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TEST REPORT

Application No.:	SZEM2009009325CR			
Applicant:	Shenzhen Macross Automation Technology Co., Ltd.			
Address of Applicant:	Room 301-3, #5 Building, Jianghao Technical Park, Bantian St. Longgang District Shenzhen China			
Manufacturer:	Shenzhen Macross Automation Technology Co., Ltd.			
Address of Manufacturer:	Room 301-3, #5 Building, Jianghao Technical Park, Bantian St. Longgang District Shenzhen China			
Factory:	Shenzhen Macross Automation Technology Co., Ltd.			
Address of Factory:	Room 301-3, #5 Building, Jianghao Technical Park, Bantian St. Longgang District Shenzhen China			
Equipment Under Test (EUT):			
EUT Name:	Digital Wireless Real-time Two-Way Intercom			
Model No.:	HY-616S, MC-616S 🔺			
*	Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.			
Trade mark:	HOSMART, eMACROS			
FCC ID:	2AXOF-616S			
Standards:	47 CFR Part 15, Subpart D			
Date of Receipt:	2020-09-16			
Date of Test:	2020-09-25 to 2020-10-16			
Date of Issue:	2020-10-22			
Test Result:	Pass*			

* In the configuration tested, the EUT complied with the standards specified above.

Keny. XN

Keny Xu EMC Laboratory Manager



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Revision Record							
Version	VersionChapterDateModifierRemark						
01		2020-10-22		Original			

Authorized for issue by:		
	Vincent Chen	
	Vincent Chen /Project Engineer	
	Evic Fu	
	Eric Fu /Reviewer	



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2 Test Summary

Test Item	FCC Test Requirement	Result
Antenna Requirement	15.317;15.203	Pass
Power Line Conducted Emission	15.207(a)	Pass
Digital Modulation Techniques	15.319(b)	Pass
Channel Frequencies	15.303	Pass
Automatic discontinuation of transmission	15.319(f)	Pass
Emission Bandwidth	15.323(a)	Pass
In-band emissions	15.323(d)	Pass
Out-of-band emissions	15.323(d)	Pass
Peak Transmit Power and Antenna Gain	15.319(c)(e); 15.31(e)	Pass
Power Spectral Density	15.319(d)	Pass
Carrier frequency stability	15.323(f)	Pass
Frame repetition stability	15.323(e)	Pass
Frame period and jitter	15.323(e)	Pass
Monitoring threshold, Least interfered channel	15.323(c)(2)(5)(9)	Pass
Monitoring of intended transmit window and maximum reaction time	15.323(c)(1)	Pass
Threshold monitoring bandwidth	15.323(c)(7)	Pass
Reaction time and monitoring interval	15.323(c)(1)(5)(7)	Pass
Access criteria test interval	15.323(c)(4)(6)	Pass
Access Criteria functional test	15.323(c)(4)(6)	Pass
Acknowledgements	15.323(c)(4)	Pass
Transmission duration	15.323(c)(3)	Pass
Dual access criteria	15.323(c)(10)	Pass
Alterative monitoring interval	15.323(c)(11)(12)	N/A ¹
Spurious Emissions (Radiated)	15.319(g); 15.209(a)	Pass

¹ The client declares that the tested equipment does not implement this provision

Remark:

Model No.: HY-616S, MC-616S

Only the model HY-616S was tested, since according to the declaration from the applicant, the electrical circuit design, layout, components used, internal wiring and functions were identical for all the above models, with only difference on model number and brands (HOSMART and eMACROS).



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4 General Information

4.1 Details of E.U.T.

Power supply:	Adapter:		
	Model: JHD-AP006U-050100BB-2		
	Input: AC100-240V, 50/60Hz 0.2A		
	Output: DC 5V, 1000mA		
	Recharge Battery:		
	DC 3.6V/4.2V, FST 18650-2500mAh		
Frequency Range:	1921.536 to 1928.448 MHz		
Number of Channels:	5 RF Channels, $5 \times 12 = 60$ TDMA Duplex Channels		
Type of Modulation:	Digital (Gaussian Frequency Shift Keying)		
Modulation Technique:	GFSK		
Antenna Connector:	None		
Antenna Gain:	3dBi (declare by Applicant)		
Number of Antennas:	1		
Antenna Diversity Supported:	Yes		
Hardware Version:	A02		
Software Version:	A02		

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Channel	Frequency
The Lowest channel(CH4)	1921.536 MHz
The Middle channel(CH2)	1924.992 MHz
The Highest channel(CH0)	1928.448 MHz

4.2 Test Environment and Mode

Operating Environment:			
Temperature:	23.5 °C		
Humidity:	52.5 % RH		
Atmospheric Pressure: 1002 mbar			
Test mode:			
Transmitting mode:	Keep the EUT in transmitting mode with modulation.		



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4.3 Description of Support Units

The EUT has been tested with associated equipment below:

Description	Manufacturer	Model No.	Serial No.	
Digital Wireless Real- time Two-Way Intercom	Shenzhen Macross Automation Technology Co., Ltd.	HY-616M	NA	

4.4 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	± 7.25 x 10 ⁻⁸
2	Duty cycle	± 0.37%
3	Occupied Bandwidth	± 3%
4	RF conducted power	± 0.75dB
5	RF power density	± 2.84dB
6	Conducted Spurious emissions	± 0.75dB
7	DE Dedicted server	± 4.5dB (Below 1GHz)
7	RF Radiated power	± 4.8dB (Above 1GHz)
0	Dedicted Cruvieus emission test	± 4.5dB (Below 1GHz)
8	Radiated Spurious emission test	± 4.8dB (Above 1GHz)
9	Temperature test	± 1 ℃
10	Humidity test	± 3%
11	Supply voltages	± 1.5%
12	Time	± 3%



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4.5 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China. 518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594 No tests were sub-contracted.

4.6 Test Facility

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

A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• VCCI

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• FCC – Designation Number: CN1178

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

Innovation, Science and Economic Development Canada

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

4.7 Deviation from Standards

None

4.8 Abnormalities from Standard Conditions

None



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Equipment List 5

Conducted Emissions at Mains Terminals (150kHz-30MHz)							
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date		
Shielding Room	ChangZhou ZhongYu	GB-88	SEM001-06	2019-06-13	2022-06-12		
Measurement Software	AUDIX	e3 V8.2014-6- 27	N/A	N/A	N/A		
Coaxial Cable	SGS	N/A	SEM024-01	2020-07-10	2021-07-11		
LISN	Rohde & Schwarz	ENV216	SEM007-01	2020-09-23	2021-09-22		
LISN	ETS-LINDGREN	3816/2	SEM007-02	2020-04-01	2021-03-31		
EMI Test Receiver	Rohde & Schwarz	ESCI	SEM004-02	2020-03-24	2021-03-23		
Digital Radiocommunication Tester	Rohde & Schwarz	CMD60	/	2020-09-23	2021-09-24		

Radiated Emissions (30MHz-1GHz)						
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date	
3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2020-07-19	2023-07-18	
Measurement Software	AUDIX	e3 V8.2014-6- 27	N/A	N/A	N/A	
Coaxial Cable	SGS	N/A	SEM025-01	2020-07-10	2021-07-11	
MXE EMI receiver	KEYSIGHT	N9038A	SEM004-15	2019-12-16	2020-12-15	
BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEM003-02	2019-05-24	2022-05-23	
Pre-amplifier	Agilent Technologies	8447D	SEM005-01	2020-04-01	2021-03-31	
Digital Radiocommunication Tester	Rohde & Schwarz	CMD60	/	2020-09-23	2021-09-24	

Radiated Spurious Emission						
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date	
3m Semi-Anechoic Chamber	AUDIX	N/A	SEM001-02	2018-03-13	2021-03-12	
Measurement Software	AUDIX	e3 V8.2014-6- 27	N/A	N/A	N/A	
Coaxial Cable	SGS	N/A	SEM026-01	2020-07-10	2021-07-11	
EXA Spectrum Analyzer	AgilentTechnologies Inc	N9010A	SEM004-12	2020-04-09	2021-04-08	
Horn Antenna (1-18GHz)	Rohde & Schwarz	HF907	SEM003-07	2018-04-13	2021-04-12	
Horn Antenna (15GHz-40GHz)	Schwarzbeck	BBHA 9170	SEM003-15	2017-10-17	2020-10-16	



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Pre-Amplifier (0.1-26.5GHz)	Compliance Directions Systems Inc.	PAP-0126	SEM004-11	2020-09-23	2021-09-24
Pre-amplifier (18-26GHz)	Rohde & Schwarz	CH14-H052	SEM005-17	2020-04-01	2021-03-31
Pre-amplifier (26GHz-40GHz)	Compliance Directions Systems Inc.	PAP-2640-50	SEM005-08	2020-04-01	2021-03-31
Digital Radio communication Tester	Rohde & Schwarz	CMD60	/	2020-09-23	2021-09-24
DC Power Supply	Zhao Xin	RXN-305D	SEM011-02	2020-09-23	2021-09-24

RF conducted test							
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. date	Cal. Due date		
DC Power Supply	ZhaoXin	RXN-305D	SEM011-02	2020-09-23	2021-09-22		
EXA Spectrum Analyzer	KEYSIGHT	N9010A	SEM004-12	2020-04-09	2021-04-08		
Signal Generator	Rohde & Schwarz	SML03	SEM006-02	2020-04-25	2021-04-26		
Power Meter	Rohde & Schwarz	NRVS	SEM014-02	2020-09-23	2021-09-24		
Spectrum Analyzer	Rohde & Schwarz	FSU43	SEM004-08	2020-04-01	2021-03-31		
Coaxial Cable	SGS	N/A	SEM031-01	2020-07-10	2021-07-11		
Digital Radiocommunication Tester	Rohde & Schwarz	CMD60	/	2020-09-23	2021-09-24		
Splitter	MACOM	2090-6214-00	SEL0226	2020-03-06	2021-03-07		
Signal Generator	Agilent	N5173B	SEM006-05	2020-09-23	2021-09-22		
Signal Generator	Rohde & Schwarz	SML02	SEM006-07	2020-09-23	2021-09-24		
Signal Generator	Rohde & Schwarz	SMB100A	SEM006-11	2020-04-01	2021-03-31		
Signal Generator	Agilent	N5171B	SEM006-13	2020-03-23	2021-03-22		



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General used equipment						
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date	
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-03	2020-09-25	2021-09-24	
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-04	2020-09-25	2021-09-24	
Humidity/ Temperature Indicator	Mingle	N/A	SEM002-08	2020-09-25	2021-09-24	
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2020-04-07	2021-04-06	



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Test results and Measurement Data 6

6.1 Antenna Requirement

Standard requirement:	47 CFR Part 15.317, 15.203		
15.203 requirement:			
An intentional radiator shall be	e designed to ensure that no antenna other than that furnished by the		
responsible party shall be use	d with the device. The use of a permanently attached antenna or of an		
antenna that uses a unique coupling to the intentional radiator, 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.			
EUT Antenna:			
The antenna is integrated on t	he main PCB and no consideration of replacement. The best case gain		
of the antenna is 3dBi.			

6.2 Digital Modulation Techniques

Standard requirement:	47 CFR Part 15.319(b)			
Requirement:				
All transmissions must use only digital modulation techniques.				
	The EUT uses Multi Carrier / Time Division Multiple Access / Time Division Duplex and Digital GFSK modulation. For further details see the operational description provided by the applicant.			



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6.3 Automatic discontinuation of transmission

Test Requirement:	47 CFR Part 15.319(f)
Test Method:	Declared by manufacture
Requirement:	The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude transmission of control and signaling information or use of repetitive codes used by certain digital technologies to complete frame or burst intervals.
Test Results:	Pass

The following tests simulate the reaction of the EUT in case of either absence of information to transmit or operational failure after a connection with the companion device is established.

Number	Test	EUT Reaction	Verdict
1	Power removed from EUT	A	Pass
2	Switch Off EUT	A	Pass
3	Hook-On by EUT	NA	Pass
4	Power Removed from Companion Device	A	Pass
5	Switch Off Companion Device	A	Pass
6	Hook-On by Companion Device	NA	Pass

A - Connection breakdown, Cease of all transmissions

B - Connection breakdown, EUT transmits control and signaling information

C - Connection breakdown, Companion Device transmits control and signaling information

N/A - Not Applicable (EUT/Companion Device does not have On/Off switch and cannot perform Hook-On) Note: For more information please refer to declaration letter.



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Test Requirement:	47 CFR Part 15.207					
Test Method:	ANSI C63.4: 2014					
Test Frequency Range:	150kHz to 30MHz					
Limit:		Limit (dBuV)				
	Frequency range (MHz)	Quasi-peak	Average			
	0.15-0.5	0.15-0.5 66 to 56* 56 to				
	0.5-5	56	46			
	5-30	60	50			
	* Decreases with the logarithn	n of the frequency.				
Test Procedure:	 The mains terminal disturb shielded room. The EUT was connected to Impedance Stabilization Nullinear impedance. The pow connected to a second LIS reference plane in the sam measured. A multiple sock power cables to a single LI exceeded. The tabletop EUT was place the ground reference plane EUT was placed on the ho The test was performed wi rear of the EUT shall be 0. plane. The vertical ground horizontal ground reference the boundary of the unit ur plane for LISNs mounted of distance was between the All other units of the EUT a m from the LISN 2. In order to find the maximul equipment and all of the in to ANSI C63.4: 2014 on co Remark: LISN=Read Leve 	ance voltage test was o AC power source thro etwork) which provides ver cables of all other u SN 2, which was bonde ine way as the LISN 1 for et outlet strip was used ISN provided the rating ced upon a non-metalling ced upon a non-metalling ced upon a non-metalling rizontal ground referent th a vertical ground referent th a vertical ground ref 4 m from the vertical gr reference plane was b e plane. The LISN 1 was noter test and bonded to on top of the ground ref closest points of the LI and associated equipm and emission, the relative terface cables must be ponducted measurement	bugh a LISN 1 (Line a $50\Omega/50\mu$ H + 5Ω units of the EUT were d to the ground or the unit being d to connect multiple of the LISN was not c table 0.8m above g arrangement, the ice plane, erence plane. The round reference onded to the as placed 0.8 m from o a ground reference erence plane. This SN 1 and the EUT. ent was at least 0.8 re positions of e changed according t.			

6.4 Conducted Emissions



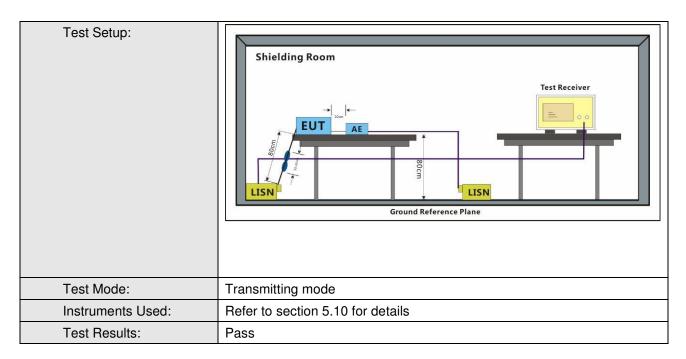
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Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.



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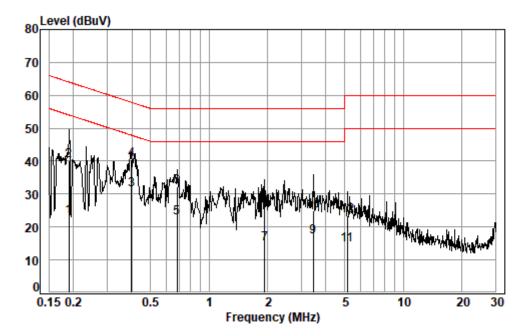
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Line:Live Line



Site :	Shielding	Room
Condition:	Line	
Job No. :	09325CR	
Test mode:	00	

SUB

	: 500	2						
		Cable	LISN	Read		Limit	0ver	
	Freq	Loss	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.1904	0.02	9.68	13.44	23.14	54.02	-30.88	Average
2	0.1904	0.02	9.68	30.33	40.03	64.02	-23.99	QP
3	0.3997	0.05	9.68	21.47	31.20	47.86	-16.66	Average
4	0.3997	0.05	9.68	30.67	40.40	57.86	-17.46	QP
5	0.6863	0.07	9.69	13.10	22.86	46.00	-23.14	Average
6	0.6863	0.07	9.69	22.60	32.36	56.00	-23.64	QP
7	1.9386	0.16	9.75	5.13	15.04	46.00	-30.96	Average
8	1.9386	0.16	9.75	16.26	26.17	56.00	-29.83	QP
9	3.4356	0.16	9.77	7.05	16.98	46.00	-29.02	Average
10	3.4356	0.16	9.77	15.13	25.06	56.00	-30.94	QP
11	5.1663	0.17	9.83	4.45	14.45	50.00	-35.55	Average
12	5.1663	0.17	9.83	13.46	23.46	60.00	-36.54	QP

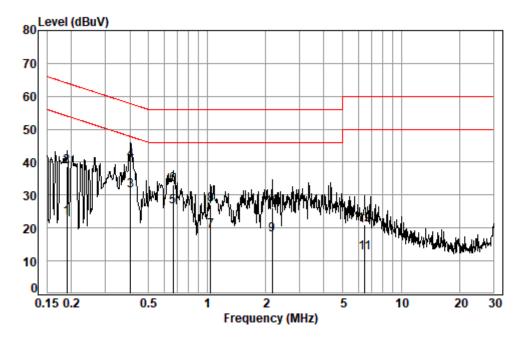




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Line:Neutral Line

Shenzhen Br



Site :	Shielding	Room
Condition:	Neutral	
Job No. :	09325CR	
Test mode:	00	

	: SUI	3						
		Cable	LISN	Read		Limit	0ver	
	Freq	Loss	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.1904	0.02	9.66	13.37	23.05	54.02	-30.97	Average
2	0.1904	0.02	9.66	29.03	38.71	64.02	-25.31	QP
3	0.4040	0.05	9.67	21.65	31.37	47.77	-16.40	Average
4	0.4040	0.05	9.67	30.69	40.41	57.77	-17.36	QP
5	0.6683	0.07	9.68	16.73	26.48	46.00	-19.52	Average
6	0.6683	0.07	9.68	23.38	33.13	56.00	-22.87	QP
7	1.0430	0.09	9.69	9.28	19.06	46.00	-26.94	Average
8	1.0430	0.09	9.69	17.24	27.02	56.00	-28.98	QP
9	2.1668	0.16	9.74	8.01	17.91	46.00	-28.09	Average
10	2.1668	0.16	9.74	16.27	26.17	56.00	-29.83	QP
11	6.4882	0.17	9.94	2.43	12.54	50.00	-37.46	Average
12	6.4882	0.17	9.94	10.78	20.89	60.00	-39.11	QP





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6.5 Peak Power Output

Test Requirement:	47 CFR Part 15.319(c)(e), 15.31(e)				
Test Method:	ANSI C63.17: 2013				
Limit:	Peak transmit power shall not exceed 100 microwatts multiplied by the square root of the emission bandwidth in Hertz.				
	The peak transmit power shall be reduced by the amount in decibels that the maximum directional gain of the antenna exceeds 3dBi.				
Test Procedure:	RBW: ≥ Emission bandwidth				
	Video bandwidth: ≥ RBW				
	Span: Zero				
	Center frequency: Nominal center frequency of transmit carrier				
	Amplitude scale: Log (linear may be used if analyzer has sufficient linear dynamic range and accuracy)				
	Detection: Peak detection				
	Trigger: Video				
	Sweep rate: Sufficiently rapid to permit the transmit pulse to be resolved accurately				
Test Setup:	CMD60 SA Spliter				
	EUT				
Test Mode:	Transmitting mode				
Instruments Used:	Refer to section 5.0 for details				

Channel	Frequency (MHz)	Measured Peak Transmit	Limit	Results
		Power (dBm)	(dBm)	
Lowest	1921.536	20.56	20.84	Pass
Middle	1924.992	20.52	20.84	Pass
Highest	1928.448	20.48	20.84	Pass

The plots of peak transmit power are saved as below.



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Plots of peak transmit power:

Lowest channel, Traffic carrier

	- 6 - X -
RF 50 Ω ALIGN OFF 03:12:47 PM Sep 26,2020 Set 3.50 dB #Avg Type: Log-Pwr TRACE 1.2 3 4 5 6	plitude
PNO: Fast +++ Trig: Video Avg Hold: 100/100 TYPE M	xis Unit
Ref Offset 3.5 dB Mkr1 0.000 s Ref 23.50 dBm 20.563 dBm	dBm
Ref l	LvI Offset 3.50 dB
	Internal
	Preamp >
ไม่สุขางหน้าที่มีของมีหมายการแห่งการแห่งการและการเป็นการและการเป็นสุขางสามารถเป็นสุขางสามารถไม่สามารถไม่สามารถ 	
	More
1.921536000 GHz Span 0 Hz 3.0 MHz #VBW 3.0 MHz Sweep 1.000 ms (1001 pts)	2 of 2

Middle channel, Traffic carrier

	ectrum Analyzer - Swept SA						1			
Center F	RF 50 Ω AC req 1.924992000	GHz	SENSE	:INT	#Avg Type	ALIGN OFF : Log-Pwr	TRAC	E 1 2 3 4 5 6	Fr	equency
	Ref Offset 3.5 dB Ref 23.50 dBm	PNO: Fast ↔→ IFGain:Low	Trig: Video #Atten: 30 c	B	Avg[Hold:	100/100	DE Mkr1	е Трррррр 0.000 s 23 dBm		Auto Tune
13.5										Center Freq 4992000 GHz
3.50 -6.50									1.924	Start Freq 1992000 GHz
-16.5								TRIG LVL	1.92	Stop Freq 4992000 GHz
-36.5			4.gol,Jonniela)	hann and an	mulanter	physical flags and	manali	Just hardward black	3 <u>Auto</u>	CF Step .000000 MHz Man
-56.5									-	Freq Offset 0 Hz
	924992000 GHz		0.0.5411-				S	pan 0 Hz	Log	Scale Type Lin
Res BW 3	JU WIHZ	#VBW	3.0 MHz			Sweep 1.	000 ms (1001 pts)		
maa						STATUS				



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Highest channel, Traffic carrier

Ref Offset 35 dB 20.476 dBm 135 20.476 dBm 136 20.476 dBm 137 1.928448000 GHz 165 1.928448000 GHz 165 1.928448000 GHz 166 1.928448000 GHz 167 1.928448000 GHz 168 1.928448000 GHz 169 1.928448000 GHz 160 1.928448000 GHz 160 1.928448000 GHz 161 1.928448000 GHz 162 1.928448000 GHz 163 1.928448000 GHz 164 1.928448000 GHz 165 1.928448000 GHz 166 1.928448000 GHz 166 1.928448000 GHz 166 1.928448000 GHz 167 1.928448000 GHz 168 <		pectrum Analyzer - Swept SA				
PhO: Fast Trg: Video iFGaintLow AvgiHoid: 100/100 Trg: Video if Formula AvgiHoid: 100/100 Trg: Video if Formula Auto Tune 10 d B/div 199 Ref Offset 35 dB Ref 23.50 dBm Center Freq 1.928448000 GHz 365 Start Freq 1.928448000 GHz Start Freq 1.928448000 GHz Troo LV Start Freq 1.928448000 GHz 665 Start J/Log Start J/Log Start J/Log Start Freq 1.928448000 GHz 665 Start J/Log Start J/Log Start J/Log Start Freq 1.928448000 GHz 665 Start J/Log Start J/Log Start J/Log Start J/Log 665 Start J/Log Start J/Log Start J/Log Start J/Log 665 Start J/Log Start J/Log Start J/Log Start J/Log 665 Start J/Log Start J/Log Start J/Log Start J/Log 665 Start J/Log Start J/Log Start J/Log Start J/Log 665 Start J/Log Start J/Log Start J/Log Start J/Log 665 Start J/Log Start J/Log S					TRACE 1 2 3 4 5 6	Frequency
10 dB/div Ref 23.50 dBm 20.476 dBm 136 1 1 1 1 136 1 1 1 1 1 136 1 1 1 1 1 1 136 1 1 1 1 1 1 1 136 1			PNO: Fast +++ Trig: Video	Avg[Hold: 100/100	Mkr1 0.000 s	Auto Tune
135 Center Freq 136 Center Freq 137 Start Freq 138 Start Freq 148 Start Freq 149 Start Freq	10 dB/div	Ref 23.50 dBm			20.476 dBm	
6.60 Image: Constraint of the second of						Center Freq 1.928448000 GHz
26.5 Image: Constraint of the second of						Start Freq 1.928448000 GHz
-36.5 -36.5 <td< td=""><td></td><td></td><td></td><td></td><td>TRIG LVL</td><td>Stop Freq 1.928448000 GHz</td></td<>					TRIG LVL	Stop Freq 1.928448000 GHz
-46.5 -46.5						3.000000 MHz
-3653 -3653	-46.5		yranddheney affeliar	Harmentan market washeddad	un nurstangolusyofnitywildwigdy	
Center 1.928448000 GHz Res BW 3.0 MHz #VBW 3.0 MHz Sweep 1.000 ms (1001 pts)						0 Hz
Res BW 3.0 MHz #VBW 3.0 MHz Sweep 1.000 ms (1001 pts)						
			#VBW 3.0 MHz	Sweep	Span 0 Hz 1.000 ms (1001 <u>pts)</u>	
	MSG					





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6.6 Emission Bandwidth B

Test Requirement:	47 CFR Part 15.323(a)					
Test Method:	ANSI C63.17: 2013					
Limit:	The Emission Bandwidth B shall be larger than 50 kHz and less than 2.5 MHz.					
	No requirements for 6 and 12 dB Bandwidth, these values are only used for testing Monitoring Bandwidth if the Simple Compliance test fails (ANSI C63.17, clause 7.4).					
Test Procedure:	RBW: Approximately 1% of the emission bandwidth (a rough estimate may be obtained from peak power level measurement, or use manufacturer's declared value)					
	Video bandwidth: ≥ 3 × the RBW					
	Center frequency: Nominal center frequency of channel					
	Span: ≥ 2 × the expected emission bandwidth					
	Sweep time: Coupled to frequency span and RBW					
	Amplitude scale: Log					
	Detection: Peak detection with maximum hold enabled					
Test Setup:	CMD60 SA Spliter					
	EUT					
Test Mode:	Transmitting mode					
Instruments Used:	Refer to section 5.0 for details					

Test Results:

Channel	Frequency (MHz)	Emission Bandwidth B (MHz)
Lowest	1921.536	1.46
Middle	1924.992	1.47
Highest	1928.448	1.47



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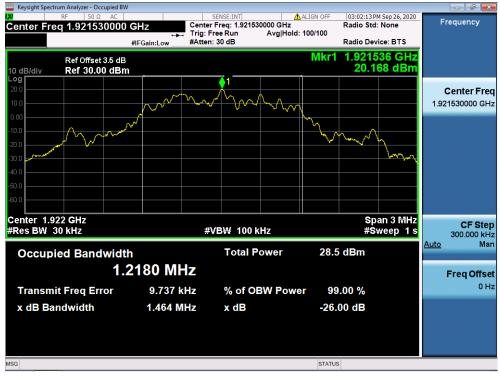
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Emission Bandwidth:

Lowest channel:



Middle channel:





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6.7 Power Spectral Density

Test Requirement:	47 CFR Part 15.319(d)					
Test Method:	ANSI C63.17: 2013					
Limit:	FCC:					
	Power spectral density shall not exceed 3 milliwatts in any 3 kHz bandwidth as measured with a spectrum analyzer having a resolution bandwidth of 3 kHz					
Test Procedure:	RBW: 3 kHz					
	Video bandwidth: ≥ 3 × RBW					
	Span: Zero span at frequency with the maximum level (frequency determined in 6.1.3 if the same type of signal (continuous versus burst) was used in 6.1.3)					
	Center frequency: Spectral peak as determined in 6.1.3					
	Sweep time: For burst signals, sufficient to include essentially all of the maximum length burst at the output of a 3 kHz filter (e.g., maximum input burst duration plus 600 µs). For continuous signals, 20 ms.					
	Amplitude scale: Log power					
	Detection: Sample detection and averaged for a minimum of 100 sweeps					
	Trigger: External or internal					
Test Setup:	CMD60 Spliter EUT					
Test Mode:	Transmitting mode					
Instruments Used:	Refer to section 5.0 for details					

Test Results:

Channel	Frequency (MHz)	Power Spectral Density (dBm/3 kHz)	Limit (dBm/3 kHz)	Results
Lowest	1921.536	-5.14	4.8	Pass
Middle	1924.992	4.39	4.8	Pass
Highest	1928.448	3.90	4.8	Pass



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Power Spectral Density:

Lowest channel:







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Middle Channel:

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Keysight Spectrum Analyzer - Sv ent SA 03:36:10 PM Sep 26, 2020 ALIGN OF #Avg Type: RMS Avg|Hold: 100/100 RACE 1 2 3 4 5 6 TYPE MWWWW DET PPPPPP Frequency Center Freq 1.924992000 GHz Trig: Free Run #Atten: 30 dB PNO: Wide ↔→ IFGain:Low Auto Tune Mkr1 1.925 004 GHz 6.365 dBm Ref Offset 3.5 dB Ref 23.50 dBm 10 dB/div **Center Freq** 1.924992000 GHz And a start and Start Freq 1.923492000 GHz **I** Stop Freq a the Appendia Party of the 1.926492000 GHz MM CF Step 300.000 kHz Man ٩Ŋ Auto Freq Offset Scale Type Center 1.924992 GHz #Res BW 3.0 kHz Span 3.000 MHz Log #VBW 10 kHz Sweep 316.3 ms (1001 pts)



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Highest channel:

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6.8 In-Band Unwanted Emissions, Conducted

Test Requirement:	47 CFR Part 15.323(d)				
Test Method:	ANSI C63.17: 2013				
Limit:	B < f ≤ 2B : at least 30 dB below max. permitted peak power				
	$2B < f \le 3B$: at least 50 dB below max. permitted peak power				
	$3B < f \le UPCS$ Band Edge : at least 60 dB below max. permitted peak power				
Test Procedure:	RBW: Approximately 1% of the emission bandwidth (B)				
	Video bandwidth: 3 × RBW				
	Sweep time: The sweep time shall be sufficiently slow that the swept				
	frequency rate shall not exceed one RBW per three transmit bursts.				
	Number of sweeps: Sufficient to stabilize the trace				
	Amplitude scale: Log				
	Detection: Peak detection and max hold enabled				
	Span: Approximately equal to 3.5 B				
Test Setup:	CMD60 Spliter SA EUT				
Test Mode:	Transmitting mode				
	Transmitting mode				
Instruments Used:	Refer to section 5.0 for details				

Test Results:

Channel	Frequency (MHz)	Results
Lowest	1921.536	Pass
Middle	1924.992	Pass
Highest	1928.448	Pass

The plots of the unwanted emission inside the sub-band are as below.



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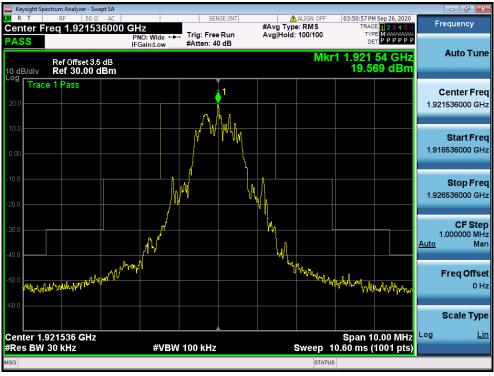
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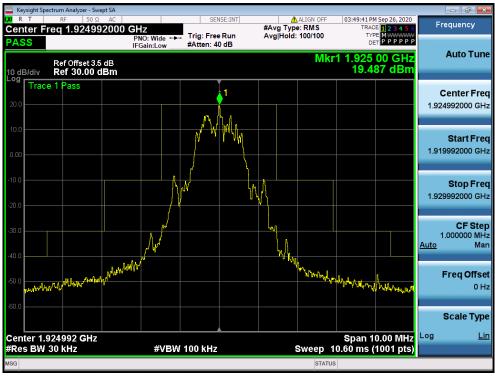
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Test Plot of In-Band Unwanted Emissions:

Lowest channel:



Middle channel:





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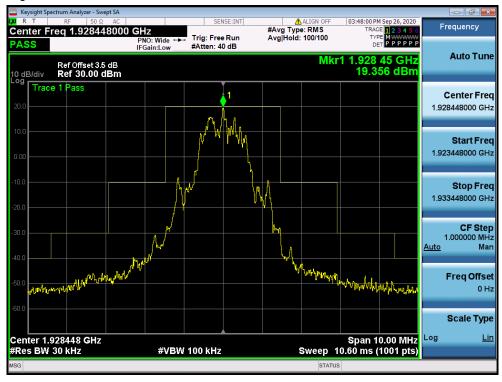
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Highest channel:

Shenzhen Bra







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6.9 Out-of-band Emissions, Conducted

Test Requirement:	47 CFR Part 15.323(d)					
Test Method:	ANSI C63.17: 2013					
Limit:	$f \le 1.25$ MHz outside UPCS band : ≤ -9.5 dBm					
	$1.25MHz \le f \le 2.5MHz$ outside UPCS band : $\le -29.5 dBm$					
	$f \ge 2.5MHz$ outside UPCS band : $\le -39.5 dBm$					
Test Procedure:	RBW: Approximately 1% of the emission bandwidth (B)					
	Video bandwidth: 3 × RBW					
	Sweep time: The sweep time shall be sufficiently slow that the swept					
	frequency rate shall not exceed one RBW per three transmit bursts.					
	Number of sweeps: Sufficient to stabilize the trace					
	Amplitude scale: Log					
	Detection: Peak detection and max hold enabled					
	Span: Approximately equal to 3.5 B					
Test Setup:	CMD60 Spliter SA					
Test Meder						
Test Mode:	Transmitting mode					
Instruments Used:	Refer to section 5.0 for details					

Test Results:

Channel	Frequency (MHz)	Results
Lowest	1921.536	Pass
Middle	1924.992	Pass
Highest	1928.448	Pass

The plots of the unwanted emission inside the sub-band are as below.



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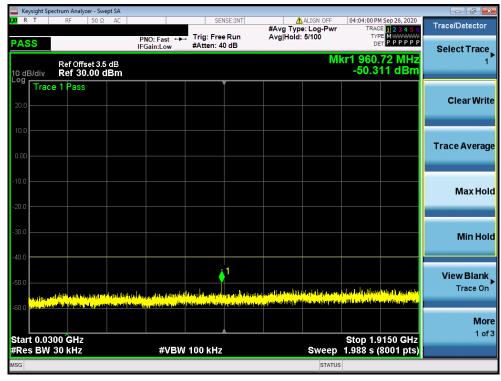
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Test Plot of Out-of-Band Unwanted Emissions Lowest Channel:





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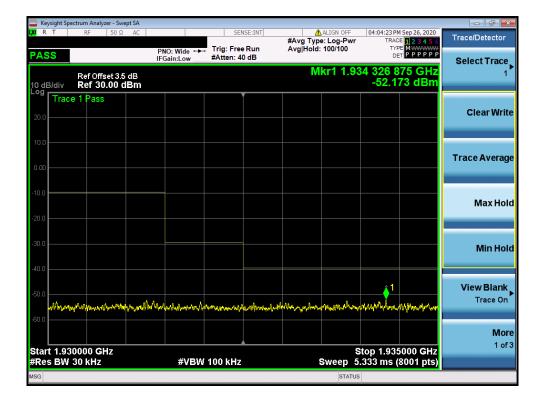


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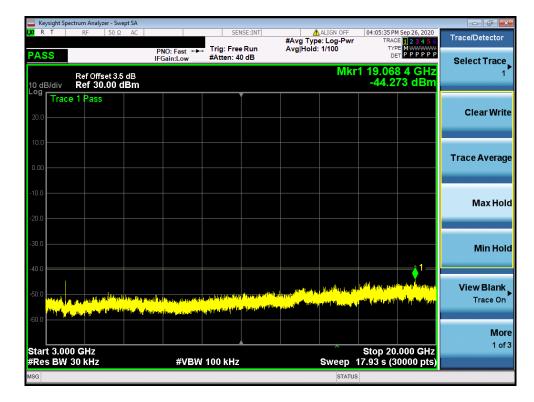
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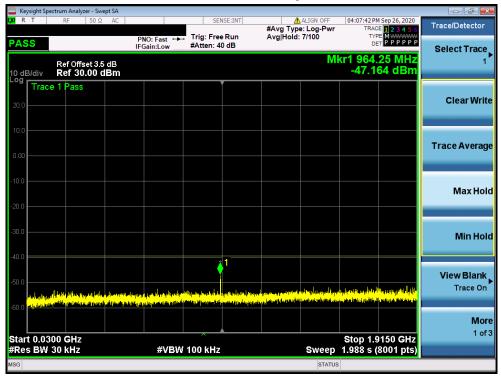
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Test Plot of Out-of-Band Unwanted Emissions Highest Channel:





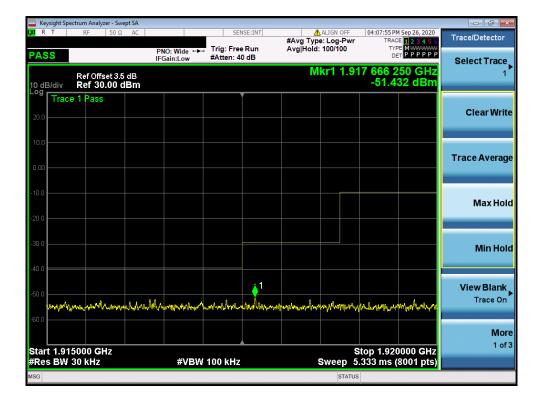
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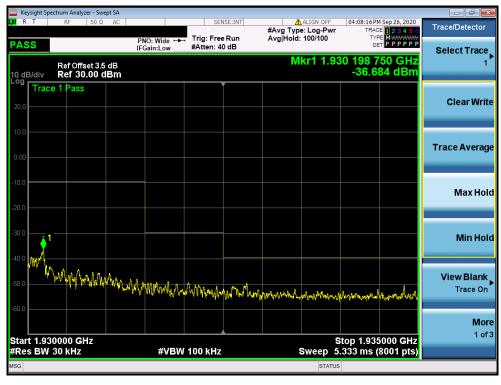
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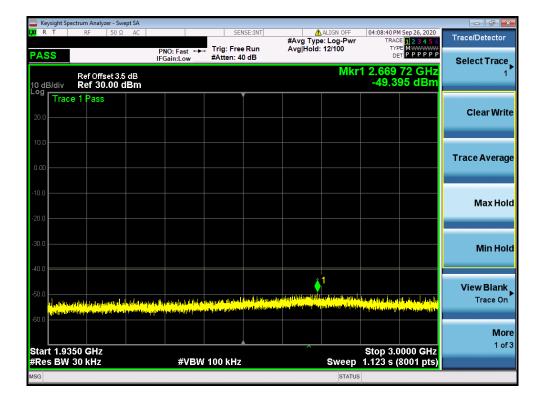
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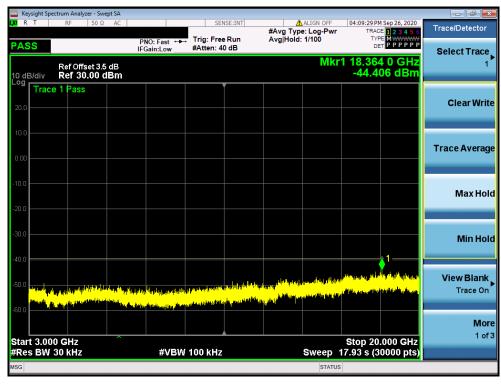
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6.10 Carrier Frequency Stability

Test Requirement:	47 CFR Part 15.323(f)				
Test Method:	ANSI C63.17: 2013				
Limit:	maintained within +/-10 ppm at the following conditions:				
	1. Over 1 hour at nominal supply voltage and a temperature of +20 $^{\circ}$ C;				
	 2. Over a variation in the primary supply voltage of 85 % to 115 % of nominal supply voltage at a temperature of +20 ℃. This test does not apply to an EUT that is only powered by battery for operation; 3. Over a temperature variation of -20 ℃ to +50 ℃ or at extreme temperatures as declared by manufacturer, and at nominal supply voltage. 				
Test Procedure:	Measurements are made in accordance with ANSI C63.17 sub-clause 6.2.1 The EUT and CMD60 is connected with shielded coaxial cable. The EUT is controlled by DECT Radio Communication Tester, CMD60, to use a fixed frequency channel during test as well as record the frequency offset. The transmission of EUT is in burst mode with pseudo-random data.				
Test Setup:	CMD60 Spliter SA				
Test Mode:	Transmitting mode				
Instruments Used:	Refer to section 5.0 for details				

Test Results:

Carrier Frequency Stability over time at nominal temperature:

Average Mean Carrier Frequency (MHz)	Max. Diff. (kHz)	Min. Diff. (kHz)	Max. Dev. (ppm)	Limit(ppm)	Results
1924.991881	0.32	-0.43	0.17	±10	Pass

Carrier Frequency Stability over Power Supply Voltage at Nominal Temperature

Voltage	Measured Carrier Frequency (MHz)	Difference (kHz)	Deviation (ppm)	Limit(ppm)	Results
Vnom	1924.991	0	0	±10	Pass
85% of Vnom	1924.991	0.0	0.0	±10	Pass
115% of Vnom	1924.991	0.0	0.0	±10	Pass



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Carrier Frequency Stability over reinperature.					
Temperature (°C)	Measured Carrier Frequency (MHz)	Difference (kHz)	Deviation (ppm)	Limit(ppm)	Results
-20 <i>°</i> C	1924.991	0.39	0.20	±10	Pass
+50°C	1924.991	-0.65	-0.34	±10	Pass

Carrier Frequency Stability over Temperature:

6.11 Frame Repetition Stability

Test Requirement:	47 CFR Part 15.323(e)	
Test Method:	ANSI C63.17: 2013	
Limit:	TDD:	
	EUT that implement time division for the purpose of maintaining a duplex connection shall maintain a frame-repetition rate whereby three times the standard deviation of the frequency stability shall not exceed 50 ppm, not including a shift of the mean;	
	TDMA:	
	EUT that further divides access in time shall maintain a frame-repetition rate whereby three times the standard deviation of the frequency stability shallnot exceed 10 ppm, not including a shift of the mean.	
Test Procedure:	X axis: Time	
	Time setting: Approximate frame period × 100	
	Y axis: Frequency	
	Center frequency: Nominal frame-repetition rate	
	Frequency span: Span large enough so that the full waveform is greater	
	than 50% but less than 100% of the display scale	
	Measurement time interval (gating time) :X (in units of frame period) where $X \le 1000$	
	Number of measurements: 1000/X (where X is the measurement interval in units of frame period)	
Test Setup:	CMD60 SA Spliter	
	EUT	
Test Mode:	Transmitting mode	
Instruments Used:	Refer to section 5.0 for details	
Fost Bosults:		

Test Results:

Maximum Frame Repetition Stability	Limit	Results
(ppm)	(ppm)	
<0.0001 and >-0.0001	±10	Pass



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6.12 Frame Period and Jitter

Test Requirement:	47 CFR Part 15.323(e)	
Test Method:	ANSI C63.17: 2013	
Limit:	Frame Period	20 or 10 ms
	Max Jitter	25 µs
	3 times St. Dev of Jitter	12.5 µs
Test Procedure:	Measurements are made in accordance with ANSI C63.17 sub-clause 6.2.3. Test setup is shown in section 3.2 Figure 3.2.1. A spectrum analyzer measures the time duration between the rising edges of two consecutive frames. The measurements are taken over 100,000 frames. These measurement values are used to compute mean value and the difference between any two consecutive frame periods. The mean value is the frame period.	
Test Setup:	CMD60 Splite	r SA
Test Mode:	Transmitting mode	
Instruments Used:	Refer to section 5.0 for details	

Test Results:

Measured Maximum Jitter (µs)	Limit (µs)	Results
-0.312	±25	Pass



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6.13 Monitoring Threshold, Least Interfered Channel

Test Requirement:	47 CFR Part 15.323(c)(2)(5)(9)	
Test Method: ANSI C63.17: 2013		
Limit:	Least Interfered Channel Procedure (LIC) may only be used by systems with more than 20 duplex system access channels. Systems with less than 20 duplex system access channels are not allowed to transmit when interferer level is above Lower Threshold.	
Test Procedure:	Please refer to accordance with ANSI C63.17 Clause 7.3.1, 7.3.3, 7.3.4	
Test Setup:	Spectrum Analyzer Multiport Combiner/splitter Network Shielded Enclosure Companio Device Shielded Coaxial Cable	
Test Mode:	Transmitting mode	
Instruments Used:	Refer to section 5.0 for details	

Calculation of Monitoring Threshold Limit:

Monitoring Threshold (T) \leq -174 + 10 log₁₀ B + M + P_{max} - P_{EUT} dBm

Where B =Measured Emission Bandwidth: 1.47x10⁶Hz

- M = 30 dB for Lower Monitoring Threshold (T_L), or
 - = 50 dB for Upper Monitoring Threshold (T_{U})
 - = 5 log₁₀ B 10 dBm

P_{EUT} = Measured Peak Transmit Power: 20.56dBm

Monitoring Threshold Limits:

Pmax

	FCC
Lower Monitoring Threshold ($T_L + U_M$) in dBm	-82.3
Upper Monitoring Threshold (T U + U M) in dBm	-62.3

NA - Not applicable



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Test Descriptions and Results:

Least Interfered Channel (LIC) Procedure Test, FCC 15.323(b), (c)(2) and (c)(5)

ANSI C63.17 clause 7.3.2 ref.	Observation	Results
b) f1 at TL + UM + 7 dB, f2 at TL + UM	Transmission always on f2	Pass
c) f1 at TL + UM, f2 at TL + UM +7 dB	Transmission always on f1	Pass
d) f1 at TL + UM + 1 dB, f2 at TL + UM - 6 dB	Transmission always on f2	Pass
e) f1 at TL + UM - 6 dB, f2 at TL + UM + 1 dB	Transmission always on f1	Pass

NA - Not applicable

Selected Channel Confirmation, FCC 15.323(c)(1) and (5)

ANSI C63.17 clause 7.3.3	Observation	Results
b) Shall not transmit on f1	EUT transmits on f2	Pass
d) Shall not transmit on f2	EUT transmits on f1	Pass



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Test Requirement:	47 CFR Part 15.323(c)(7)	
Test Method:	ANSI C63.17: 2013	
Limit:	The monitoring system bandwidth must be equal to or greater than the emission bandwidth of the intended transmission.	
Test Procedure:	Please refer to accordance with ANSI C63.17 Clause 7.4.1	
Test Setup:	Spectrum Analyzer Multichannel Interference Generator Network Shielded Enclosure Companior Device Shielded Coaxial Cable	
Test Mode:	Transmitting mode	
Instruments Used:	Refer to section 5.0 for details	

6.14 Threshold Monitoring Bandwidth

Test Results:

Test performed	Observation	Results
Simple Compliance test, at ±30% of B	N/A	N/A
More Detailed Test, at ±6 dB points	N/A	N/A
More Detailed Test, at ±12 dB points	N/A	N/A

NA - Not applicable

*Remarks: Detailed Compliance Test was used to show the compliance of the EUT.

The more detailed test must be pass at both the -6 and -12dB points if the Simple Compliance test fails.

Comment: The manufacturer declares that the tested EUT uses the same receiver for monitoring and communication, this test is therefore not required



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6.15 Reaction Time and Monitoring Interval

Test Requirement:	47 CFR Part 15.323(c) (1) (5) (7)
Test Method:	ANSI C63.17: 2013
Limit:	The maximum reaction time must be required to be less than 50 µs.
	If a signal is detected that is 6 dB or more above the applicable threshold level, the maximum reaction time shall not be required to be less than 35 μ s.
Test Procedure:	Please refer to accordance with ANSI C63.17 Clause 7.5
Test Setup:	Spectrum Analyzer Multichannel Interference Generator Shielded Enclosure Companio Device Shielded Enclosure Companio Device Shielded Enclosure Companio Device Shielded Enclosure Coaxial Cable
Test Mode:	Transmitting mode
Instruments Used:	Refer to section 5.0 for details

Test Results:

Pulse Width, ref. to ANSI C63.17 clause 7.5	Observation	Results
c) > largest of 50 μs	EUT transmits on f1	Pass
d) > largest of 35 µs	EUT transmits on f1	Pass

Comment: Since B is larger than 1.25 MHz the test was performed with pulse lengths of 50 µs and 35 µs.



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6.16 Time and Spectrum Window Access Procedure

Test Requirement:	47 CFR Part 15.323(c) (4) (6)
Test Method:	ANSI C63.17: 2013
Limit:	Once access to specific combined time and spectrum windows is obtained an acknowledgment from a system participant must be received by the initiating transmitter within one second or transmission must cease. Periodic acknowledgments must be received at least every 30 seconds or transmission must cease. Channels used exclusively for control and signaling information may transmit continuously for 30 seconds without receiving an acknowledgment, at which time the access criteria must be repeated.
	If the selected combined time and spectrum windows are unavailable, the device may either monitor and select different windows or seek to use the same windows after waiting an amount of time, randomly chosen from a uniform random distribution between 10 and 150 milliseconds, commencing when the channel becomes available.
Test Procedure:	Please refer to accordance with ANSI C63.17 Clause 8.1.1, 8.2.1; 8.1.2 or 8.1.3.
Test Setup:	Spectrum Analyzer Multichannel Interference Generator Shielded Enclosure Companior Device Shielded Coaxial Cable
Test Mode:	Transmitting mode
Instruments Used:	Refer to section 5.0 for details



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Test results:

		1
Access Criteria, ref. to ANSI C63.17 clause	Observation	Results
8.1.1, 8.2.1		
b) Check that the EUT transmits on the	EUT transmits on the	Pass
interference free time-slot	interference free time-slot	
b) The EUT must terminate or pause in its repetitive transmission of the control and signalling channel on the open channel to repeat	Transmission paused every 1.08 s	Pass
the access criteria not less frequently than every		
30 s		

If FCC 15.323(c)(6) option, If Random Waiting Interval is NOT implemented

Access Criteria, ref. to ANSI C63.17 clause 8.1.2	Observation	Results
 b) Check that the EUT changes to an interference-free slot when interference is introduced on the time slot in use 	EUT changes to the interference-free time-slot, and stays there	Pass

If FCC 15.323(c)(6) option, Only if Random Waiting Interval is implemented

Access Criteria, ref. to ANSI C63.17 clause 8.1.3	Observation	Results
b-d) Check that the EUT uses random waiting	N/A	N/A
interval before continuing transmission on an interfered time slot		

Comment: The tested EUT does not support the Random Waiting Interval option.



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6.17 Acknowledgements and Transmission Duration

Test Requirement:	47 CFR Part 15.323(c) (3) (4)	
Test Method:	ANSI C63.17: 2013	
Limit:	Occupation of the same combined time and spectrum windows by a device or group of cooperating devices continuously over a period of time longer than 8 hours is not permitted without repeating the access criteria.	
	Once access to specific combined time and spectrum windows is obtained an acknowledgement from a system participant must be received by the initiating transmitter within one second or transmission must cease.	
	Periodic acknowledgements must be received at least every 30 seconds or transmission must cease. Channels used exclusively for control and signaling information may transmit continuously for 30 seconds without receiving an acknowledgement, at which time the access criteria must be repeated.	
Test Procedure:	Please refer to accordance with ANSI C63.17 Clause 8.2	
Test Setup:	CMD60 SA Spliter	
	EUT	
Test Mode:	Transmitting mode	
Instruments Used:	Refer to section 5.0 for details	



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Test results:

Acknowledgements

Timing for EUTs using control and signaling channel type transmissions:

Conditions	Transmission Duration (seconds)	Limit (seconds)	Results
Time needed to repeat access criteria	NA	30	Pass

Timing for EUTs using communications channel type transmissions:

Conditions	Transmission Duration (seconds)	Limit (seconds)	Results
Activate EUT w/ companion device off	NA	1	NA
Time needed to cease Traffic Channel	4.6	30	Pass

NA - Not applicable

Transmission Duration

Measured Maximum Transmission Duration	Limit	Results
(minutes)	(minutes)	
285	480	Pass



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6.18 Dual Access Criteria Check

Test Requirement:	47 CFR Part 15.323(c) (10)
Test Method:	ANSI C63.17: 2013
Limit:	An initiating device may attempt to establish a duplex connection by monitoring both its intended transmit and receive time and spectrum windows. If both the intended transmit and receive time and spectrum windows meet the access criteria, then the initiating device can initiate a transmission in the intended transmit time and spectrum window. If the power detected by the responding device can be decoded as a duplex connection signal from the initiating device, then the responding device may immediately begin transmitting on the receive time and spectrum window monitored by the initiating device.
Test Procedure:	Please refer to accordance with ANSI C63.17 Clause 8.3
Test Setup:	CMD60 Spliter EUT
Test Mode:	Transmitting mode
Instruments Used:	Refer to section 5.0 for details

Test results:

EUTs that implements the LIC procedure:

Test ref. to ANSI C63.17 clause 8.3.2	Observation	Results
b) EUT is restricted to a single carrier f1 for TDMA systems. The Test is Pass if EUT can transmit	EUT can transmit	Pass
c) d) Transmission on interference-free receive time/spectrum window	EUT transmits on interference free receive slot	Pass
e) f) Transmission on interference-free transmit time/spectrum window	EUT transmits on interference free transmit slot	Pass



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6.19 Radiated Spurious Emissions

Test Requirement:	47 CFR Part 15.319(g), 15.209(a)								
Test Method:	ANSI C63.4: 2014								
Test Site:	Measurement Distance:	3m (Semi-Aneo	choic Chambe	r)					
Receiver Setup:	Frequency	Detector	RBW	VBW	Remark				
	0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak				
	0.009MHz-0.090MHz	Average	10kHz	30kHz	Average				
	0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	Quasi-peak				
	0.110MHz-0.490MHz	Peak	10kHz	30kHz	Peak				
	0.110MHz-0.490MHz	Average	10kHz	30kHz	Average				
	0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak				
	30MHz-960MHz	Quasi-peak	100 kHz	300kHz	Quasi-peak				
	Above 960MHz	RMS	1MHz	3MHz	RMS				
Limit:	f ≤ 1.25MHz outside UP	CS band : ≤ -9.5	5dBm						
(Spurious Emissions)	1.25MHz ≤ f ≤ 2.5MHz outside UPCS band : ≤ -29.5dBm								
	$f \ge 2.5 MHz$ outside UPC FCC Rule 15.319(g) whi								



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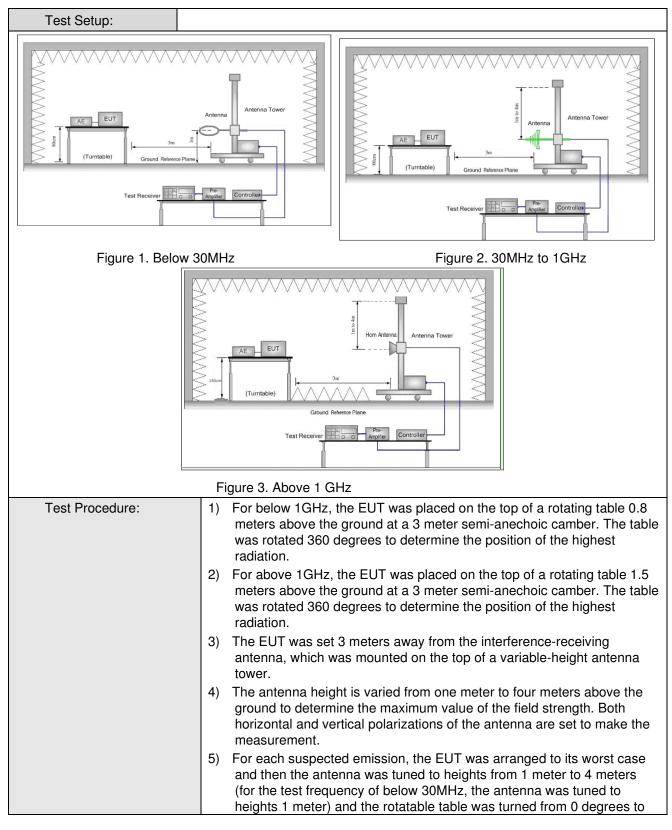
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	360 degrees to find the maximum reading.
	 The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
	 If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. Test the EUT in the lowest channel, the middle channel, the Highest channel
	9) The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, And found the X axis positioning which it is worse case.
	10) Repeat above procedures until all frequencies measured was complete.
Exploratory Test Mode:	Transmitting mode
Final Test Mode:	Pretest the EUT at Transmitting mode(c) and Charge+ Transmitting mode(a), found the Charge +Transmitting mode which it is worse case
	Only the worst case is recorded in the report.
Instruments Used:	Refer to section 5.0 for details



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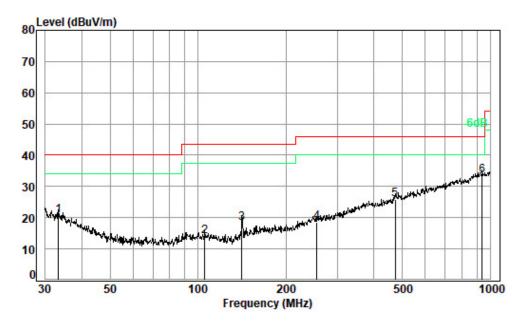
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The requirement of FCC Rule 15.209: Test Data: Below 1GHz: Mode:a; Polarization:Horizontal



Condition: 3m HORIZONTAL Job No. : 09325CR Test Mode: a

	Freq			Preamp Factor					Remark
-	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	-
1	33.33	0.64	21.10	27.72	26.58	20.60	40.00	-19.40	QP
2	105.64	1.11	13.83	27.57	26.63	14.00	43.50	-29.50	QP
3	141.33	1.15	13.58	27.38	30.90	18.25	43.50	-25.25	QP
4	254.73	1.68	18.15	26.98	25.68	18.53	46.00	-27.47	QP
5	473.83	2.45	23.87	27.70	27.14	25.76	46.00	-20.24	QP
6 pp	938.83	3.54	29.20	26.96	27.53	33.31	46.00	-12.69	QP



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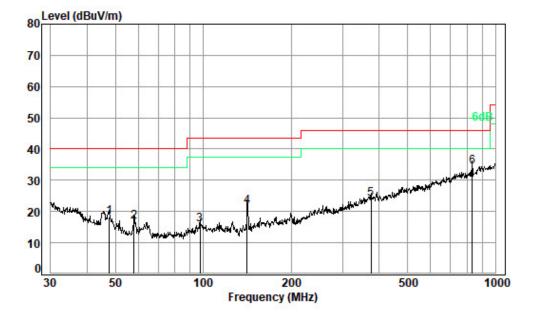
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Mode:a; Polarization:Vertical



Condition: 3m VERTICAL Job No. : 09325CR Test Mode: a

	Freq			Preamp Factor					Remark
_	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	47.66	0.70	14.77	27.69	30.52	18.30	40.00	-21.70	QP
2	58.00	0.78	13.20	27.67	30.31	16.62	40.00	-23.38	QP
3	97.46	1.15	13.80	27.61	28.38	15.72	43.50	-27.78	QP
4 5	141.33	1.15	13.58	27.38	34.30	21.65	43.50	-21.85	QP
5	374.62	2.23	22.20	27.27	26.74	23.90	46.00	-22.10	QP
6 pp	833.32	3.37	27.80	27.53	30.65	34.29	46.00	-11.71	QP



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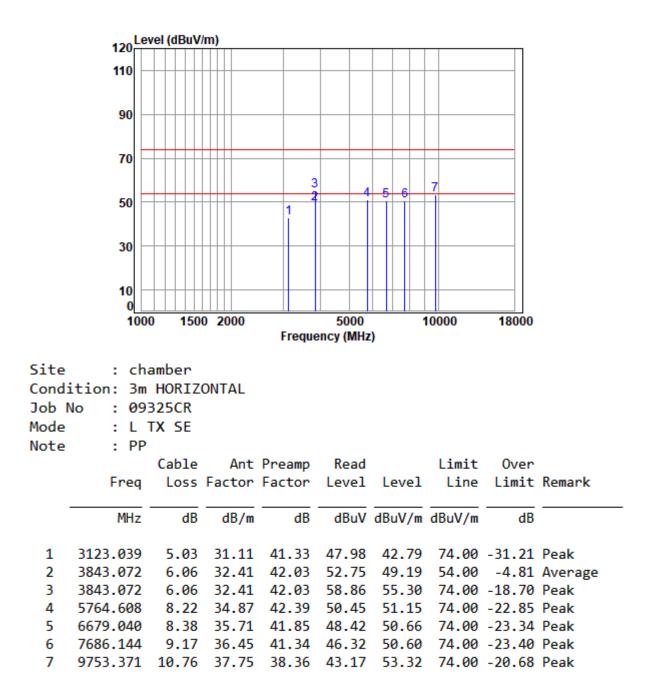
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Above 1GHz:

Mode:a; Polarization:Horizontal





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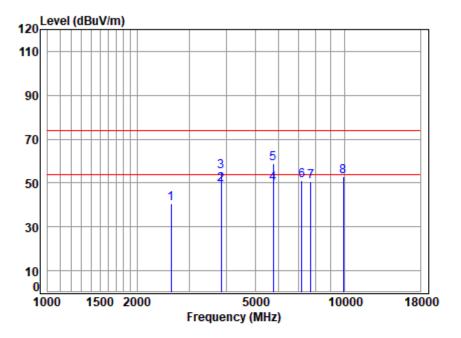
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Mode:a; Polarization:Vertical



Site :	chamber
Condition:	3m VERTICAL
Job No :	09325CR
Mode :	L TX SE
Note :	PP

	Freq	Cable Loss		Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2603.126	4.60	29.19	41.06	47.93	40.66	74.00	-33.34	Peak
2	3843.072	6.06	32.41	42.03	52.98	49.42	54.00	-4.58	Average
3	3843.072	6.06	32.41	42.03	58.68	55.12	74.00	-18.88	Peak
4	5764.608	8.22	34.87	42.39	48.84	49.54	54.00	-4.46	Average
5	5764.608	8.22	34.87	42.39	58.21	58.91	74.00	-15.09	Peak
6	7179.527	8.71	36.05	41.59	47.97	51.14	74.00	-22.86	Peak
7	7686.144	9.17	36.45	41.34	46.14	50.42	74.00	-23.58	Peak
8	9923.991	10.71	37.86	38.11	42.59	53.05	74.00	-20.95	Peak



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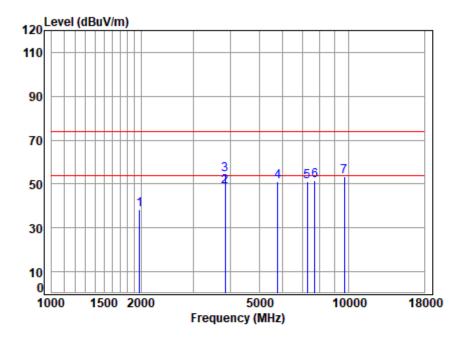
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Mode:a; Polarization:Horizontal



Site :	chamber
Condition:	3m HORIZONTAL
Job No :	09325CR
Mode :	M TX SE
Note :	PP
	Cable Ant

		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1978.082	3.64	27.72	40.78	47.80	38.38	74.00	-35.62	Peak
2	3849.984	6.06	32.41	42.03	52.48	48.92	54.00	-5.08	Average
3	3849.984	6.06	32.41	42.03	57.72	54.16	74.00	-19.84	Peak
4	5774.976	8.22	34.88	42.38	50.28	51.00	74.00	-23.00	Peak
5	7263.015	8.79	36.11	41.55	47.76	51.11	74.00	-22.89	Peak
6	7699.968	9.18	36.46	41.34	47.29	51.59	74.00	-22.41	Peak
7	9669.164	10.79	37.70	38.48	43.21	53.22	74.00	-20.78	Peak



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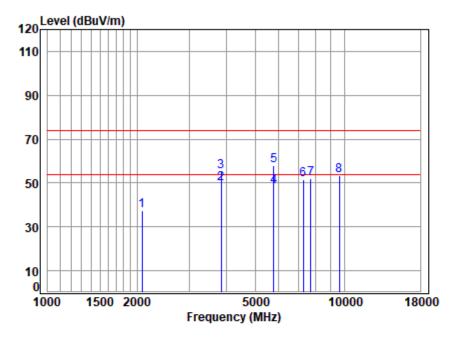
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Mode:a; Polarization:Vertical



Site :	chamber
Condition:	3m VERTICAL
Job No :	09325CR
Mode :	M TX SE
Note :	PP

	Freq	Cable Loss		Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2083.719	3.81	27.97	40.84	46.44	37.38	74.00	-36.62	Peak
2	3849.984	6.07	32.43	42.04	53.35	49.81	54.00	-4.19	Average
3	3849.984	6.07	32.43	42.04	58.54	55.00	74.00	-19.00	Peak
4	5774.976	8.23	34.89	42.38	47.65	48.39	54.00	-5.61	Average
5	5774.976	8.23	34.89	42.38	57.21	57.95	74.00	-16.05	Peak
6	7263.015	8.79	36.11	41.55	48.22	51.57	74.00	-22.43	Peak
7	7699.968	9.18	36.46	41.34	47.59	51.89	74.00	-22.11	Peak
8	9613.430	10.81	37.67	38.57	43.39	53.30	74.00	-20.70	Peak



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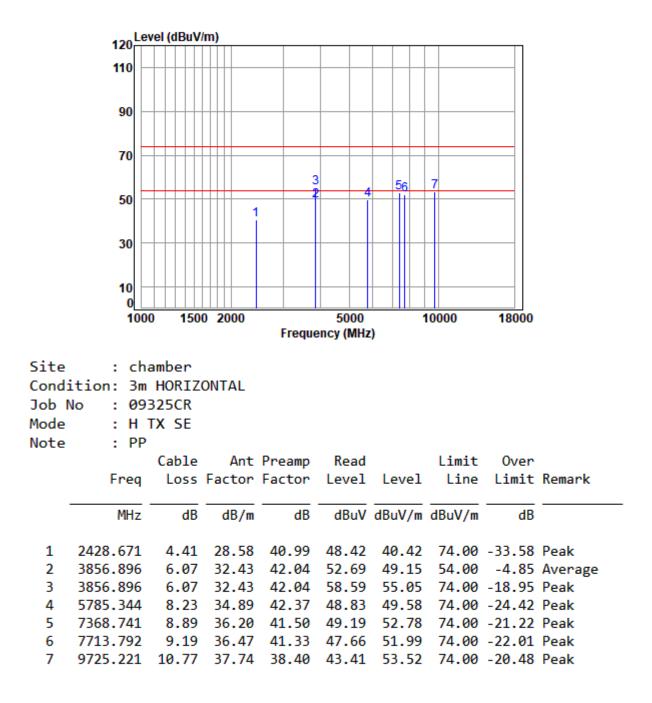
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Mode:a; Polarization:Horizontal





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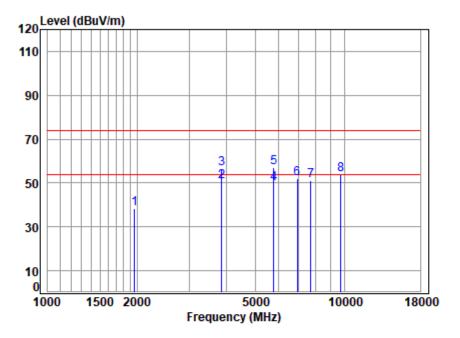
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Mode:a; Polarization:Vertical



Site :	chamber
Condition:	3m VERTICAL
Job No :	09325CR
Mode :	H TX SE
Note :	PP

	Freq	Cable Loss		Preamp Factor				Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1961.004	3.62	27.66	40.77	47.96	38.47	74.00	-35.53	Peak
2	3856.896	6.07	32.43	42.04	54.27	50.73	54.00	-3.27	Average
3	3856.896	6.07	32.43	42.04	59.96	56.42	74.00	-17.58	Peak
4	5785.344	8.23	34.89	42.38	48.87	49.61	54.00	-4.39	Average
5	5785.344	8.23	34.89	42.38	56.43	57.17	74.00	-16.83	Peak
6	6934.778	8.51	35.86	41.72	49.27	51.92	74.00	-22.08	Peak
7	7713.792	9.19	36.47	41.33	46.85	51.18	74.00	-22.82	Peak
8	9725.221	10.77	37.74	38.40	43.74	53.85	74.00	-20.15	Peak



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7 Photographs

7.1 EUT Test Setup

Please refer to setup photos.

7.2 EUT Constructional Details (EUT Photos) Please refer to external and internal photos for details.

- End of the Report -



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