	0.000340

Channel Bandwidth: 20 MHz

Channel Bandwidth: 20 MHz					
Voltage					
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VL	TN	0.01	0.000007
		VN	TN	-2.17	-0.001259
		VH	TN	-2.41	-0.001402
	MCH	VL	TN	-4.49	-0.002591
		VN	TN	-1.76	-0.001018
		VH	TN	-5.10	-0.002946
	HCH	VL	TN	-0.50	-0.000284
		VN	TN	-0.85	-0.000490
		VH	TN	0.37	0.000212
16QAM	LCH	VL	TN	-1.69	-0.000984
		VN	TN	-1.91	-0.001108
		VH	TN	-2.31	-0.001342
	MCH	VL	TN	-2.79	-0.001609
		VN	TN	-3.66	-0.002110
		VH	TN	-2.75	-0.001590
	HCH	VL	TN	-1.62	-0.000930
		VN	TN	0.85	0.000484
		VH	TN	-0.16	-0.000091
Temperature					
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VN	-30	0.09	0.000050
		VN	-20	-1.61	-0.000935
		VN	-10	-2.49	-0.001446
		VN	0	-4.17	-0.002427

		VN	10	-1.68	-0.000978
		VN	20	-3.72	-0.002164
		VN	30	-0.38	-0.000219
		VN	40	-0.53	-0.000311
		VN	50	1.04	0.000606
	MCH	VN	-30	-1.14	-0.000656
		VN	-20	-1.38	-0.000798
		VN	-10	-1.08	-0.000623
		VN	0	-2.90	-0.001675
		VN	10	-2.66	-0.001534
		VN	20	-2.73	-0.001576
		VN	30	-1.13	-0.000652
		VN	40	0.85	0.000492
		VN	50	1.15	0.000665
	HCH	VN	-30	0.15	0.000085
		VN	-20	-1.64	-0.000942
		VN	-10	-2.63	-0.001507
		VN	0	-1.50	-0.000862
		VN	10	-0.20	-0.000112
		VN	20	-0.24	-0.000140
		VN	30	-0.94	-0.000539
		VN	40	0.18	0.000102
		VN	50	0.53	0.000302
16QAM	LCH	VN	-30	0.65	0.000377
		VN	-20	-1.29	-0.000748
		VN	-10	-2.14	-0.001243
		VN	0	-3.41	-0.001981
		VN	10	-1.57	-0.000912
		VN	20	-3.62	-0.002105
		VN	30	-0.23	-0.000134
		VN	40	-0.09	-0.000052
		VN	50	1.14	0.000660
	MCH	VN	-30	-1.52	-0.000878
		VN	-20	-1.72	-0.000993
		VN	-10	-1.59	-0.000915
		VN	0	-2.09	-0.001208
		VN	10	-2.18	-0.001259
		VN	20	-2.96	-0.001709
		VN	30	-0.77	-0.000442
		VN	40	0.85	0.000490
		VN	50	1.31	0.000755
	HCH	VN	-30	0.58	0.000332
		VN	-20	-1.32	-0.000755
		VN	-10	-2.04	-0.001170
		VN	0	-1.51	-0.000864
		VN	10	-0.24	-0.000135
		VN	20	-0.31	-0.000175
		VN	30	-1.43	-0.000817
		VN	40	0.14	0.000081
		VN	50	1.00	0.000570

Band 12

Channel Bandwidth: 1.4 MHz

Channel Bandwidth: 1.4 MHz					
Voltage					
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VL	TN	0.07	0.000104
		VN	TN	-1.43	-0.002042
		VH	TN	-2.05	-0.002933
	MCH	VL	TN	-3.85	-0.005435
		VN	TN	-2.18	-0.003087
		VH	TN	-4.43	-0.006266
	HCH	VL	TN	-0.72	-0.001011
		VN	TN	-0.78	-0.001093
		VH	TN	0.50	0.000697
16QAM	LCH	VL	TN	-1.99	-0.002841
		VN	TN	-1.62	-0.002322
		VH	TN	-2.32	-0.003319
	MCH	VL	TN	-2.63	-0.003723
		VN	TN	-3.78	-0.005350
		VH	TN	-2.43	-0.003431
	HCH	VL	TN	-1.66	-0.002319
		VN	TN	0.09	0.000127
		VH	TN	-0.12	-0.000163
Temperature					
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VN	-30	0.59	0.000837
		VN	-20	-1.32	-0.001883
		VN	-10	-2.68	-0.003833
		VN	0	-3.57	-0.005102
		VN	10	-1.74	-0.002487
		VN	20	-3.86	-0.005511
		VN	30	-0.50	-0.000719
		VN	40	-0.39	-0.000552
		VN	50	1.51	0.002163
	MCH	VN	-30	-1.38	-0.001954
		VN	-20	-1.87	-0.002638
		VN	-10	-1.15	-0.001620
		VN	0	-2.26	-0.003193
		VN	10	-2.96	-0.004190
		VN	20	-2.41	-0.003407
		VN	30	-1.14	-0.001615
		VN	40	1.40	0.001977
		VN	50	1.43	0.002020
	HCH	VN	-30	0.56	0.000785
		VN	-20	-1.08	-0.001513
		VN	-10	-2.54	-0.003546
		VN	0	-1.29	-0.001810
		VN	10	0.05	0.000064

16QAM		VN	20	-0.28	-0.000389
		VN	30	-0.88	-0.001230
		VN	40	-0.04	-0.000049
		VN	50	0.52	0.000726
	LCH	VN	-30	-0.13	-0.000181
		VN	-20	-1.00	-0.001436
		VN	-10	-1.79	-0.002561
		VN	0	-3.58	-0.005110
		VN	10	-1.17	-0.001671
		VN	20	-4.29	-0.006130
		VN	30	-0.98	-0.001407
		VN	40	-0.46	-0.000655
		VN	50	1.71	0.002440
	MCH	VN	-30	-1.58	-0.002240
		VN	-20	-2.27	-0.003214
		VN	-10	-1.34	-0.001901
		VN	0	-2.79	-0.003943
		VN	10	-2.63	-0.003717
		VN	20	-2.79	-0.003938
		VN	30	-1.24	-0.001757
		VN	40	1.53	0.002156
		VN	50	0.53	0.000746
	HCH	VN	-30	0.44	0.000611
		VN	-20	-1.32	-0.001843
		VN	-10	-2.43	-0.003404
		VN	0	-1.39	-0.001938
		VN	10	0.03	0.000041
		VN	20	-0.48	-0.000665
		VN	30	-0.94	-0.001317
		VN	40	0.04	0.000050
		VN	50	0.37	0.000512

Channel Bandwidth: 3 MHz

Channel Bandwidth: 3 MHz					
Voltage					
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VL	TN	-0.43	-0.000620
		VN	TN	-1.94	-0.002775
		VH	TN	-2.10	-0.002995
	MCH	VL	TN	-3.79	-0.005360
		VN	TN	-1.86	-0.002624
		VH	TN	-5.00	-0.007074
	HCH	VL	TN	-0.57	-0.000805
		VN	TN	-0.98	-0.001376
		VH	TN	1.20	0.001683
16QAM	LCH	VL	TN	-2.26	-0.003230
		VN	TN	-1.77	-0.002532
		VH	TN	-2.08	-0.002974

	MCH	VL	TN	-2.73	-0.003862
		VN	TN	-3.46	-0.004887
		VH	TN	-2.44	-0.003449
	HCH	VL	TN	-1.39	-0.001939
		VN	TN	0.44	0.000616
		VH	TN	-0.10	-0.000143
Temperature					
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VN	-30	0.13	0.000184
		VN	-20	-1.70	-0.002430
		VN	-10	-2.32	-0.003314
		VN	0	-3.87	-0.005519
		VN	10	-1.99	-0.002840
		VN	20	-3.50	-0.004990
		VN	30	-1.17	-0.001668
		VN	40	0.12	0.000176
		VN	50	1.03	0.001466
	MCH	VN	-30	-1.27	-0.001795
		VN	-20	-1.89	-0.002676
		VN	-10	-1.47	-0.002072
		VN	0	-2.55	-0.003599
		VN	10	-2.94	-0.004155
		VN	20	-2.27	-0.003213
		VN	30	-1.42	-0.002011
		VN	40	0.90	0.001268
		VN	50	0.93	0.001311
	HCH	VN	-30	-0.03	-0.000048
		VN	-20	-1.35	-0.001883
		VN	-10	-2.24	-0.003139
		VN	0	-1.22	-0.001707
		VN	10	0.07	0.000096
		VN	20	-0.08	-0.000117
		VN	30	-1.64	-0.002290
		VN	40	0.63	0.000881
		VN	50	0.51	0.000709
QPSK	LCH	VN	-30	-0.26	-0.000375
		VN	-20	-1.85	-0.002637
		VN	-10	-2.28	-0.003249
		VN	0	-3.61	-0.005148
		VN	10	-1.94	-0.002776
		VN	20	-3.73	-0.005319
		VN	30	-0.39	-0.000552
		VN	40	-0.50	-0.000713
		VN	50	1.93	0.002751
	MCH	VN	-30	-1.37	-0.001942
		VN	-20	-2.19	-0.003090
		VN	-10	-0.99	-0.001403
		VN	0	-2.78	-0.003925
		VN	10	-2.83	-0.004001

		VN	20	-2.77	-0.003913
		VN	30	-1.14	-0.001615
		VN	40	1.48	0.002093
		VN	50	0.54	0.000768
	HCH	VN	-30	0.60	0.000845
		VN	-20	-1.44	-0.002018
		VN	-10	-2.28	-0.003195
		VN	0	-1.58	-0.002216
		VN	10	-0.15	-0.000205
		VN	20	-0.56	-0.000790
		VN	30	-1.67	-0.002336
		VN	40	0.50	0.000703
		VN	50	0.58	0.000814

Channel Bandwidth: 5 MHz

Channel Bandwidth: 5 MHz					
Voltage					
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VL	TN	-0.84	-0.001194
		VN	TN	-1.69	-0.002412
		VH	TN	-2.52	-0.003586
	MCH	VL	TN	-4.31	-0.006089
		VN	TN	-2.18	-0.003084
		VH	TN	-4.76	-0.006727
	HCH	VL	TN	-0.38	-0.000534
		VN	TN	-1.22	-0.001704
		VH	TN	0.92	0.001294
16QAM	LCH	VL	TN	-2.28	-0.003244
		VN	TN	-2.01	-0.002863
		VH	TN	-2.09	-0.002972
	MCH	VL	TN	-2.42	-0.003418
		VN	TN	-3.67	-0.005180
		VH	TN	-2.65	-0.003752
	HCH	VL	TN	-1.47	-0.002062
		VN	TN	0.73	0.001030
		VH	TN	-0.30	-0.000419
Temperature					
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VN	-30	-0.27	-0.000388
		VN	-20	-1.62	-0.002310
		VN	-10	-1.91	-0.002722
		VN	0	-3.99	-0.005683
		VN	10	-1.96	-0.002789
		VN	20	-4.09	-0.005832
		VN	30	-1.16	-0.001651
		VN	40	-0.62	-0.000877
		VN	50	1.83	0.002613

	MCH	VN	-30	-1.43	-0.002018
		VN	-20	-2.17	-0.003061
		VN	-10	-0.93	-0.001319
		VN	0	-2.72	-0.003846
		VN	10	-2.88	-0.004073
		VN	20	-2.26	-0.003190
		VN	30	-1.59	-0.002241
		VN	40	1.63	0.002309
		VN	50	0.59	0.000832
	HCH	VN	-30	0.45	0.000626
		VN	-20	-1.14	-0.001600
		VN	-10	-1.91	-0.002673
		VN	0	-1.13	-0.001588
		VN	10	-0.18	-0.000256
		VN	20	-0.21	-0.000292
		VN	30	-1.25	-0.001751
		VN	40	0.53	0.000742
		VN	50	0.83	0.001166
16QAM	LCH	VN	-30	-0.16	-0.000230
		VN	-20	-1.81	-0.002585
		VN	-10	-1.96	-0.002788
		VN	0	-3.88	-0.005533
		VN	10	-1.20	-0.001711
		VN	20	-4.28	-0.006104
		VN	30	-0.27	-0.000379
		VN	40	-0.33	-0.000466
		VN	50	0.99	0.001415
	MCH	VN	-30	-1.41	-0.001989
		VN	-20	-1.87	-0.002646
		VN	-10	-0.76	-0.001072
		VN	0	-2.35	-0.003318
		VN	10	-3.09	-0.004365
		VN	20	-2.54	-0.003588
		VN	30	-1.47	-0.002077
		VN	40	1.75	0.002466
		VN	50	0.95	0.001344
	HCH	VN	-30	0.01	0.000017
		VN	-20	-1.32	-0.001845
		VN	-10	-2.67	-0.003740
		VN	0	-1.73	-0.002419
		VN	10	-0.44	-0.000619
		VN	20	0.03	0.000043
		VN	30	-0.80	-0.001121
		VN	40	-0.02	-0.000029
		VN	50	0.24	0.000332

Channel Bandwidth: 10 MHz

Channel Bandwidth: 10 MHz					
Voltage					
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)
QPSK	LCH	VL	TN	-0.77	-0.001099
		VN	TN	-2.16	-0.003065
		VH	TN	-2.28	-0.003244
	MCH	VL	TN	-4.51	-0.006373
		VN	TN	-2.67	-0.003774
		VH	TN	-4.38	-0.006186
	HCH	VL	TN	-0.59	-0.000837
		VN	TN	-1.23	-0.001737
		VH	TN	1.04	0.001461
16QAM	LCH	VL	TN	-2.37	-0.003371
		VN	TN	-2.24	-0.003180
		VH	TN	-1.94	-0.002760
	MCH	VL	TN	-2.44	-0.003444
		VN	TN	-3.34	-0.004725
		VH	TN	-2.54	-0.003586
	HCH	VL	TN	-1.85	-0.002601
		VN	TN	0.51	0.000719
		VH	TN	-0.18	-0.000255
Temperature					
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)
16QAM	LCH	VN	-30	-0.27	-0.000383
		VN	-20	-1.46	-0.002072
		VN	-10	-2.68	-0.003808
		VN	0	-3.67	-0.005210
		VN	10	-2.03	-0.002881
		VN	20	-3.91	-0.005551
		VN	30	-0.35	-0.000504
		VN	40	0.18	0.000255
		VN	50	1.95	0.002768
	MCH	VN	-30	-1.52	-0.002145
		VN	-20	-2.18	-0.003082
		VN	-10	-1.07	-0.001515
		VN	0	-2.01	-0.002848
		VN	10	-2.16	-0.003048
		VN	20	-2.85	-0.004033
		VN	30	-1.61	-0.002277
		VN	40	1.69	0.002395
		VN	50	0.54	0.000762
	HCH	VN	-30	-0.04	-0.000050
		VN	-20	-1.48	-0.002082
		VN	-10	-2.28	-0.003204
		VN	0	-1.28	-0.001799
		VN	10	-0.68	-0.000958

QPSK		VN	20	-0.48	-0.000669
		VN	30	-1.62	-0.002275
		VN	40	0.86	0.001203
		VN	50	0.54	0.000755
	LCH	VN	-30	-0.04	-0.000055
		VN	-20	-1.83	-0.002597
		VN	-10	-2.36	-0.003354
		VN	0	-3.48	-0.004948
		VN	10	-2.07	-0.002941
		VN	20	-3.94	-0.005593
		VN	30	-1.03	-0.001469
		VN	40	0.02	0.000021
		VN	50	1.47	0.002092
	MCH	VN	-30	-1.73	-0.002452
		VN	-20	-1.33	-0.001880
		VN	-10	-0.87	-0.001236
		VN	0	-2.96	-0.004180
		VN	10	-2.56	-0.003621
		VN	20	-2.09	-0.002954
		VN	30	-1.16	-0.001633
		VN	40	1.09	0.001543
	HCH	VN	50	0.85	0.001200
		VN	-30	0.31	0.000430
		VN	-20	-1.09	-0.001530
		VN	-10	-1.93	-0.002720
		VN	0	-1.58	-0.002217
		VN	10	-0.61	-0.000864
		VN	20	0.26	0.000359
		VN	30	-1.00	-0.001410
		VN	40	0.05	0.000065
		VN	50	0.34	0.000485

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