FCC TEST REPORT

(PART 22)

REPORT NO.:	RF131213C05
MODEL NO.:	T00D
FCC ID:	MSQT00D
RECEIVED:	Dec. 13, 2013
TESTED:	Dec. 21, 2013 ~ Feb. 21, 2014
ISSUED:	Feb. 27, 2014

APPLICANT:	ASUSTek COMPUTER INC.
ADDRESS:	4F., No. 150, LI-TE Rd., PEITOU, TAIPEI 112, TAIWAN

ISSUED BY:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
LAB ADDRESS:	No. 47, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C.)
TEST LOCATION:	No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

This report should not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.

TABLE OF CONTENTS

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF131213C05	Original release	Feb. 27, 2014

1 CERTIFICATION

PRODUCT:	PadFone X
MODEL:	T00D
BRAND:	ASUS
APPLICANT:	ASUSTek COMPUTER INC.
TESTED:	Dec. 21, 2013 ~ Feb. 21, 2014
TEST SAMPLE:	Identical Prototype
STANDARDS:	**FCC PART 22, Subpart H**

The above equipment (model: T00D) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch,** and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : Vera Huang **, DATE :** Feb. 27, 2014

Vera Huang / Specialist

APPROVED BY : Sam chen **, DATE :** Feb. 27, 2014

Sam Chen / Senior Project Engineer

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 22 & Part 2			
STANDARD SECTION	**TEST TYPE**	**RESULT**	**REMARK**
2.1046 22.913 (a)	Effective radiated power	PASS	Meet the requirement of limit.
2.1055 22.355	Frequency Stability	PASS	Meet the requirement of limit.
2.1049	Occupied Bandwidth	PASS	Meet the requirement of limit.
22.917	Band Edge Measurements	PASS	Meet the requirement of limit.
2.1051 22.917	Conducted Spurious Emissions	PASS	Meet the requirement of limit.
2.1053 22.917	Radiated Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -13.66dB at 8364.00MHz.

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	150kHz~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	2.93 dB
	200MHz ~1000MHz	2.95 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

2.2 TEST SITE AND INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCI	100744	Apr. 15, 2013	Apr. 14, 2014
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 21, 2013	Dec. 20, 2014
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Mar. 25, 2013	Mar. 24, 2014
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-563	Nov. 01, 2013	Oct. 31, 2014
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Dec. 18, 2013	Dec. 17, 2014
Loop Antenna	3127-836	00099258	Aug. 09, 2013	Aug. 08, 2014
Preamplifier EMCI	8447D	2944A10631	Aug. 30, 2013	Aug. 29, 2014
Preamplifier EMCI	8449B	3008A1960	Aug. 30, 2013	Aug. 29, 2014
Preamplifier EMCI	EMC 330H	980112	Dec. 28, 2012	Dec. 27, 2013
Preamplifier EMCI	EMC 330H	980112	Dec. 27, 2013	Dec. 26, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309219/4	Oct. 18, 2013	Oct. 17, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250130/4	Oct. 18, 2013	Oct. 17, 2014
RF signal cable Worken	RG-213	NA	Nov. 07, 2013	Nov. 06, 2014
Software	E3 6.120103	NA	NA	NA
Antenna Tower MF	MFA-440H	NA	NA	NA
Turn Table MF	MFT-201SS	NA	NA	NA
Antenna Tower &Turn Table Controller MF	MF-7802	NA	NA	NA
Mini-Circuits Power Splitter	ZN2PD-9G	NA	Jul. 18, 2013	Jul. 17, 2014
JFW 20dB attenuation	50HF-020-SMA	NA	NA	NA
Communications Tester-Wireless	E5515C	MY52102544	Sep. 05, 2012	Sep. 04, 2014
Radio Communication Analyzer	MT8820C	6201300640	Aug. 01, 2013	Jul. 31, 2014

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 10.
3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 690701.
5. The IC Site Registration No. is IC 7450F-10.

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	PadFone X	
MODEL NO.	T00D	
POWER SUPPLY	5Vdc (adapter or host equipment) 3.8Vdc (battery)	
MODULATION TYPE	**GSM/GPRS**	GMSK
	EDGE	8PSK
	WCDMA	BPSK
	LTE	QPSK, 16QAM
FREQUENCY RANGE	**GSM/GPRS/EDGE**	824.2MHz ~ 848.8MHz
	WCDMA	826.4MHz ~ 846.6MHz
	LTE (Channel Bandwidth: 5MHz)	826.5MHz ~ 846.5MHz
	LTE (Channel Bandwidth: 10MHz)	829MHz ~ 844MHz
MAX. ERP POWER	**GSM**	760.33mW
	EDGE	325.09mW
	WCDMA	85.51mW
	LTE (Channel Bandwidth: 5MHz)	82.60mW
	LTE (Channel Bandwidth: 10MHz)	84.92mW
EMISSION DESIGNATOR	**GSM**	246KGXW
	EDGE	245KG7W
	WCDMA	4M20F9W
	LTE (Channel Bandwidth: 5MHz)	4M49G7D
	LTE (Channel Bandwidth: 10MHz)	8M94W7D
MULTI-SLOTS CLASS	10	
WCDMA RELEASE VERSION	8	
LTE CATEGORY	3	
ANTENNA TYPE	Fixed Internal Antenna	
I/O PORTS	Refer to users' manual	
DATA CABLE	Refer to NOTE as below	
ACCESSORY DEVICES	Refer to NOTE as below	

NOTE:

1. The EUT has following accessories.

ITEM	BRAND	MODEL	DESCRIPTION
AC Adapter 1	ASUS	AD897320	I/P: 100-240Vac, 50-60Hz, 0.3A O/P: 5Vdc, 2A
AC Adapter 2	ASUS	W12-010N3A	I/P: 100-240Vac, 50-60Hz, 0.3A O/P: 5Vdc, 2A
Li-ion Battery	ASUS	C11P1322	Rating: 3.8Vdc, 8.7Wh
Earphone 1	ASUS	OBOPRO2	1.27m cable
Earphone 2	ASUS	WW	1.25m cable
Earphone 3	ASUS	CHM-125STS02001	1.15m cable
USB cable 1	ASUS	AA780300	0.85m cable
USB cable 2	ASUS	L65U2008-CS-B	0.95m cable
USB cable 3	ASUS	CUHD003B-Y05-EF	0.95m cable
LCD Panel	SHARP	LS050T1SX04	--
Front Camera 1	AZWAVE	AM-2F024	--
Front Camera 2	Chicony	CCFD21220003871LH	--
Rear Camera	LARVIEW	CBAA0-010A	--
WLAN / BT Module	QUALCOMM	WIRELESS IC 79BWLNSP	--

2. The device has configurations as below.

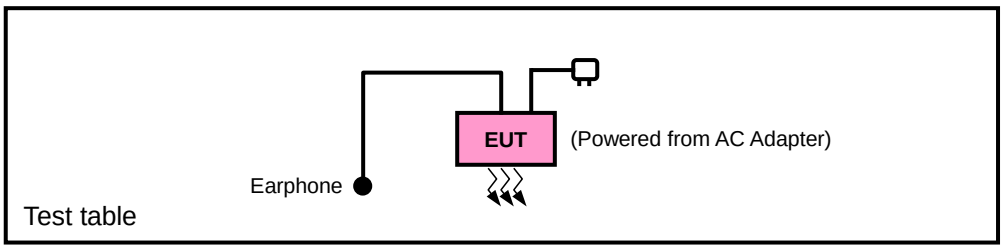
EUT CONFIGURE MODE	Description
A	EUT with Front Camera 1
B	EUT + PadFone Station with Front Camera 1
C	EUT with Front Camera 2
D	EUT + PadFone Station with Front Camera 2

3. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

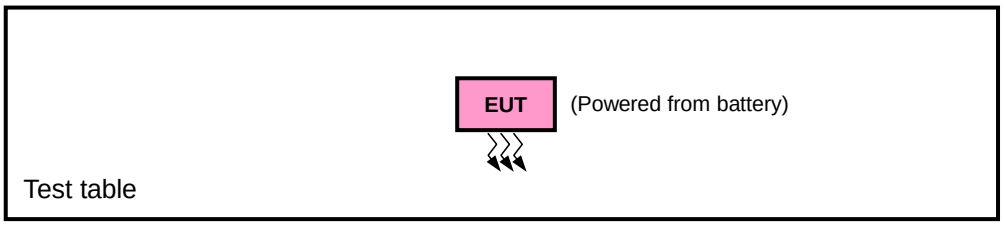
3.2 CONFIGURATION OF SYSTEM UNDER TEST

MODE A & C

FOR RADIATION EMISSION TEST

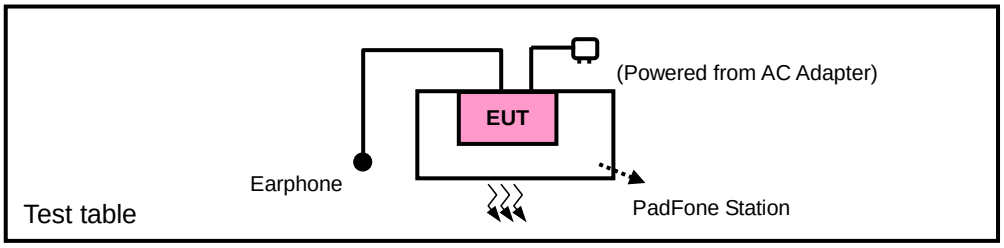


FOR E.R.P. TEST

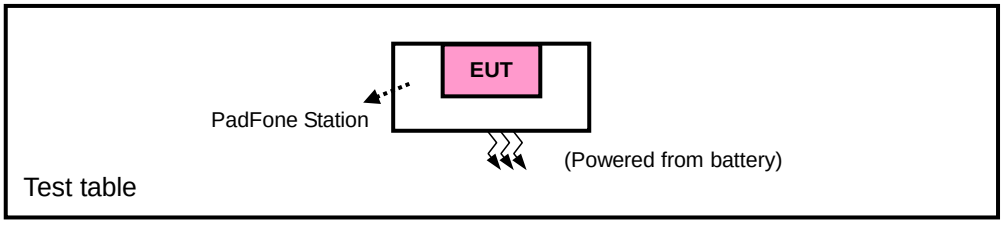


MODE B & D

FOR RADIATION EMISSION TEST



FOR E.R.P. TEST



3.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	PadFone X Station	ASUS	T00DP	N/A	N/A
2	Battery for PadFone X Station	ASUS	C11P1323	N/A	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	N/A
2	N/A

NOTE:

1. All power cords of the above support units are non shielded (1.8m).
2. Items 1-2 were provided by client.

3.4 TEST ITEM AND TEST CONFIGURATION

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports. The worst case was found as listed below for radiated emission. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE		BAND	AXIS FOR RADIATED EMISSION
A	ERP	GSM / EDGE / WCDMA / LTE	Y
	RADIATED EMISSION	GSM / EDGE / WCDMA	X
		LTE	Z
B	ERP	GSM / EDGE / WCDMA	Y
		LTE	X
	RADIATED EMISSION	GSM / EDGE / WCDMA / LTE	Y
C	RADIATED EMISSION	GSM	Y
		LTE	X
D	RADIATED EMISSION	GSM	Z
		LTE	X

GSM MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
A, B	ERP	128 to 251	128, 189, 251	GSM, EDGE
A	FREQUENCY STABILITY	128 to 251	189	GSM, EDGE
A	OCCUPIED BANDWIDTH	128 to 251	128, 189, 251	GSM, EDGE
A	BAND EDGE	128 to 251	128, 251	GSM, EDGE
A	CONDCUDETED EMISSION	128 to 251	189	GSM, EDGE
A, B	RADIATED EMISSION	128 to 251	189	GSM, EDGE
C, D	RADIATED EMISSION	128 to 251	189	GSM

WCDMA MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
A, B	ERP	4132 to 4233	4132, 4182, 4233	WCDMA
A	FREQUENCY STABILITY	4132 to 4233	4182	WCDMA
A	OCCUPIED BANDWIDTH	4132 to 4233	4132, 4182, 4233	WCDMA
A	BAND EDGE	4132 to 4233	4132, 4233	WCDMA
A	CONDCUDETED EMISSION	4132 to 4233	4182	WCDMA
A, B	RADIATED EMISSION	4132 to 4233	4182	WCDMA

LTE BAND 5 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A, B	ERP	20425 to 20625	20425, 20525, 20625	5MHz	QPSK, 16QAM	1 RB / 12 RB Offset
		20450 to 20600	20450, 20525, 20600	10MHz	QPSK, 16QAM	1 RB / 24 RB Offset
A	FREQUENCY STABILITY	20425 to 20625	20525	5MHz	QPSK	1 RB / 12 RB Offset
		20450 to 20600	20525	10MHz	QPSK	1 RB / 24 RB Offset
A	OCCUPIED BANDWIDTH	20425 to 20625	20425, 20525, 20625	5MHz	QPSK, 16QAM	25 RB / 0 RB Offset
		20450 to 20600	20450, 20525, 20600	10MHz	QPSK, 16QAM	50 RB / 0 RB Offset
A	BAND EDGE	20425 to 20626	20425	5MHz	QPSK	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			20600	5MHz	QPSK	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		20450 to 20600	20450	10MHz	QPSK	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			20600	10MHz	QPSK	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
A	CONDCUDETED EMISSION	20425 to 20625	20525	5MHz	QPSK	1 RB / 12 RB Offset
		20450 to 20600	20525	10MHz	QPSK	1 RB / 24 RB Offset
A, B	RADIATED EMISSION	20425 to 20625	20525	5MHz	QPSK	1 RB / 12 RB Offset
		20450 to 20600	20525	10MHz	QPSK	1 RB / 24 RB Offset
C, D	RADIATED EMISSION	20425 to 20625	20525	5MHz	QPSK	1 RB / 12 RB Offset

Note: This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

TEST CONDITION:

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
ERP	25deg. C, 59%RH	3.8Vdc	Howard Kao
FREQUENCY STABILITY	25deg. C, 59%RH	3.8Vdc	Howard Kao
OCCUPIED BANDWIDTH	25deg. C, 59%RH	3.8Vdc	Howard Kao
BAND EDGE	25deg. C, 59%RH	3.8Vdc	Howard Kao
CONDCUDETED EMISSION	25deg. C, 59%RH	3.8Vdc	Howard Kao
RADIATED EMISSION	25deg. C, 65%RH	120Vac, 60Hz	Anson Lin / Kay Wu / Peter Weng / Dylan Yang

3.5 EUT OPERATING CONDITIONS

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency

3.6 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC 47 CFR Part 2

FCC 47 CFR Part 22

ANSI/TIA/EIA-603-C 2004

NOTE: All test items have been performed and recorded as per the above standards.

4 TEST TYPES AND RESULTS

4.1 OUTPUT POWER MEASUREMENT

4.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

Mobile / Portable station are limited to 7 watts e.r.p.

4.1.2 TEST PROCEDURES

EIRP / ERP MEASUREMENT:

a. All measurements were done at low, middle and high operational frequency range. RBW and VBW is 1MHz for GSM, GPRS & EDGE, 5MHz for WCDMA and CDMA mode.

b. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.

c. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a tx cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value” of step b. Record the power level of S.G

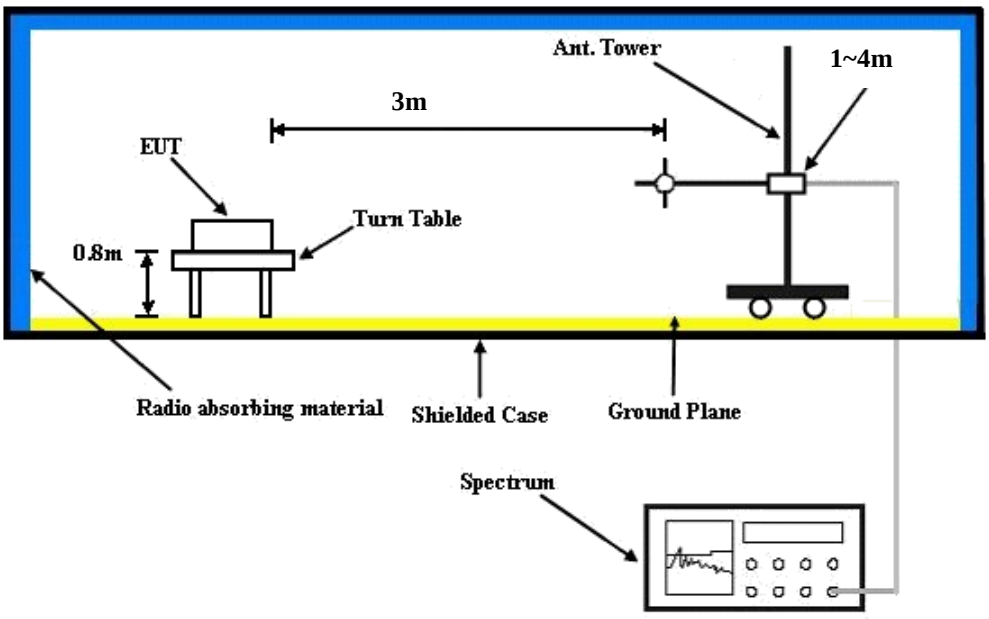
d. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.R.P power - 2.15dBi.

CONDUCTED POWER MEASUREMENT:

The EUT was set up for the maximum power with GSM, GPRS, EDGE, WCDMA & CDMA link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

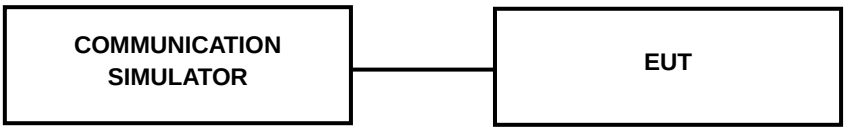
4.1.3 TEST SETUP

EIRP / ERP MEASUREMENT:



For the actual test configuration, please refer to the attached file (Test Setup Photo).

CONDUCTED POWER MEASUREMENT:



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.4 TEST RESULTS

CONDUCTED OUTPUT POWER (dBm)

Band	GSM850		
Channel	128	189	251
Frequency (MHz)	824.2	836.4	848.8
GSM (1 Uplink)	31.79	31.86	31.91
GPRS 8 (GMSK, 1 slot)	31.81	31.88	31.93
GPRS 10 (GMSK, 2 slot)	31.68	31.75	31.80
EDGE 8 (GMSK, 1 Uplink)	31.86	31.93	**31.98**
EDGE 10 (GMSK, 2 Uplink)	31.75	31.82	31.87
EDGE 8 (8PSK, 1 Uplink)	27.25	27.32	27.37
EDGE 10 (8PSK, 2 Uplink)	27.88	27.95	28.00

Band	WCDMA V		
Channel	4132	4182	4233
Frequency (MHz)	826.4	836.4	846.6
RMC 12.2K	22.33	22.63	**22.81**
HSDPA Subtest-1	21.51	21.81	21.99
HSDPA Subtest-2	21.52	21.82	22.00
HSDPA Subtest-3	21.18	21.48	21.66
HSDPA Subtest-4	21.17	21.47	21.65
HSUPA Subtest-1	21.00	21.30	21.48
HSUPA Subtest-2	20.44	20.74	20.92
HSUPA Subtest-3	20.65	20.95	21.13
HSUPA Subtest-4	20.72	21.02	21.20
HSUPA Subtest-5	21.50	21.80	21.98

Band / BW	Modulation	RB Size	RB Offset	Low CH 20425 Frequency 826.5 MHz	Mid CH 20525 Frequency 836.5 MHz	High CH 20625 Frequency 846.5 MHz	3GPP MPR (dB)
5 / 5M	QPSK	1	0	22.20	21.86	22.07	0
		1	12	**22.25**	22.09	22.24	0
		1	24	21.87	22.08	21.98	0
		12	0	21.23	20.98	21.16	1
		12	6	21.12	20.95	21.21	1
		12	13	21.03	21.00	20.99	1
		25	0	21.11	20.97	21.13	1
	16QAM	1	0	21.22	20.88	21.09	1
		1	12	21.27	21.11	21.26	1
		1	24	20.89	21.10	21.00	1
		12	0	20.25	20.00	20.18	2
		12	6	20.14	19.97	20.23	2
		12	13	20.05	20.02	20.01	2
		25	0	20.13	19.99	20.15	2

Band / BW	Modulation	RB Size	RB Offset	Low CH 20450 Frequency 829.0 MHz	Mid CH 20525 Frequency 836.5 MHz	High CH 20600 Frequency 844.0 MHz	3GPP MPR (dB)
5 / 10M	QPSK	1	0	22.26	21.92	22.13	0
		1	24	**22.31**	22.15	22.30	0
		1	49	21.93	22.14	22.04	0
		25	0	21.29	21.04	21.22	1
		25	12	21.18	21.01	21.27	1
		25	25	21.09	21.06	21.05	1
		50	0	21.17	21.03	21.19	1
	16QAM	1	0	21.23	20.89	21.10	1
		1	24	21.28	21.12	21.27	1
		1	49	20.90	21.11	21.01	1
		25	0	20.26	20.01	20.19	2
		25	12	20.15	19.98	20.24	2
		25	25	20.06	20.03	20.02	2
		50	0	20.14	20.00	20.16	2

ERP POWER (dBm)

MODE A

GSM

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
Y	128	824.2	-3.91	32.62	26.56	452.90	H
	189	836.4	-4.01	32.52	26.36	432.51	H
	251	848.8	-4.31	32.65	26.19	415.91	H
	128	824.2	-11.11	32.76	19.50	89.13	V
	189	836.4	-11.47	32.39	18.77	75.34	V
	251	848.8	-11.42	32.54	18.97	78.89	V

EDGE

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
Y	128	824.2	-8.10	32.62	22.37	172.58	H
	189	836.4	-8.37	32.52	22.00	158.49	H
	251	848.8	-8.54	32.65	21.96	157.04	H
	128	824.2	-13.57	32.76	17.04	50.58	V
	189	836.4	-13.58	32.39	16.66	46.34	V
	251	848.8	-13.82	32.54	16.57	45.39	V

WCDMA (RMC 12.2K)

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
Y	4132	826.4	-14.67	32.62	15.80	38.02	H
	4182	836.52	-14.06	32.52	16.31	42.76	H
	4233	846.6	-14.97	32.65	15.53	35.73	H
	4132	826.4	-19.09	32.76	11.52	14.19	V
	4182	836.4	-19.69	32.39	10.55	11.35	V
	4233	846.6	-19.75	32.54	10.64	11.59	V

LTE BAND 5

CHANNEL BANDWIDTH: 5MHz QPSK

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
Y	20425	826.5	-14.42	32.62	16.05	40.27	H
	20505	836.5	-14.61	32.52	15.76	37.67	H
	20625	846.5	-14.52	32.65	15.98	39.63	H
	20425	826.5	-19.09	32.76	11.52	14.19	V
	20505	836.5	-19.32	32.39	10.92	12.36	V
	20625	846.5	-19.68	32.54	10.71	11.78	V

CHANNEL BANDWIDTH: 5MHz 16QAM

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
Y	20425	826.5	-15.26	32.62	15.21	33.19	H
	20505	836.5	-15.41	32.52	14.96	31.33	H
	20625	846.5	-15.22	32.65	15.28	33.73	H
	20425	826.5	-20.26	32.76	10.35	10.84	V
	20505	836.5	-20.13	32.39	10.11	10.26	V
	20625	846.5	-20.28	32.54	10.11	10.26	V

CHANNEL BANDWIDTH: 10MHz QPSK

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
Y	20450	829	-14.44	32.62	16.03	40.09	H
	20525	836.5	-14.90	32.52	15.47	35.24	H
	20600	844	-14.23	32.65	16.27	42.36	H
	20450	829	-19.12	32.76	11.49	14.09	V
	20525	836.5	-19.37	32.39	10.87	12.22	V
	20600	844	-19.33	32.54	11.06	12.76	V

CHANNEL BANDWIDTH: 10MHz 16QAM

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
Y	20450	829	-15.50	32.62	14.97	31.41	H
	20525	836.5	-15.26	32.52	15.11	32.43	H
	20600	844	-15.93	32.65	14.57	28.64	H
	20450	829	-20.31	32.76	10.30	10.72	V
	20525	836.5	-20.97	32.39	9.27	8.45	V
	20600	844	-20.23	32.54	10.16	10.38	V

MODE B

GSM

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
Y	128	824.2	-1.66	32.62	28.81	760.33	H
	189	836.4	-1.61	32.52	28.76	751.62	H
	251	848.8	-1.90	32.65	28.60	724.44	H
	128	824.2	-6.65	32.76	23.96	248.89	V
	189	836.4	-6.54	32.39	23.70	234.42	V
	251	848.8	-6.63	32.54	23.76	237.68	V

EDGE

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
Y	128	824.2	-5.43	32.62	25.04	319.15	H
	189	836.4	-5.25	32.52	25.12	325.09	H
	251	848.8	-5.66	32.65	24.84	304.79	H
	128	824.2	-11.09	32.76	19.52	89.54	V
	189	836.4	-10.28	32.39	19.96	99.08	V
	251	848.8	-10.50	32.54	19.89	97.50	V

WCDMA (RMC 12.2K)

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
Y	4132	826.4	-11.33	32.62	19.14	82.04	H
	4182	836.52	-11.05	32.52	19.32	85.51	H
	4233	846.6	-11.25	32.65	19.25	84.14	H
	4132	826.4	-15.34	32.76	15.27	33.65	V
	4182	836.4	-15.10	32.39	15.14	32.66	V
	4233	846.6	-15.94	32.54	14.45	27.86	V

LTE BAND 5

CHANNEL BANDWIDTH: 5MHz QPSK

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
X	20425	826.5	-11.32	32.62	19.15	82.22	H
	20505	836.5	-11.20	32.52	19.17	82.60	H
	20625	846.5	-11.42	32.65	19.08	80.91	H
	20425	826.5	-19.87	32.76	10.74	11.86	V
	20505	836.5	-19.98	32.39	10.26	10.62	V
	20625	846.5	-20.56	32.54	9.83	9.62	V

CHANNEL BANDWIDTH: 5MHz 16QAM

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
X	20425	826.5	-12.42	32.62	18.05	63.83	H
	20505	836.5	-12.24	32.52	18.13	65.01	H
	20625	846.5	-12.45	32.65	18.05	63.83	H
	20425	826.5	-21.13	32.76	9.48	8.87	V
	20505	836.5	-21.05	32.39	9.19	8.30	V
	20625	846.5	-21.08	32.54	9.31	8.53	V

CHANNEL BANDWIDTH: 10MHz QPSK

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
Y	20450	829	-11.21	32.62	19.26	84.33	H
	20525	836.5	-11.08	32.52	19.29	84.92	H
	20600	844	-11.28	32.65	19.22	83.56	H
	20450	829	-19.89	32.76	10.72	11.80	V
	20525	836.5	-20.03	32.39	10.21	10.50	V
	20600	844	-20.37	32.54	10.02	10.05	V

CHANNEL BANDWIDTH: 10MHz 16QAM

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
Y	20450	829	-12.22	32.62	18.25	66.83	H
	20525	836.5	-12.14	32.52	18.23	66.53	H
	20600	844	-12.28	32.65	18.22	66.37	H
	20450	829	-20.95	32.76	9.66	9.25	V
	20525	836.5	-20.96	32.39	9.28	8.47	V
	20600	844	-21.02	32.54	9.37	8.65	V

4.2 FREQUENCY STABILITY MEASUREMENT

4.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT

1.5 ppm is for base and fixed station. 2.5 ppm is for mobile station.

4.2.2 TEST PROCEDURE

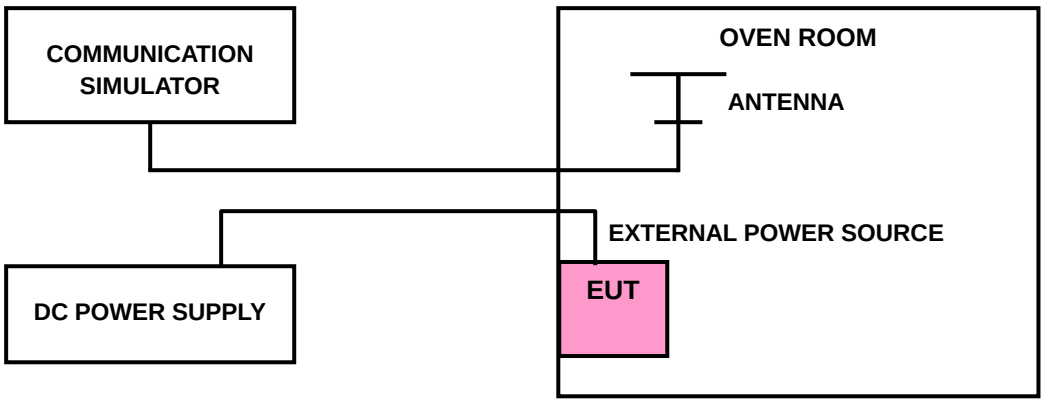
a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.

b. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.

c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ±0.5℃ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

NOTE: The frequency error was recorded frequency error from the communication simulator.

4.2.3 TEST SETUP



4.2.4 TEST RESULTS

FREQUENCY ERROR vs. VOLTAGE

VOLTAGE (Volts)	FREQUENCY ERROR (ppm)					LIMIT (ppm)
	GSM	EDGE	WCDMA	LTE Band 5		
				5MHz	10MHz	
3.8	0.03	0.02	0.0003	-0.00371	-0.00263	2.5
3.6	0.02	0.02	0.0012	0.00406	-0.00167	2.5
4.2	0.02	0.02	0.0006	-0.00335	-0.00502	2.5

NOTE: The applicant defined the normal working voltage of the battery is from 3.6Vdc to 4.2Vdc.

FREQUENCY ERROR vs. TEMPERATURE

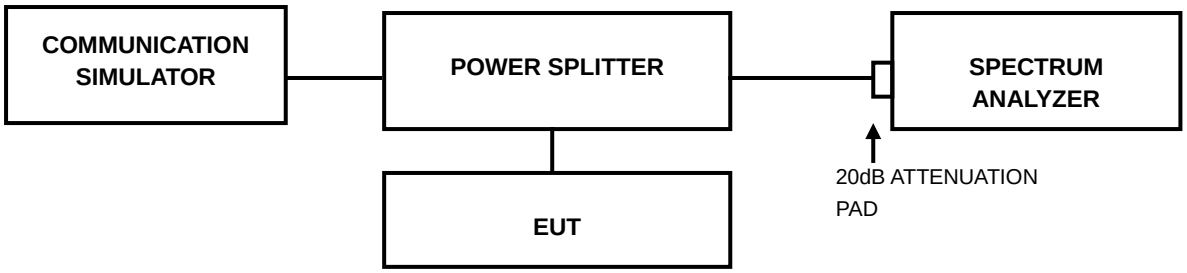
TEMP. (℃)	FREQUENCY ERROR (ppm)					LIMIT (ppm)
	GSM	EDGE	WCDMA	LTE Band 5		
				5MHz	10MHz	
-30	0.03	0.02	0.002	-0.00622	-0.00502	2.5
-20	0.03	0.02	0.002	-0.00490	-0.00610	2.5
-10	0.03	0.02	0.003	-0.00143	-0.00813	2.5
0	0.02	0.02	0.001	-0.00586	-0.00562	2.5
10	0.02	0.02	0.001	-0.00347	-0.00275	2.5
20	0.02	0.02	0.001	-0.00251	-0.00371	2.5
30	0.03	0.02	0.002	-0.00239	-0.00167	2.5
40	0.02	0.02	0.002	-0.00299	-0.00132	2.5
50	0.03	0.02	0.002	-0.00227	-0.00681	2.5

4.3 OCCUPIED BANDWIDTH MEASUREMENT

4.3.1 TEST PROCEDURES

The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

4.3.2 TEST SETUP

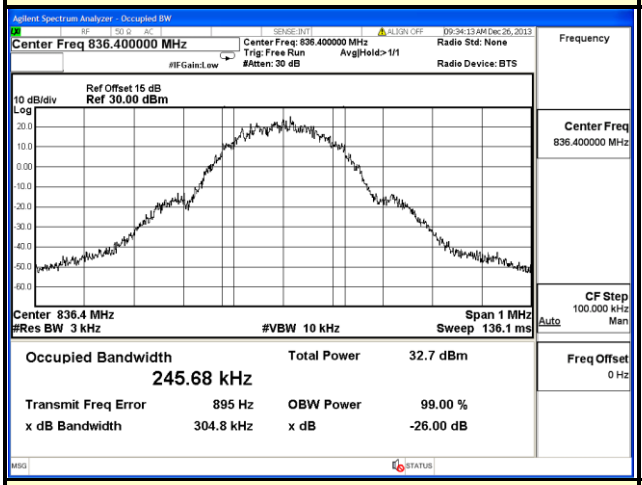


4.3.3 TEST RESULTS

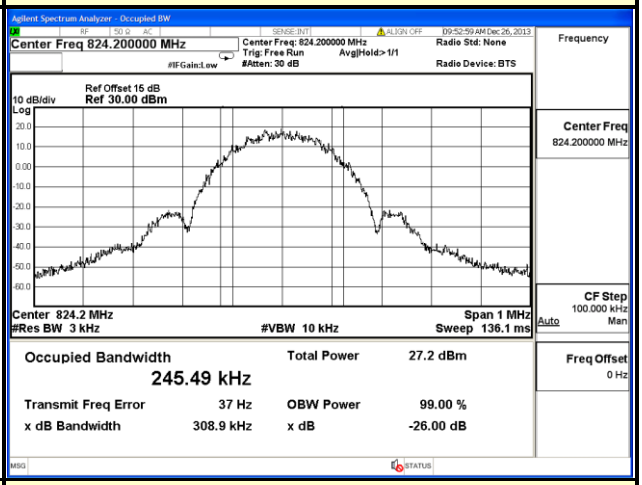
CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (kHz)		CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)
		GSM	EDGE			WCDMA
128	824.2	243.90	245.49	4132	826.4	4.1792
189	836.4	245.68	242.17	4182	836.4	4.2049
251	848.8	245.05	243.98	4233	846.6	4.1448

SPECTRUM PLOT OF WORST VALUE

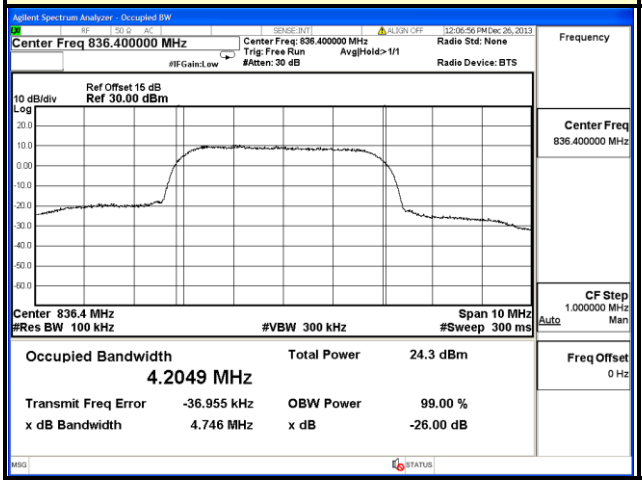
GSM



EDGE



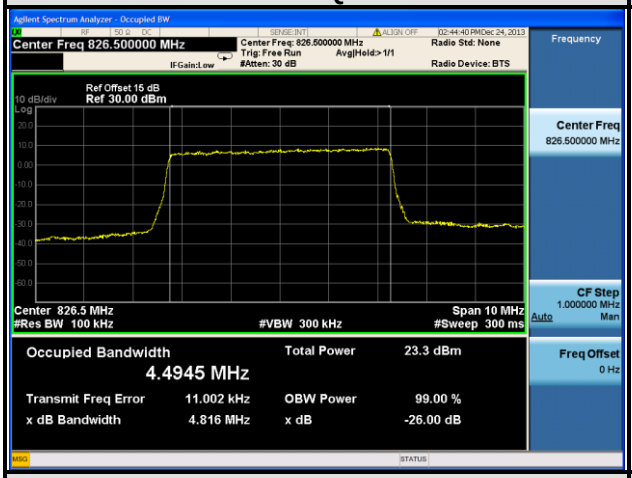
WCDMA



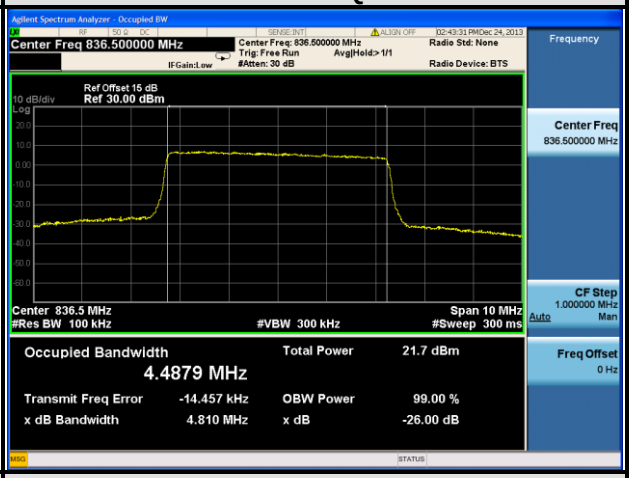
LTE BAND 5							
CHANNEL BANDWIDTH: 5MHz				CHANNEL BANDWIDTH: 10MHz			
CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)		CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)	
		QPSK	16QAM			QPSK	16QAM
20425	826.5	4.4945	4.4857	20450	829	8.8966	8.9057
20525	836.5	4.4899	4.4879	20525	836.5	8.9235	8.9149
20625	846.5	4.4829	4.4766	20600	844	8.9329	8.9372

SPECTRUM PLOT OF WORST VALUE

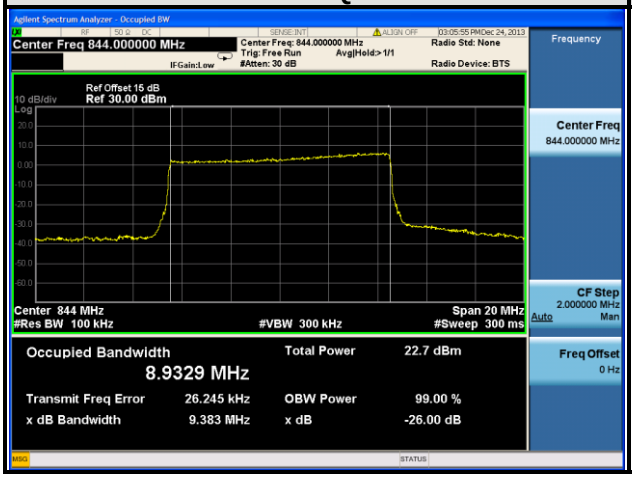
5MHz / QPSK



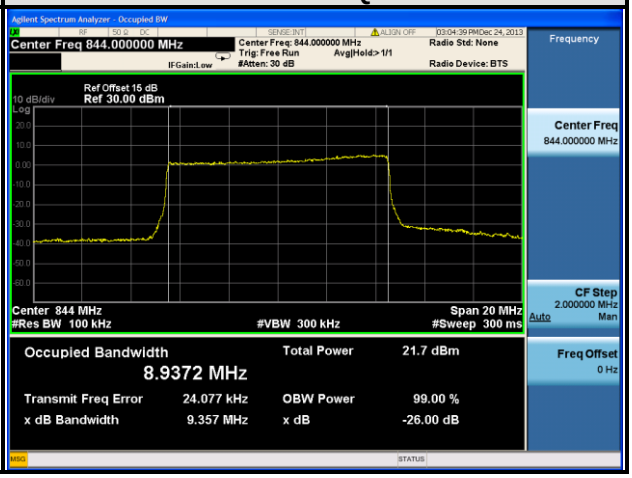
5MHz / 16QAM



10MHz / QPSK



10MHz / 16QAM

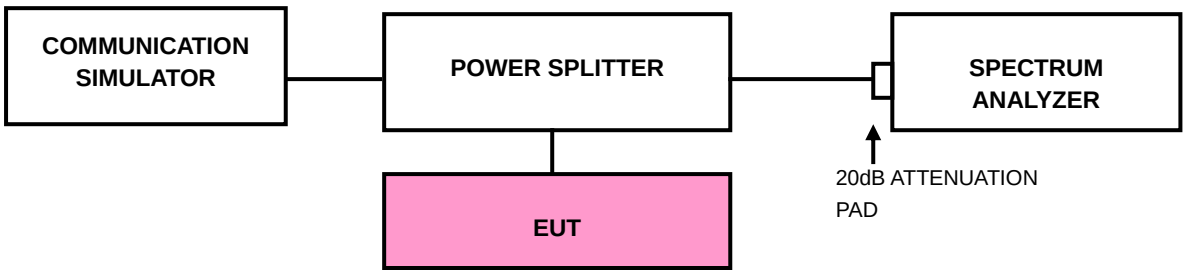


4.4 BAND EDGE MEASUREMENT

4.4.1 LIMITS OF BAND EDGE MEASUREMENT

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. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

4.4.2 TEST SETUP



4.4.3 TEST PROCEDURES

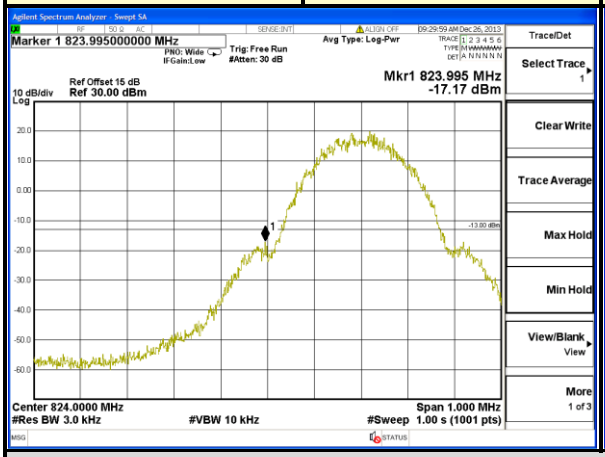
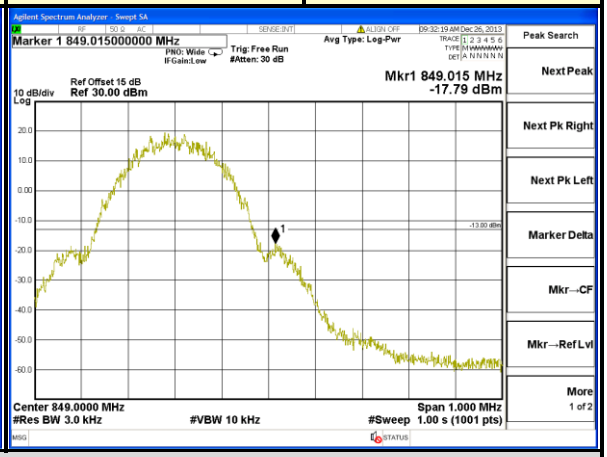
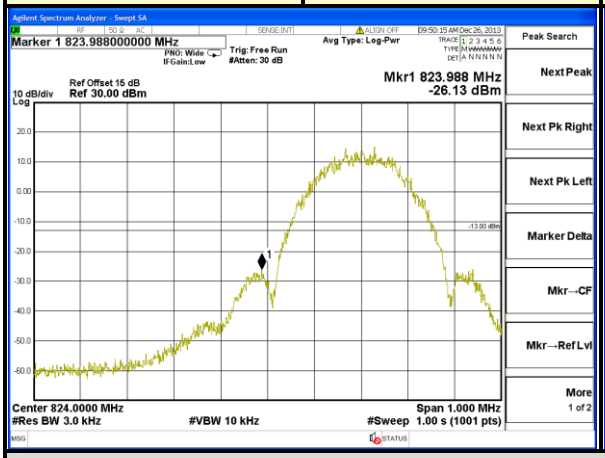
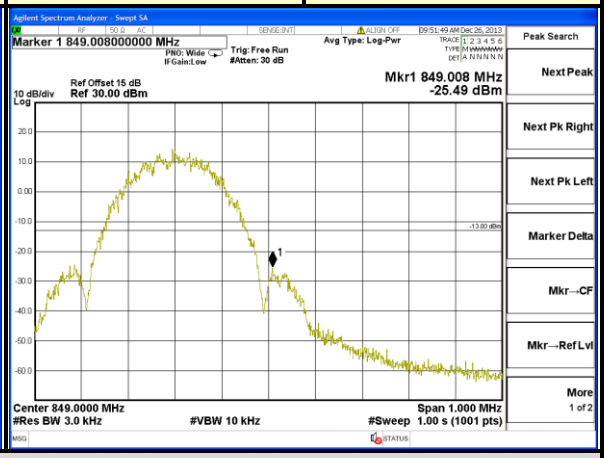
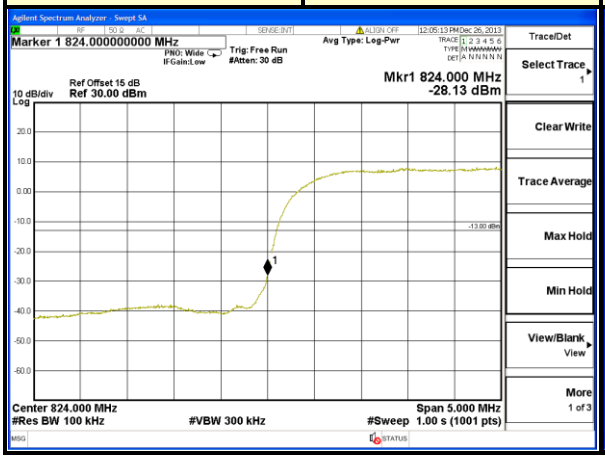
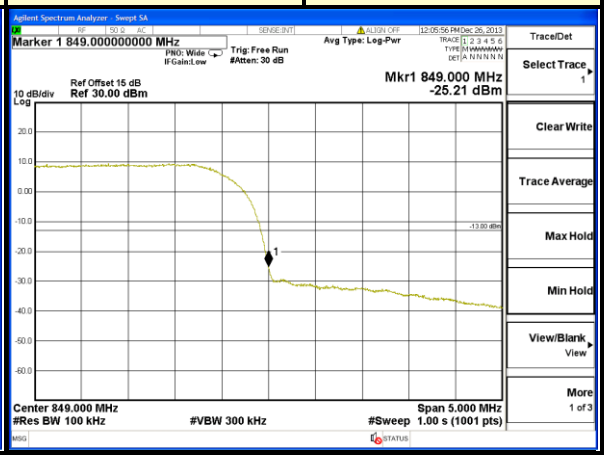
a. All measurements were done at low and high operational frequency range.

b. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 3kHz and VB of the spectrum is 10kHz (GSM/GPRS/ EDGE).

c. The center frequency of spectrum is the band edge frequency and span is 5MHz. RB of the spectrum is 100kHz and VB of the spectrum is 300kHz (WCDMA/LTE).

d. Record the max trace plot into the test report.

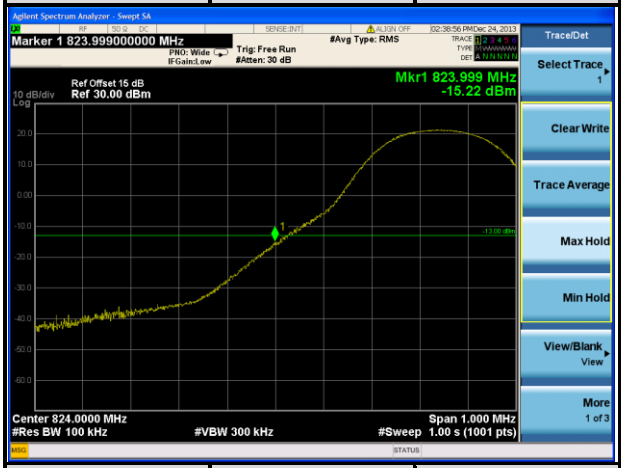
4.4.4 TEST RESULTS

GSM			
CHANNEL	128	CHANNEL	251
			
EDGE			
CHANNEL	128	CHANNEL	251
			
WCDMA			
CHANNEL	4132	CHANNEL	4233
			

LTE Band 5

Channel Bandwidth: 5MHz

CHANNEL	20425	1 RB	CHANNEL	20625	1 RB

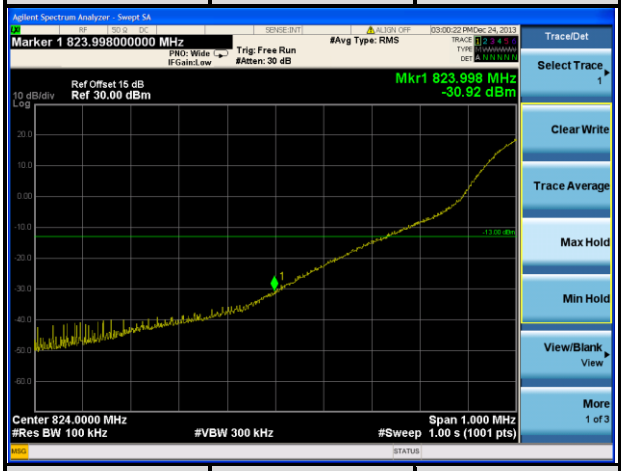


CHANNEL	20425	25 RB	CHANNEL	20625	25 RB

LTE Band 5

Channel Bandwidth: 10MHz

CHANNEL	20450	1 RB	CHANNEL	20600	1 RB



CHANNEL	20450	50 RB	CHANNEL	20600	50 RB

4.5 CONDUCTED SPURIOUS EMISSIONS

4.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

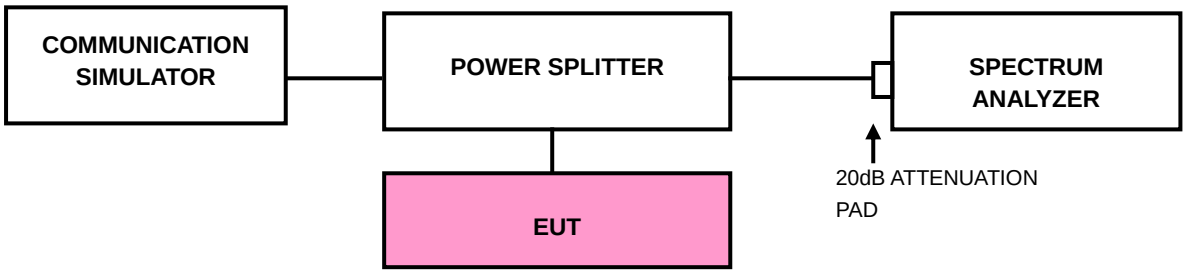
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit equal to –13dBm.

4.5.2 TEST PROCEDURE

a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.

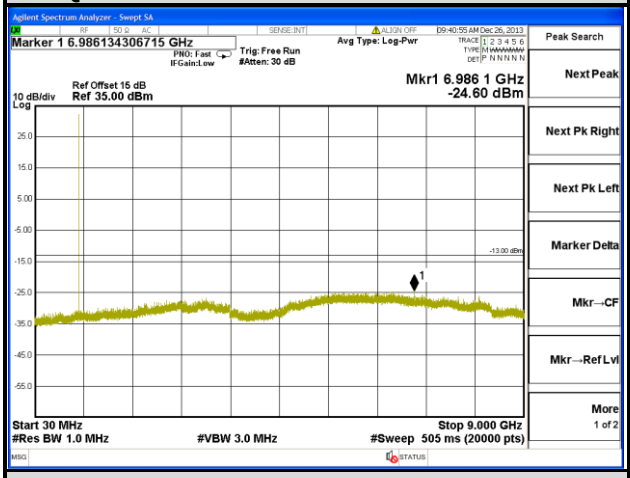
b. Measuring frequency range is from 30 MHz to 9GHz. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

4.5.3 TEST SETUP

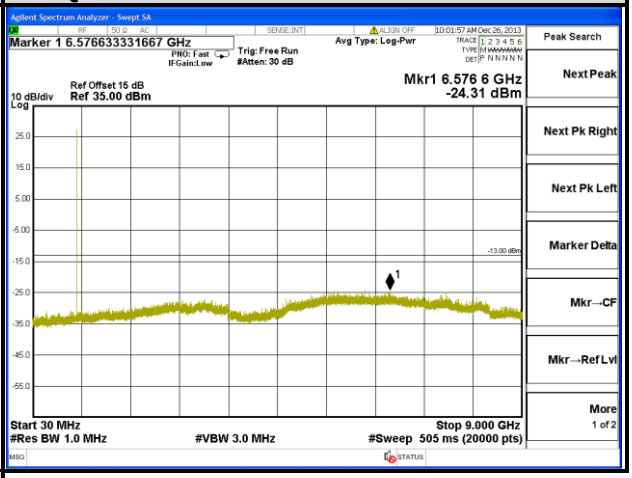


4.5.4 TEST RESULTS

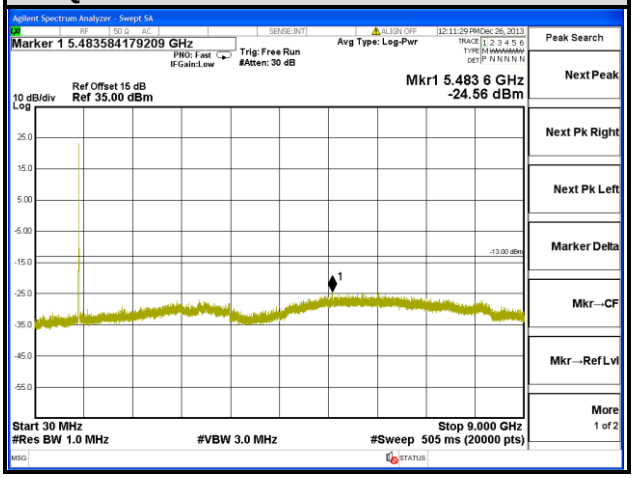
GSM
CHANNEL 189
FREQUENCY RANGE : 30MHz~9GHz

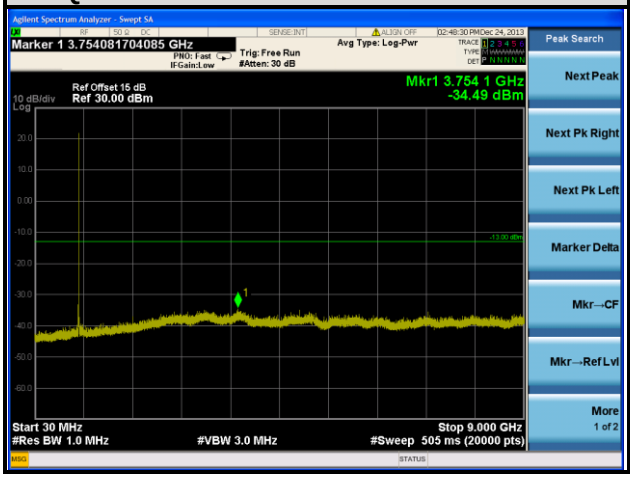
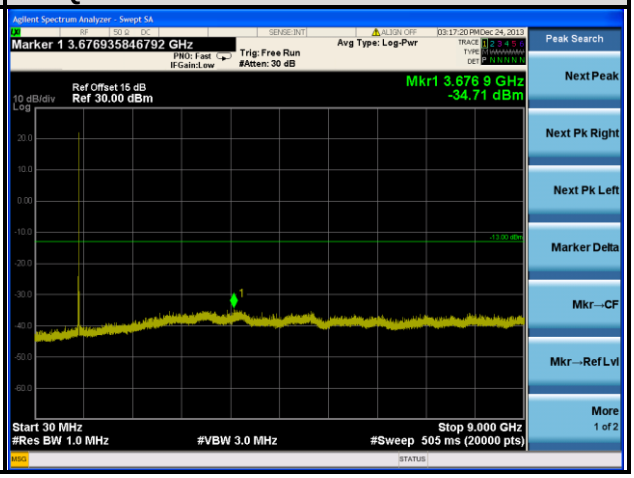


EDGE
CHANNEL 189
FREQUENCY RANGE : 30MHz~9GHz



WCDMA
CHANNEL 4182
FREQUENCY RANGE : 30MHz~9GHz



LTE Band 5 (Channel Bandwidth: 5MHz)	LTE Band 5 (Channel Bandwidth: 10MHz)
CHANNEL 20505	CHANNEL 20525
FREQUENCY RANGE : 30MHz~9GHz	FREQUENCY RANGE : 30MHz~9GHz
	

4.6 RADIATED EMISSION MEASUREMENT

4.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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. The emission limit equal to –13dBm.

4.6.2 TEST PROCEDURES

a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.

b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value” of step a. Record the power level of S.G

c. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.

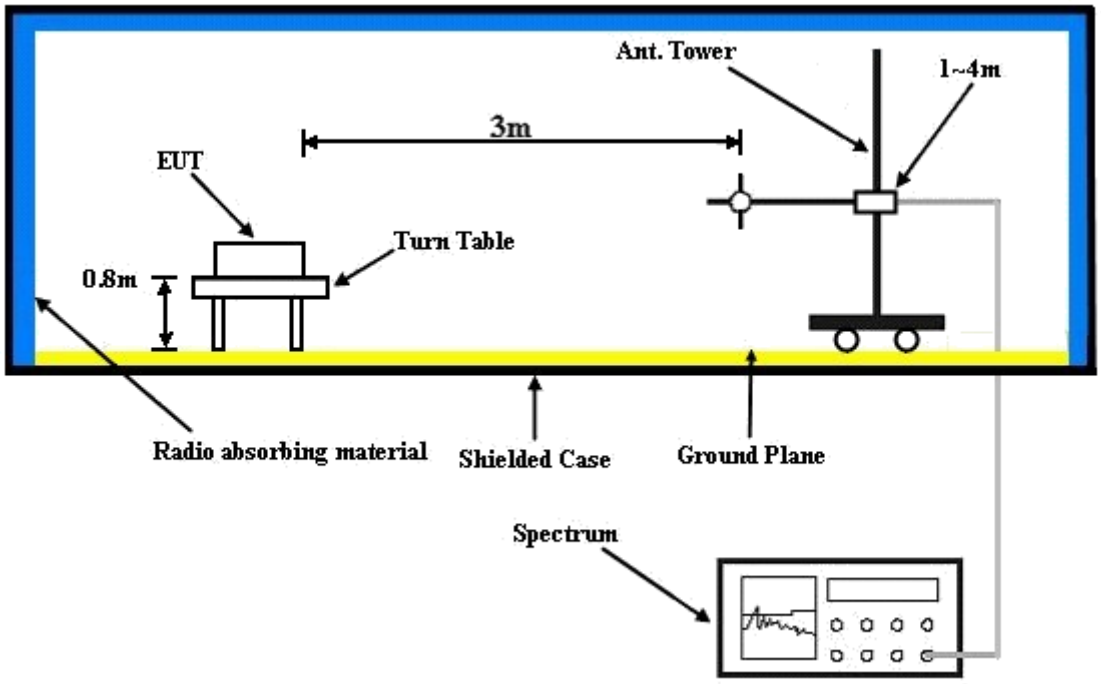
d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.R.P power - 2.15dBi.

NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

4.6.3 DEVIATION FROM TEST STANDARD

No deviation

4.6.4 TEST SETUP



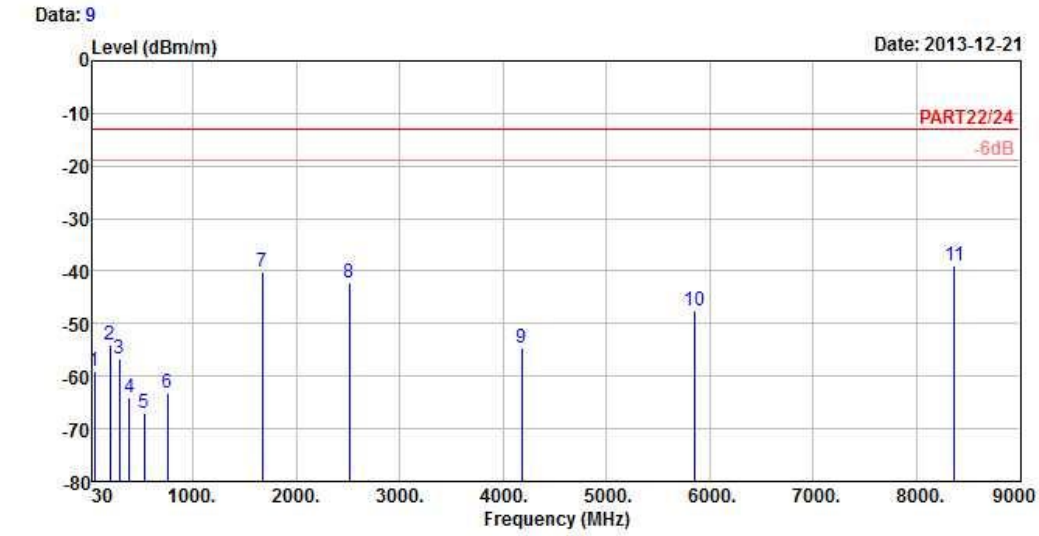
For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.6.5 TEST RESULTS

MODE A

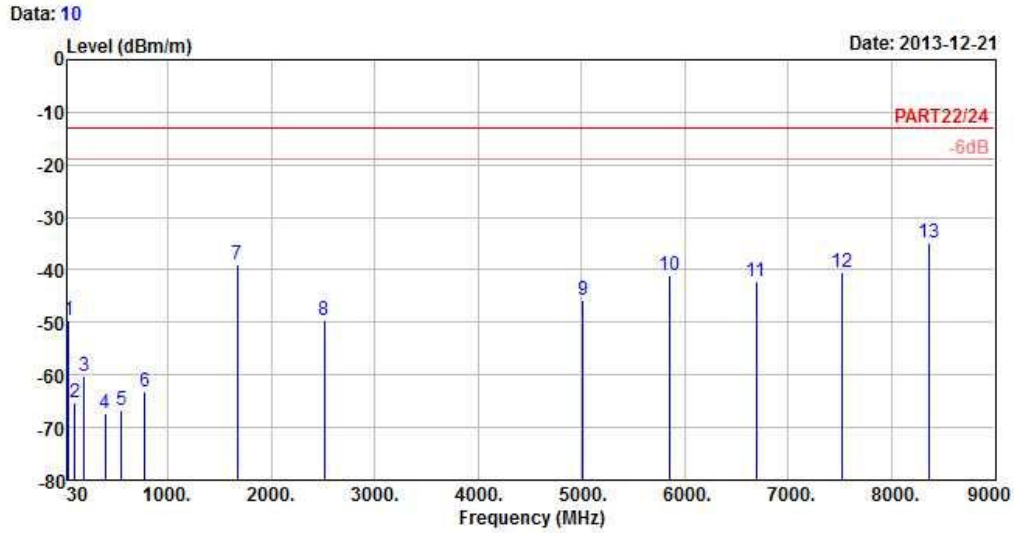
GSM:

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition : PART22/24 3m HORIZONTAL
Brand/Model: A91
Remark : GSM850_Link
Tested by : Kay wu
Temprature : 25℃
Humidity : 65%
Plane : X

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	44.58	-58.90	-57.71	-13.00	-45.90	-1.19	Peak
2	195.78	-54.04	-46.55	-13.00	-41.04	-7.49	Peak
3	284.88	-56.58	-50.41	-13.00	-43.58	-6.17	Peak
4	383.30	-63.94	-58.18	-13.00	-50.94	-5.76	Peak
5	531.00	-67.13	-64.86	-13.00	-54.13	-2.27	Peak
6	757.10	-63.15	-64.99	-13.00	-50.15	1.84	Peak
7	1672.80	-40.17	-26.33	-13.00	-27.17	-13.84	Peak
8	2509.20	-42.19	-32.20	-13.00	-29.19	-9.99	Peak
9	4182.00	-54.66	-47.40	-13.00	-41.66	-7.26	Peak
10	5854.80	-47.66	-46.01	-13.00	-34.66	-1.65	Peak
11 pp	8364.00	-38.90	-41.81	-13.00	-25.90	2.91	Peak

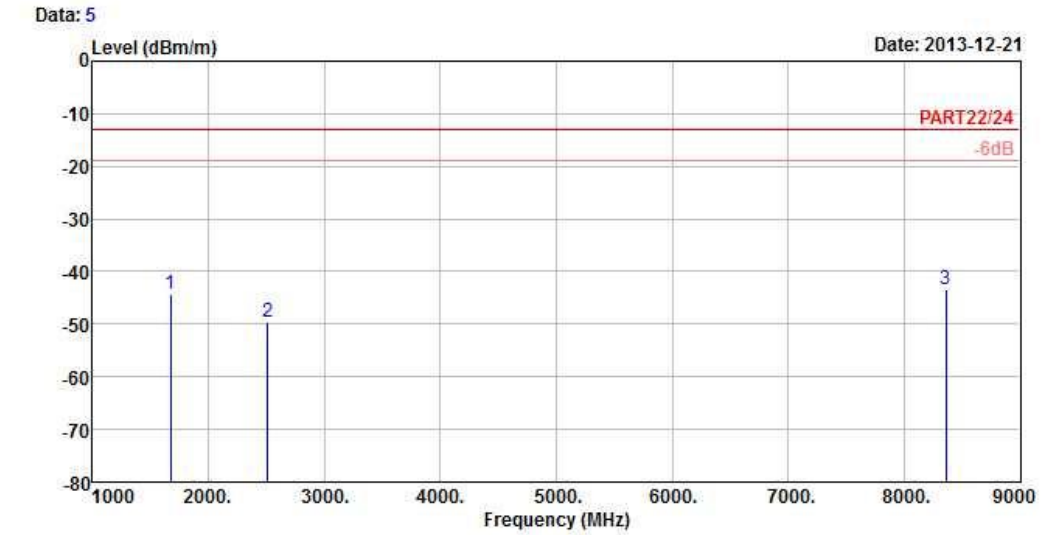


Site : 966 Chamber 5
Condition : PART22/24 3m VERTICAL
Brand/Model: A91
Remark : GSM850_Link
Tested by : Kay wu
Temprature : 25℃
Humidity : 65%
Plane : X

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	38.91	-49.52	-47.78	-13.00	-36.52	-1.74	Peak
2	99.93	-65.26	-54.86	-13.00	-52.26	-10.40	Peak
3	188.49	-60.24	-53.66	-13.00	-47.24	-6.58	Peak
4	395.20	-67.16	-61.48	-13.00	-54.16	-5.68	Peak
5	547.10	-66.82	-65.01	-13.00	-53.82	-1.81	Peak
6	776.00	-63.05	-65.01	-13.00	-50.05	1.96	Peak
7	1672.80	-38.85	-25.01	-13.00	-25.85	-13.84	Peak
8	2509.20	-49.60	-39.61	-13.00	-36.60	-9.99	Peak
9	5018.40	-45.82	-42.80	-13.00	-32.82	-3.02	Peak
10	5854.80	-41.05	-39.40	-13.00	-28.05	-1.65	Peak
11	6691.20	-42.11	-43.65	-13.00	-29.11	1.54	Peak
12	7527.60	-40.53	-44.46	-13.00	-27.53	3.93	Peak
13 pp	8364.00	-34.90	-37.81	-13.00	-21.90	2.91	Peak

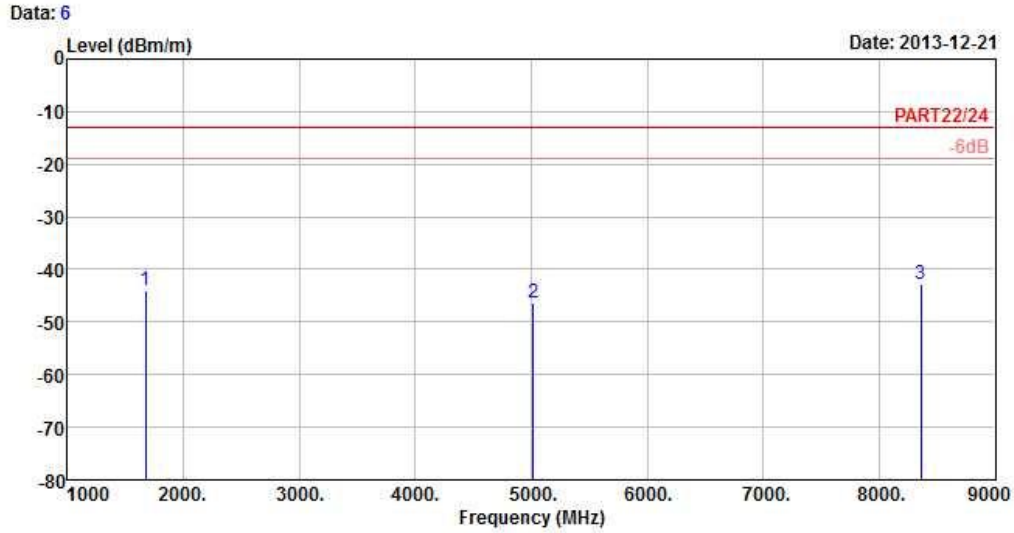
EDGE:

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition : PART22/24 3m HORIZONTAL
Brand/Model: A91
Remark : EDGE850_Link
Tested by : Kay wu
Temprature : 25℃
Humidity : 65%
Plane : X

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	1672.80	-44.32	-30.48	-13.00	-31.32	-13.84	Peak
2	2509.20	-49.62	-39.63	-13.00	-36.62	-9.99	Peak
3 pp	8364.00	-43.49	-46.40	-13.00	-30.49	2.91	Peak

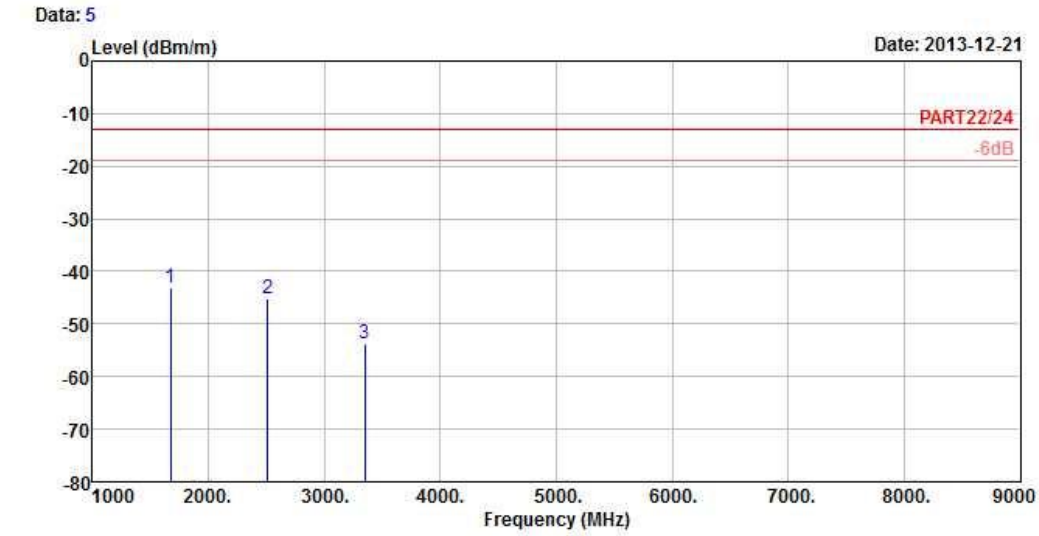


Site : 966 Chamber 5
Condition : PART22/24 3m VERTICAL
Brand/Model: A91
Remark : EDGE850_Link
Tested by : Kay wu
Temprature : 25℃
Humidity : 65%
Plane : X

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	1672.80	-44.11	-30.27	-13.00	-31.11	-13.84	Peak
2	5018.40	-46.32	-43.30	-13.00	-33.32	-3.02	Peak
3 pp	8364.00	-42.75	-45.66	-13.00	-29.75	2.91	Peak

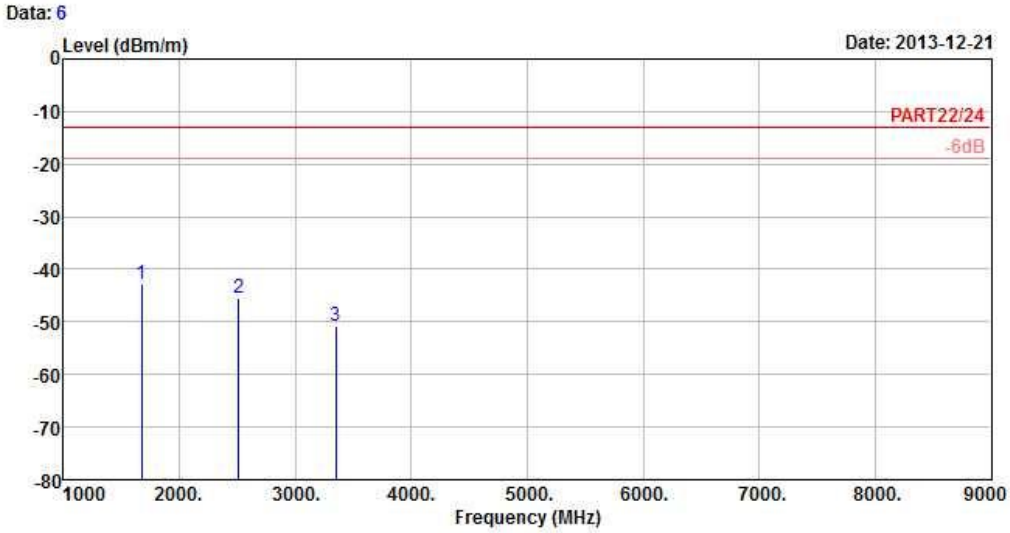
WCDMA:

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition : PART22/24 3m HORIZONTAL
Brand/Model: A91
Remark : Band V_Link
Tested by : Kay wu
Temprature : 25℃
Humidity : 65%
Plane : X

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 pp	1672.80	-43.18	-29.34	-13.00	-30.18	-13.84	Peak
2	2509.20	-45.04	-35.05	-13.00	-32.04	-9.99	Peak
3	3345.60	-53.83	-44.47	-13.00	-40.83	-9.36	Peak



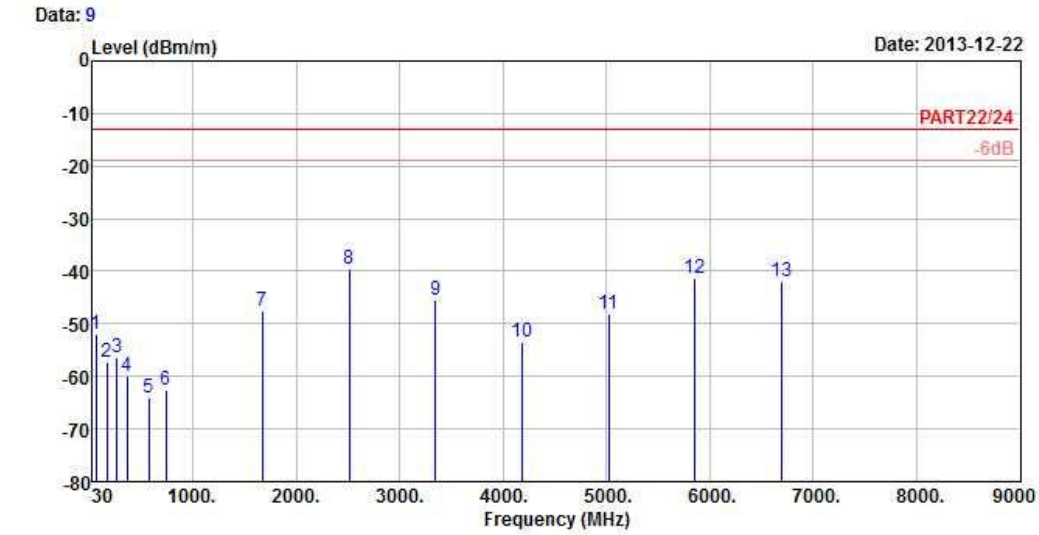
Site : 966 Chamber 5
Condition : PART22/24 3m VERTICAL
Brand/Model: A91
Remark : Band V_Link
Tested by : Kay wu
Temprature : 25℃
Humidity : 65%
Plane : X

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 pp	1672.80	-42.78	-28.94	-13.00	-29.78	-13.84	Peak
2	2509.20	-45.41	-35.42	-13.00	-32.41	-9.99	Peak
3	3345.60	-50.70	-41.34	-13.00	-37.70	-9.36	Peak

LTE BAND 5

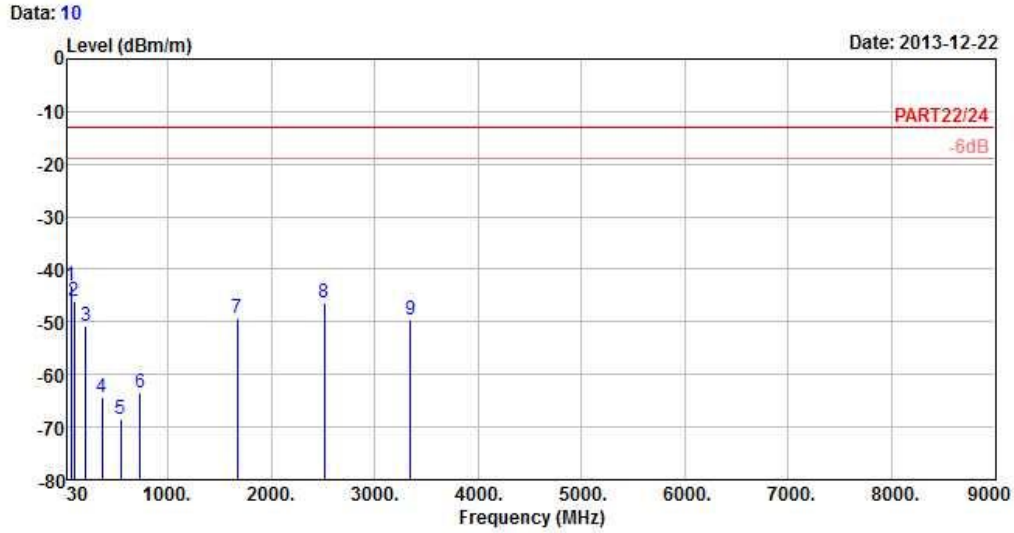
CHANNEL BANDWIDTH: 5MHz / QPSK

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition : PART22/24 3m HORIZONTAL
Brand/Model: A91
Remark : LTE Band 5_5M QPSK(1,12) Link
Tested by : Kay wu
Temprature : 25℃
Humidity : 65%
Plane : Z

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	63.75	-52.09	-44.69	-13.00	-39.09	-7.40	Peak
2	168.51	-57.29	-50.61	-13.00	-44.29	-6.68	Peak
3	264.09	-56.30	-50.43	-13.00	-43.30	-5.87	Peak
4	360.20	-59.92	-53.99	-13.00	-46.92	-5.93	Peak
5	576.50	-64.04	-63.02	-13.00	-51.04	-1.02	Peak
6	736.10	-62.60	-64.29	-13.00	-49.60	1.69	Peak
7	1672.00	-47.46	-33.62	-13.00	-34.46	-13.84	Peak
8 pp	2509.00	-39.49	-29.50	-13.00	-26.49	-9.99	Peak
9	3346.00	-45.33	-35.97	-13.00	-32.33	-9.36	Peak
10	4185.00	-53.46	-46.20	-13.00	-40.46	-7.26	Peak
11	5020.00	-48.11	-45.09	-13.00	-35.11	-3.02	Peak
12	5855.00	-41.42	-39.77	-13.00	-28.42	-1.65	Peak
13	6690.00	-41.90	-43.44	-13.00	-28.90	1.54	Peak



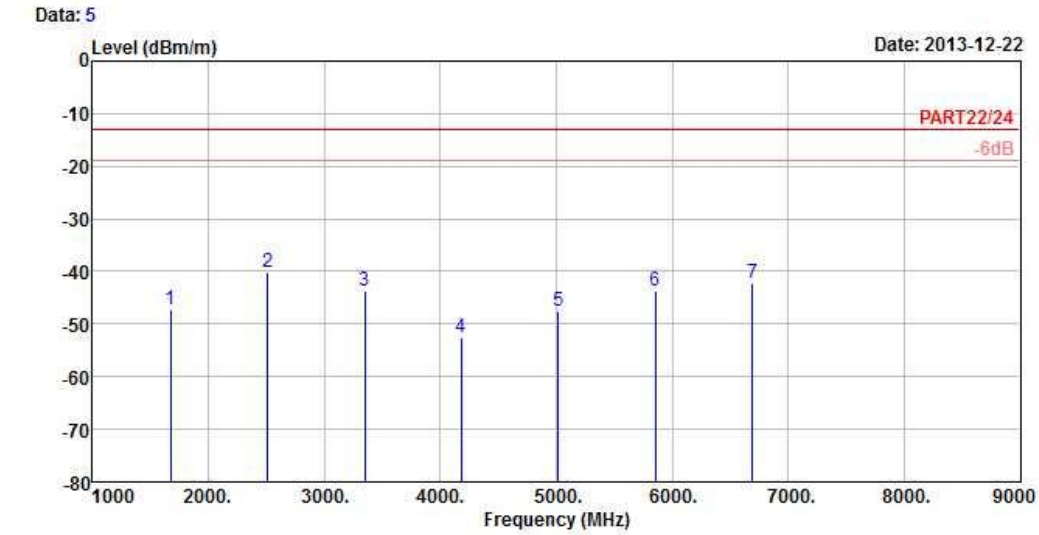
Site : 966 Chamber 5
Condition : PART22/24 3m VERTICAL
Brand/Model: A91
Remark : LTE Band 5_5M QPSK(1,12) Link
Tested by : Kay wu
Temprature : 25℃
Humidity : 65%
Plane : Z

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 pp	63.21	-42.96	-35.89	-13.00	-29.96	-7.07	Peak
2	95.34	-46.15	-35.66	-13.00	-33.15	-10.49	Peak
3	207.66	-50.88	-43.28	-13.00	-37.88	-7.60	Peak
4	366.50	-64.48	-58.60	-13.00	-51.48	-5.88	Peak
5	542.20	-68.48	-66.53	-13.00	-55.48	-1.95	Peak
6	731.20	-63.52	-65.18	-13.00	-50.52	1.66	Peak
7	1672.00	-49.24	-35.40	-13.00	-36.24	-13.84	Peak
8	2509.00	-46.23	-36.24	-13.00	-33.23	-9.99	Peak
9	3346.00	-49.45	-40.09	-13.00	-36.45	-9.36	Peak

LTE BAND 5

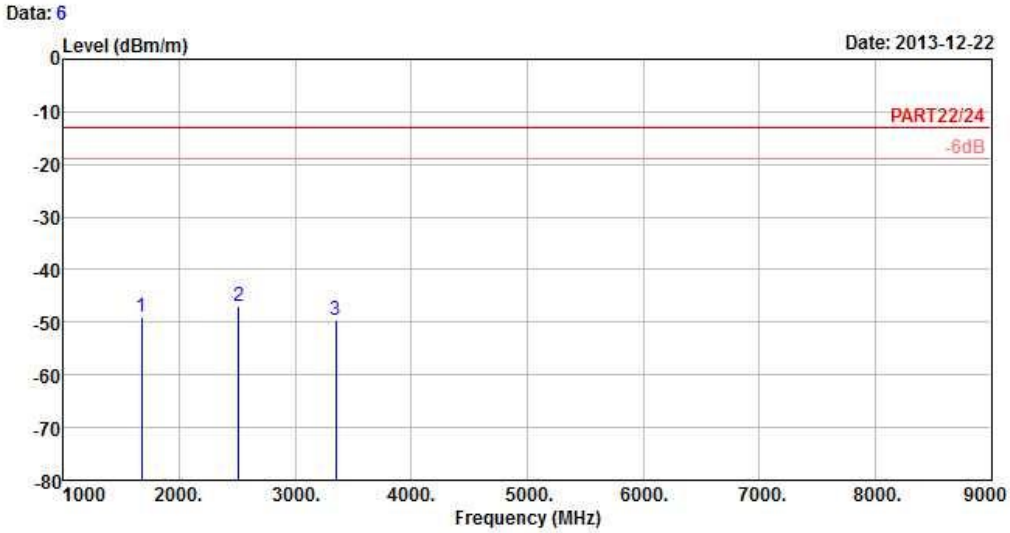
CHANNEL BANDWIDTH: 10MHz / QPSK

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition : PART22/24 3m HORIZONTAL
Brand/Model: A91
Remark : LTE Band 5_10M QPSK(1,24) Link
Tested by : Kay wu
Temprature : 25℃
Humidity : 65%
Plane : Z

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	1672.00	-47.30	-33.46	-13.00	-34.30	-13.84	Peak
2 pp	2509.00	-40.19	-30.20	-13.00	-27.19	-9.99	Peak
3	3346.00	-43.73	-34.37	-13.00	-30.73	-9.36	Peak
4	4180.00	-52.53	-45.27	-13.00	-39.53	-7.26	Peak
5	5020.00	-47.45	-44.43	-13.00	-34.45	-3.02	Peak
6	5855.00	-43.67	-42.02	-13.00	-30.67	-1.65	Peak
7	6690.00	-42.25	-43.79	-13.00	-29.25	1.54	Peak



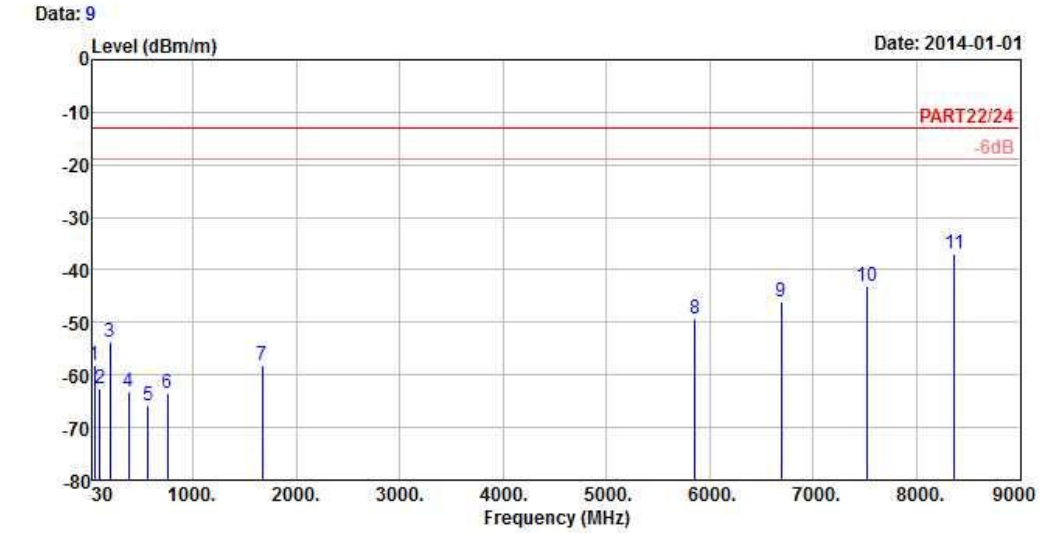
Site : 966 Chamber 5
Condition : PART22/24 3m VERTICAL
Brand/Model: A91
Remark : LTE Band 5_10M QPSK(1,24) Link
Tested by : Kay wu
Temprature : 25℃
Humidity : 65%
Plane : Z

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	1672.00	-49.13	-35.29	-13.00	-36.13	-13.84	Peak
2 pp	2509.00	-46.81	-36.82	-13.00	-33.81	-9.99	Peak
3	3346.00	-49.57	-40.21	-13.00	-36.57	-9.36	Peak

MODE B

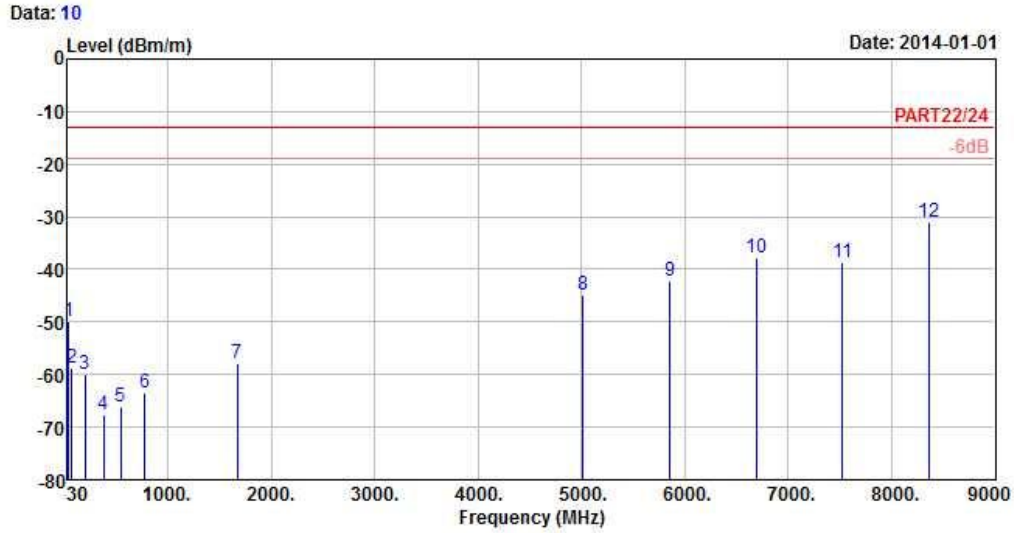
GSM:

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition : PART22/24 3m HORIZONTAL
Brand/Model: A91(Pad)
Remark : GSM850_Link
Tested by : Peter
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	44.58	-58.02	-56.83	-13.00	-45.02	-1.19	Peak
2	100.20	-62.54	-52.14	-13.00	-49.54	-10.40	Peak
3	196.32	-53.83	-46.34	-13.00	-40.83	-7.49	Peak
4	377.00	-63.25	-57.44	-13.00	-50.25	-5.81	Peak
5	565.30	-65.91	-64.60	-13.00	-52.91	-1.31	Peak
6	752.20	-63.53	-65.34	-13.00	-50.53	1.81	Peak
7	1672.80	-58.28	-44.44	-13.00	-45.28	-13.84	Peak
8	5854.80	-49.32	-47.67	-13.00	-36.32	-1.65	Peak
9	6691.20	-46.00	-47.54	-13.00	-33.00	1.54	Peak
10	7527.60	-42.99	-46.92	-13.00	-29.99	3.93	Peak
11 pp	8364.00	-36.98	-39.89	-13.00	-23.98	2.91	Peak

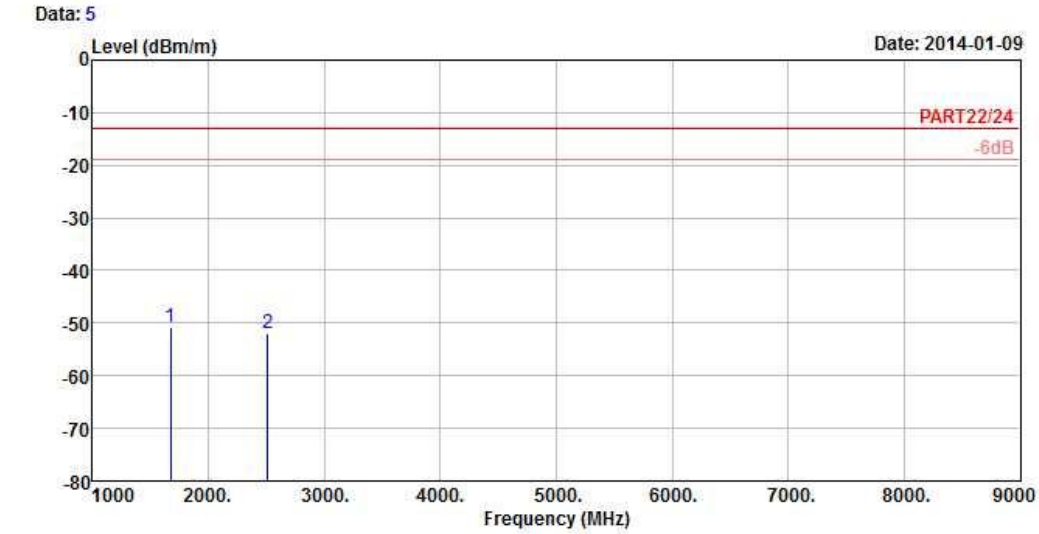


Site : 966 Chamber 5
Condition : PART22/24 3m VERTICAL
Brand/Model: A91(Pad)
Remark : GSM850_Link
Tested by : Peter
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	38.64	-49.94	-48.20	-13.00	-36.94	-1.74	Peak
2	67.26	-58.80	-50.43	-13.00	-45.80	-8.37	Peak
3	196.59	-59.87	-52.26	-13.00	-46.87	-7.61	Peak
4	374.90	-67.68	-61.86	-13.00	-54.68	-5.82	Peak
5	541.50	-66.09	-64.12	-13.00	-53.09	-1.97	Peak
6	776.70	-63.34	-65.31	-13.00	-50.34	1.97	Peak
7	1672.80	-57.91	-44.07	-13.00	-44.91	-13.84	Peak
8	5018.40	-44.93	-41.91	-13.00	-31.93	-3.02	Peak
9	5854.80	-42.20	-40.55	-13.00	-29.20	-1.65	Peak
10	6691.20	-37.85	-39.39	-13.00	-24.85	1.54	Peak
11	7527.60	-38.58	-42.51	-13.00	-25.58	3.93	Peak
12 pp	8364.00	-31.03	-33.94	-13.00	-18.03	2.91	Peak

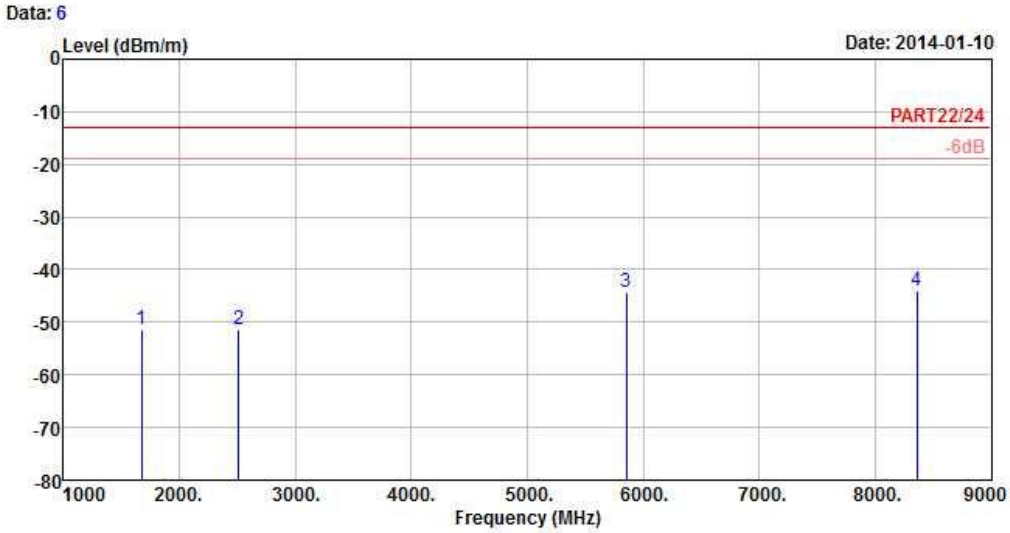
EDGE:

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition : PART22/24 3m HORIZONTAL
Brand/Model: A91(Pad)
Remark : EDGE850_Link
Tested by : Peter
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 pp	1672.80	-50.88	-37.04	-13.00	-37.88	-13.84	Peak
2	2509.20	-51.85	-41.86	-13.00	-38.85	-9.99	Peak

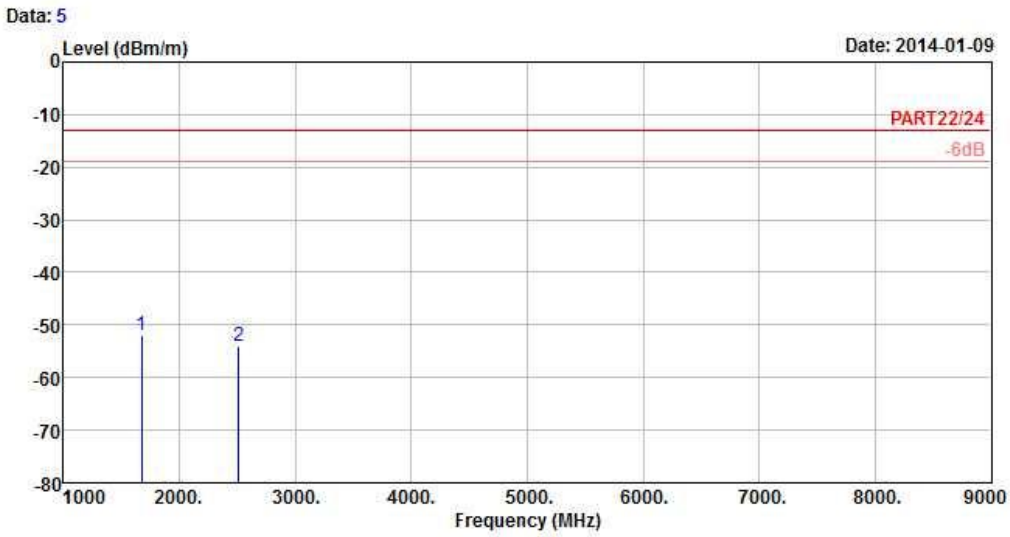


Site : 966 Chamber 5
Condition : PART22/24 3m VERTICAL
Brand/Model: A91(Pad)
Remark : EDGE850_Link
Tested by : Peter
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	1672.80	-51.51	-37.67	-13.00	-38.51	-13.84	Peak
2	2509.20	-51.24	-41.25	-13.00	-38.24	-9.99	Peak
3	5854.80	-44.34	-42.69	-13.00	-31.34	-1.65	Peak
4 pp	8364.00	-44.11	-47.02	-13.00	-31.11	2.91	Peak

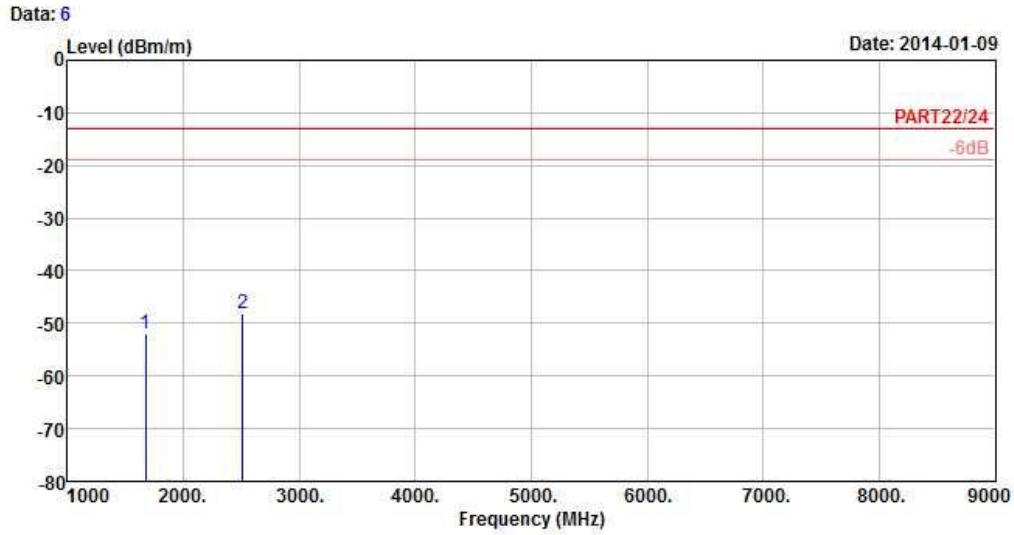
WCDMA:

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition : PART22/24 3m HORIZONTAL
Brand/Model: A91(Pad)
Remark : BAND V_Link
Tested by : Peter
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 pp	1672.80	-51.94	-38.10	-13.00	-38.94	-13.84	Peak
2	2509.20	-54.00	-44.01	-13.00	-41.00	-9.99	Peak



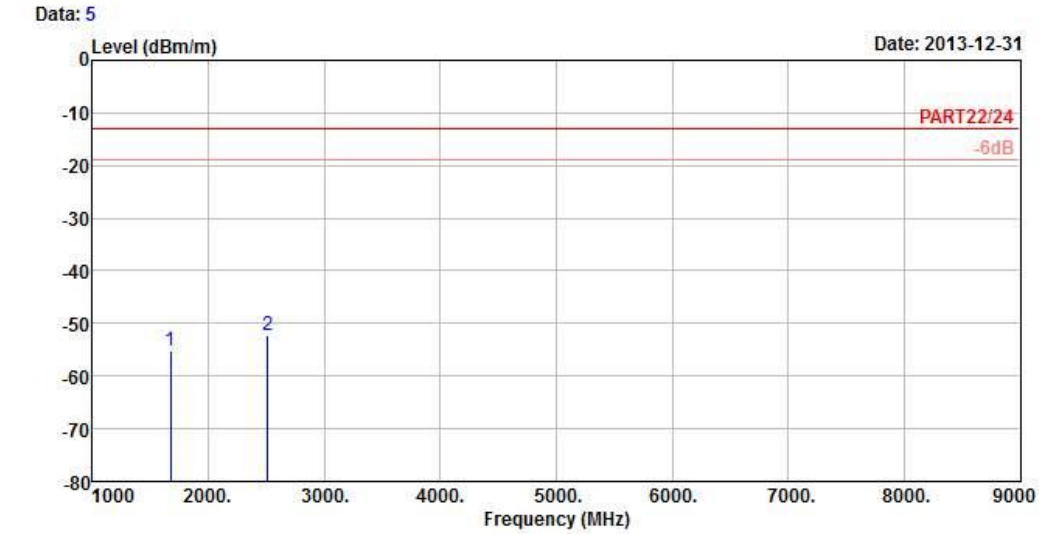
Site : 966 Chamber 5
Condition : PART22/24 3m VERTICAL
Brand/Model: A91(Pad)
Remark : BAND V_Link
Tested by : Peter
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	1672.80	-52.06	-38.22	-13.00	-39.06	-13.84	Peak
2 pp	2509.20	-48.18	-38.19	-13.00	-35.18	-9.99	Peak

LTE BAND 5

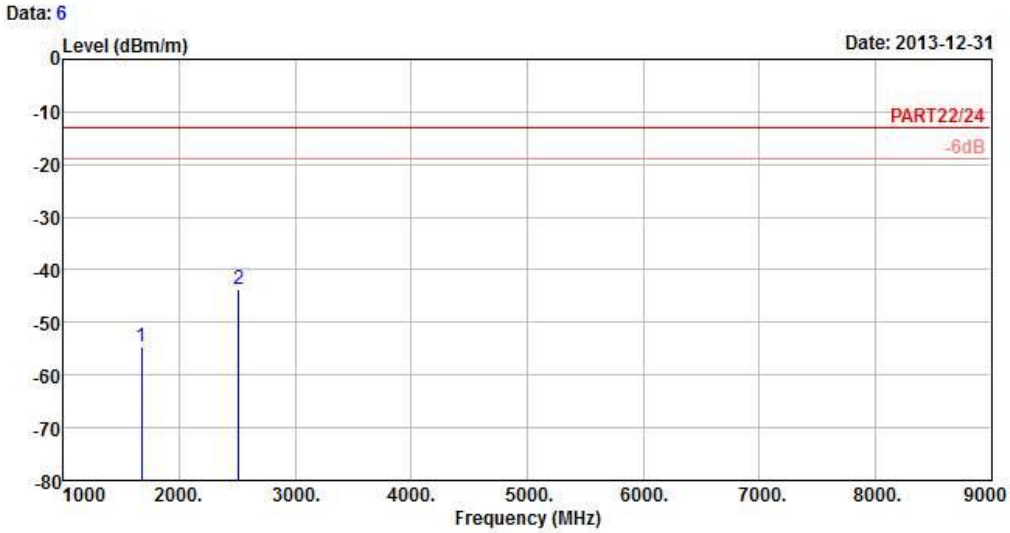
CHANNEL BANDWIDTH: 5MHz / QPSK

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition : PART22/24 3m HORIZONTAL
Brand/Model: A91 (Phone+Pad)
Remark : LTE Band 5_5M QPSK(1,12) Link
Tested by : Anson Lin
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	1673.00	-55.18	-41.34	-13.00	-42.18	-13.84	Peak
2 pp	2509.50	-52.22	-42.23	-13.00	-39.22	-9.99	Peak



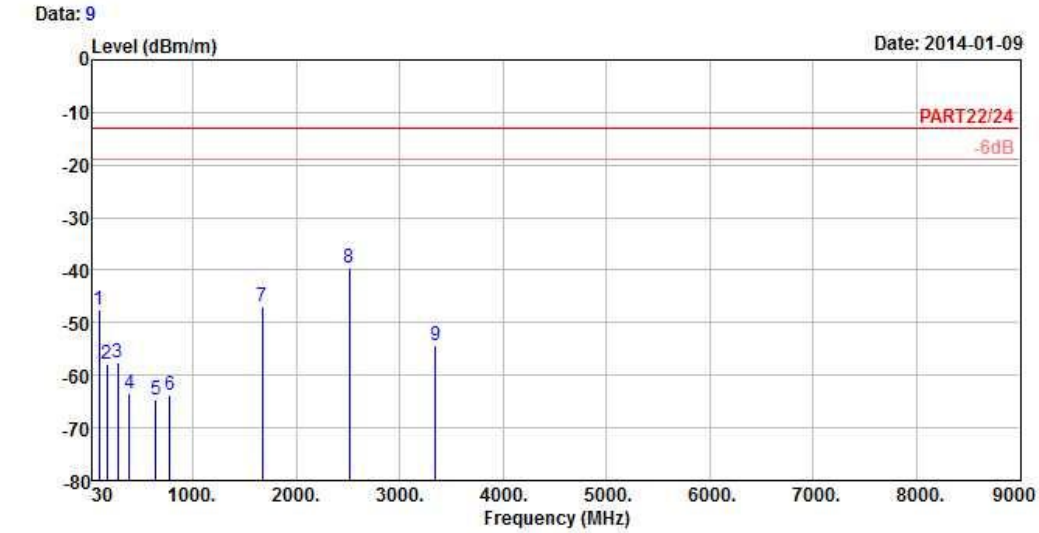
Site : 966 Chamber 5
Condition : PART22/24 3m VERTICAL
Brand/Model: A91 (Phone+Pad)
Remark : LTE Band 5_5M QPSK(1,12) Link
Tested by : Anson Lin
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	1673.00	-54.60	-40.76	-13.00	-41.60	-13.84	Peak
2 pp	2509.50	-43.69	-33.70	-13.00	-30.69	-9.99	Peak

LTE BAND 5

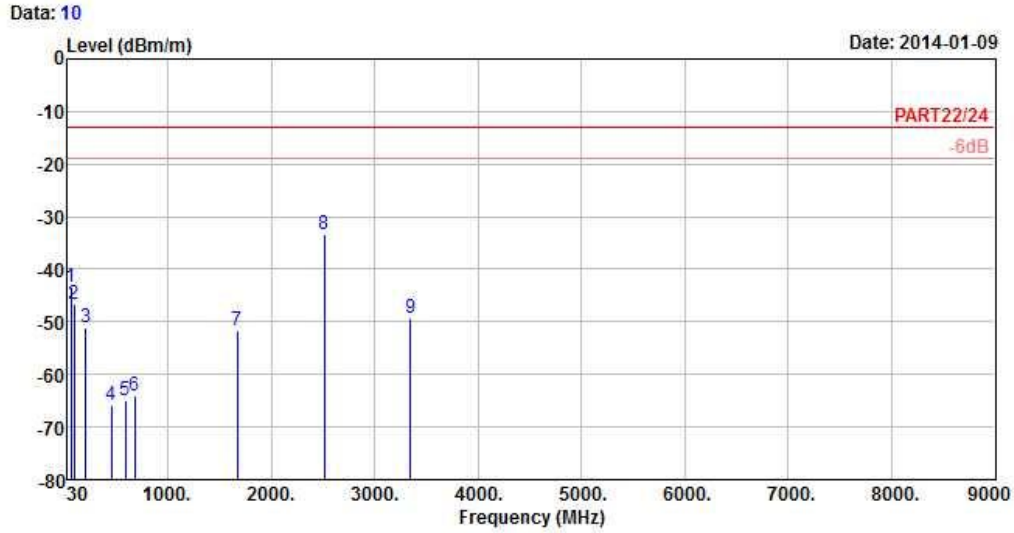
CHANNEL BANDWIDTH: 10MHz / QPSK

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition : PART22/24 3m HORIZONTAL
Brand/Model: A91 (Phone+Pad)
Remark : LTE Band 5_10M QPSK(1,24) Link
Tested by : Anson Lin
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	92.10	-47.44	-36.90	-13.00	-34.44	-10.54	Peak
2	166.62	-57.98	-51.34	-13.00	-44.98	-6.64	Peak
3	270.84	-57.55	-51.58	-13.00	-44.55	-5.97	Peak
4	388.90	-63.33	-57.61	-13.00	-50.33	-5.72	Peak
5	643.00	-64.75	-65.17	-13.00	-51.75	0.42	Peak
6	773.20	-63.63	-65.58	-13.00	-50.63	1.95	Peak
7	1673.00	-46.79	-32.95	-13.00	-33.79	-13.84	Peak
8 pp	2509.50	-39.42	-29.43	-13.00	-26.42	-9.99	Peak
9	3346.00	-54.17	-44.81	-13.00	-41.17	-9.36	Peak



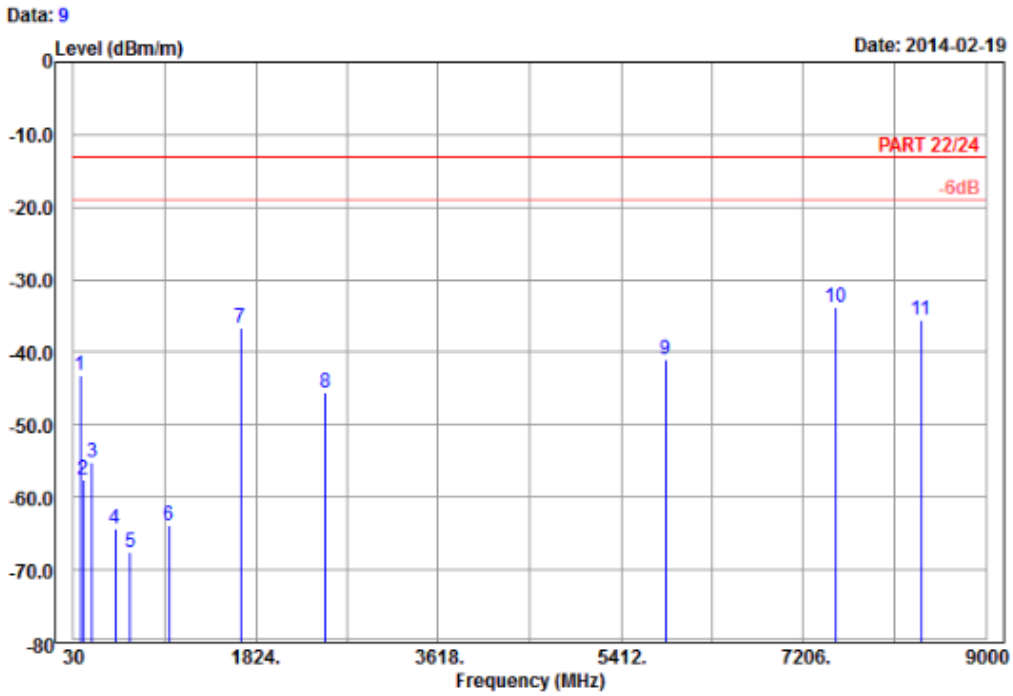
Site : 966 Chamber 5
Condition : PART22/24 3m VERTICAL
Brand/Model: A91 (Phone+Pad)
Remark : LTE Band 5_10M QPSK(1,24) Link
Tested by : Anson Lin
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	62.40	-43.52	-36.77	-13.00	-30.52	-6.75	Peak
2	96.15	-46.67	-36.20	-13.00	-33.67	-10.47	Peak
3	208.74	-51.15	-43.59	-13.00	-38.15	-7.56	Peak
4	451.90	-65.78	-61.46	-13.00	-52.78	-4.32	Peak
5	587.70	-64.88	-64.18	-13.00	-51.88	-0.70	Peak
6	681.50	-64.05	-65.17	-13.00	-51.05	1.12	Peak
7	1673.00	-51.80	-37.96	-13.00	-38.80	-13.84	Peak
8 pp	2509.50	-33.36	-23.37	-13.00	-20.36	-9.99	Peak
9	3346.00	-49.23	-39.87	-13.00	-36.23	-9.36	Peak

MODE C

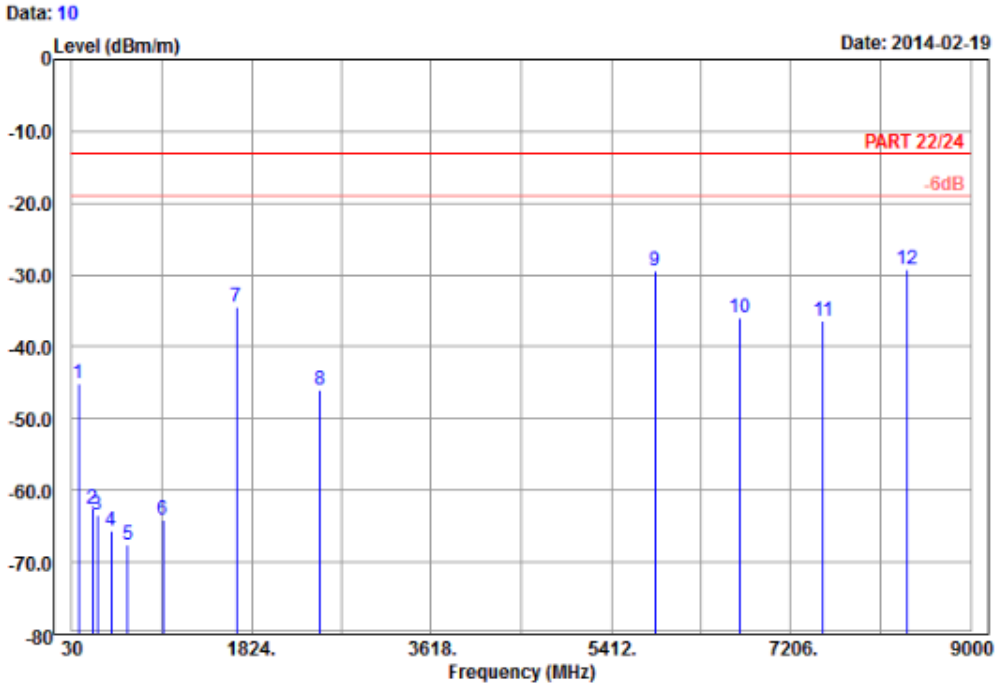
GSM:

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 5
Condition : PART 22/24 3m Horizontal
Brand/Model: A91_2nd
Remark : GSM850_Link_CH189
Tested by : Dylan Yang
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	98.04	-43.16	-32.93	-13.00	-30.16	-10.23	Peak
2	126.12	-57.55	-49.66	-13.00	-44.55	-7.89	Peak
3	212.52	-55.11	-49.10	-13.00	-42.11	-6.01	Peak
4	436.50	-64.36	-60.81	-13.00	-51.36	-3.55	Peak
5	587.70	-67.58	-67.48	-13.00	-54.58	-0.10	Peak
6	972.70	-63.88	-69.06	-13.00	-50.88	5.18	Peak
7	1672.80	-36.57	-44.48	-13.00	-23.57	7.91	Peak
8	2509.20	-45.62	-56.90	-13.00	-32.62	11.28	Peak
9	5854.80	-40.92	-61.70	-13.00	-27.92	20.78	Peak
10 pp	7527.60	-33.78	-56.63	-13.00	-20.78	22.85	Peak
11	8364.00	-35.56	-59.69	-13.00	-22.56	24.13	Peak



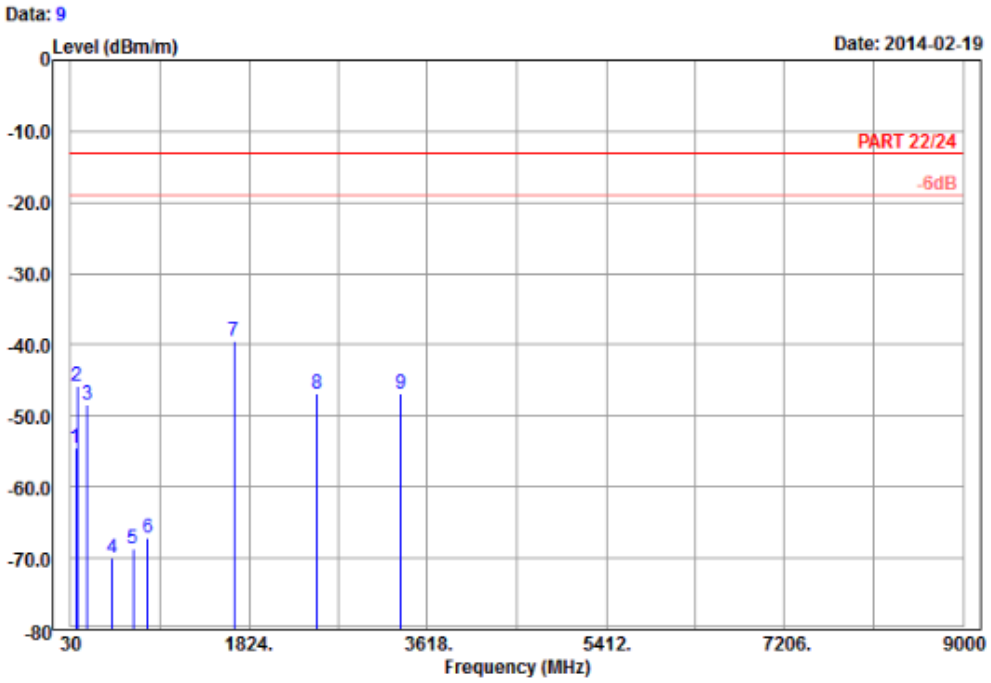
Site : 966 chamber 5
Condition : PART 22/24 3m Vertical
Brand/Model: A91_2nd
Remark : GSM850_Link_CH189
Tested by : Dylan Yang
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	95.61	-45.15	-34.81	-13.00	-32.15	-10.34	Peak
2	236.01	-62.61	-56.91	-13.00	-49.61	-5.70	Peak
3	284.07	-63.48	-57.66	-13.00	-50.48	-5.82	Peak
4	426.00	-65.57	-62.26	-13.00	-52.57	-3.31	Peak
5	588.40	-67.54	-67.49	-13.00	-54.54	-0.05	Peak
6	940.50	-64.06	-68.77	-13.00	-51.06	4.71	Peak
7	1672.80	-34.37	-42.28	-13.00	-21.37	7.91	Peak
8	2509.20	-46.09	-57.37	-13.00	-33.09	11.28	Peak
9	5854.80	-29.49	-50.27	-13.00	-16.49	20.78	Peak
10	6691.20	-35.86	-58.26	-13.00	-22.86	22.40	Peak
11	7527.60	-36.39	-59.24	-13.00	-23.39	22.85	Peak
12 pp	8364.00	-29.18	-53.31	-13.00	-16.18	24.13	Peak

LTE BAND 5

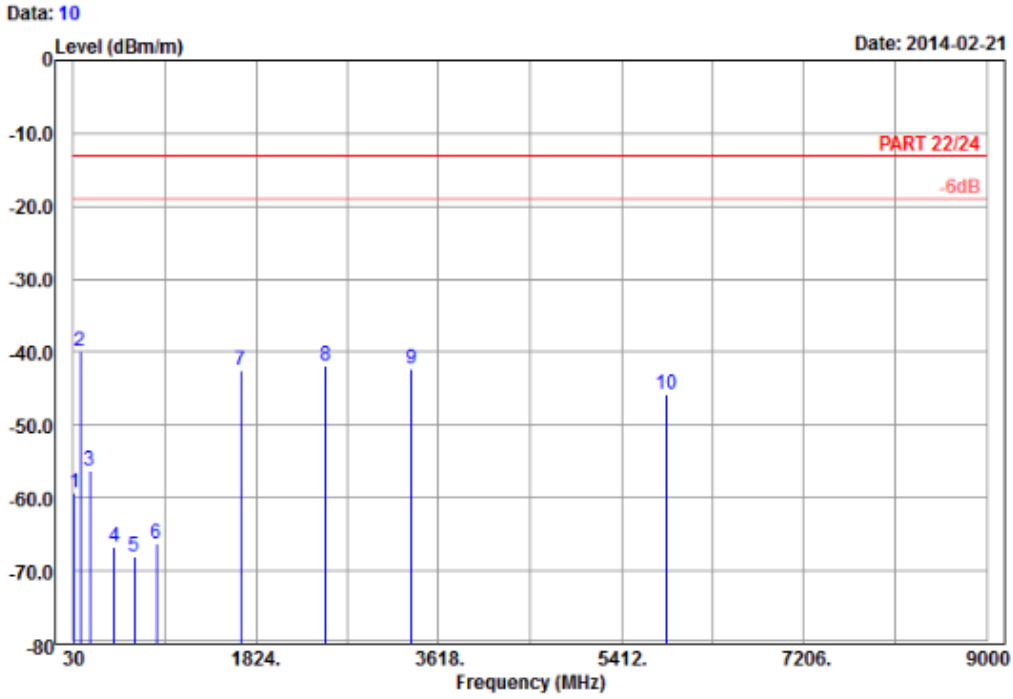
CHANNEL BANDWIDTH: 5MHz / QPSK

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 5
Condition : PART 22/24 3m Horizontal
Brand/Model: A91_2nd
Remark : LTE_Band 5 5M Link_CH20525
Tested by : Dylan Yang
Plane : X

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	78.06	-54.43	-42.50	-13.00	-41.43	-11.93	Peak
2	96.42	-45.80	-35.46	-13.00	-32.80	-10.34	Peak
3	194.16	-48.37	-42.46	-13.00	-35.37	-5.91	Peak
4	449.80	-70.00	-66.15	-13.00	-57.00	-3.85	Peak
5	656.30	-68.74	-68.57	-13.00	-55.74	-0.17	Peak
6	808.90	-67.21	-69.12	-13.00	-54.21	1.91	Peak
7 pp	1673.00	-39.48	-47.39	-13.00	-26.48	7.91	Peak
8	2509.50	-46.89	-58.17	-13.00	-33.89	11.28	Peak
9	3346.00	-46.83	-61.28	-13.00	-33.83	14.45	Peak



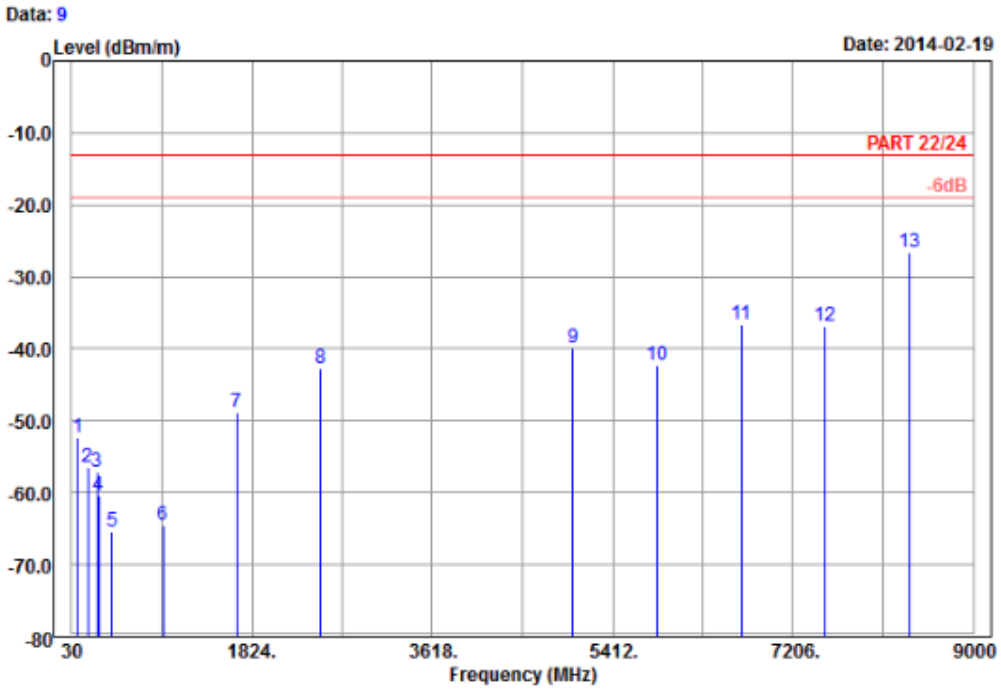
Site : 966 chamber 5
Condition : PART 22/24 3m Vertical
Brand/Model: A91_2nd
Remark : LTE_Band 5 5M Link_CH20525
Tested by : Dylan Yang
Plane : X

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	44.31	-59.22	-47.05	-13.00	-46.22	-12.17	Peak
2 pp	96.15	-39.91	-29.57	-13.00	-26.91	-10.34	Peak
3	191.73	-56.17	-50.35	-13.00	-43.17	-5.82	Peak
4	430.90	-66.80	-63.38	-13.00	-53.80	-3.42	Peak
5	626.20	-68.06	-68.19	-13.00	-55.06	0.13	Peak
6	843.20	-66.17	-67.70	-13.00	-53.17	1.53	Peak
7	1673.00	-42.57	-50.48	-13.00	-29.57	7.91	Peak
8	2509.50	-41.77	-53.05	-13.00	-28.77	11.28	Peak
9	3346.00	-42.27	-56.72	-13.00	-29.27	14.45	Peak
10	5855.50	-45.79	-66.57	-13.00	-32.79	20.78	Peak

MODE D

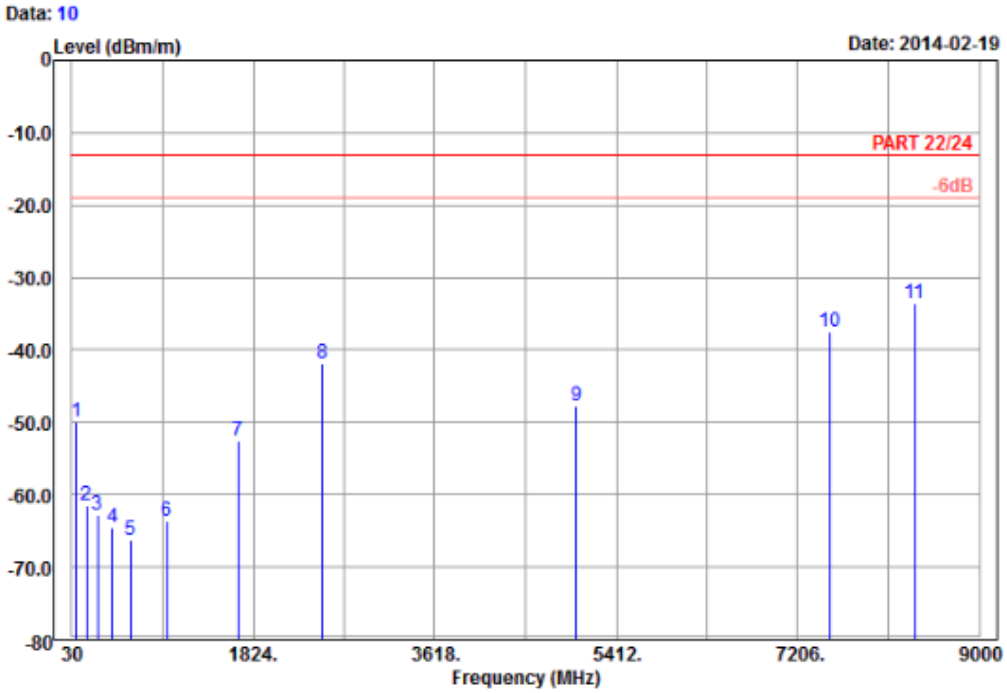
GSM:

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 5
Condition : PART 22/24 3m Horizontal
Brand/Model: A91_2nd
Remark : GSM850_Link_CH189 (phone+pad)
Tested by : Dylan Yang
Plane : Z

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	92.10	-52.27	-41.71	-13.00	-39.27	-10.56	Peak
2	190.11	-56.36	-50.63	-13.00	-43.36	-5.73	Peak
3	280.02	-57.05	-51.27	-13.00	-44.05	-5.78	Peak
4	302.10	-60.45	-54.52	-13.00	-47.45	-5.93	Peak
5	431.60	-65.47	-62.03	-13.00	-52.47	-3.44	Peak
6	942.60	-64.49	-69.29	-13.00	-51.49	4.80	Peak
7	1672.80	-48.73	-56.64	-13.00	-35.73	7.91	Peak
8	2509.20	-42.69	-53.97	-13.00	-29.69	11.28	Peak
9	5018.40	-39.79	-58.87	-13.00	-26.79	19.08	Peak
10	5854.80	-42.26	-63.04	-13.00	-29.26	20.78	Peak
11	6691.20	-36.72	-59.12	-13.00	-23.72	22.40	Peak
12	7527.60	-36.87	-59.72	-13.00	-23.87	22.85	Peak
13 pp	8364.00	-26.66	-50.79	-13.00	-13.66	24.13	Peak



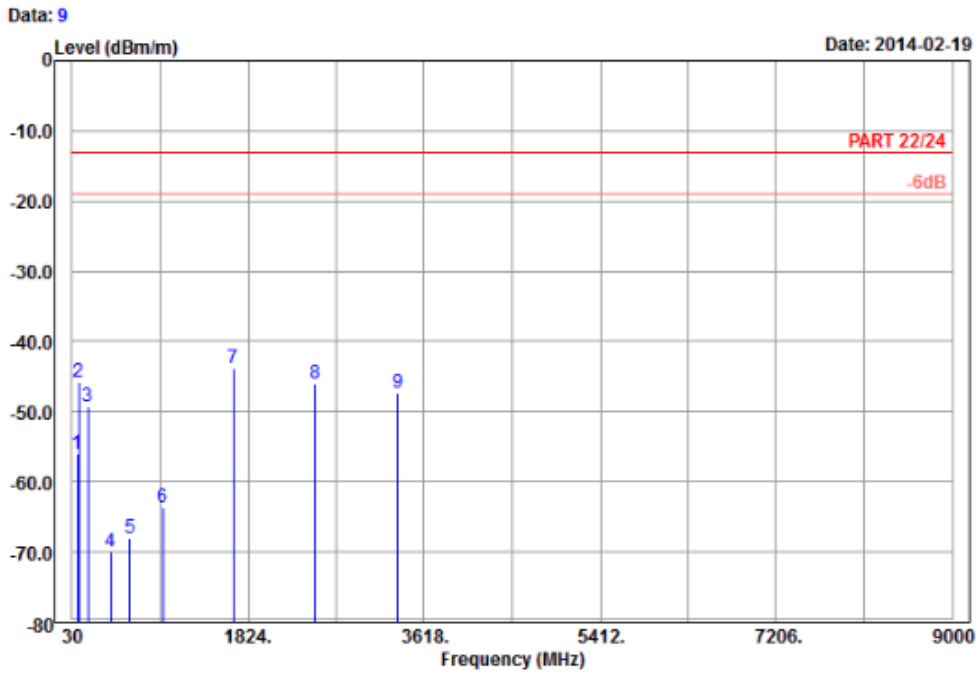
Site : 966 chamber 5
Condition : PART 22/24 3m Vertical
Brand/Model: A91_2nd
Remark : GSM850_Link_CH189 (phone+pad)
Tested by : Dylan Yang
Plane : Z

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	74.28	-49.88	-37.61	-13.00	-36.88	-12.27	Peak
2	177.69	-61.44	-55.56	-13.00	-48.44	-5.88	Peak
3	282.18	-62.84	-57.04	-13.00	-49.84	-5.80	Peak
4	430.20	-64.46	-61.04	-13.00	-51.46	-3.42	Peak
5	613.60	-66.21	-66.48	-13.00	-53.21	0.27	Peak
6	969.20	-63.63	-68.80	-13.00	-50.63	5.17	Peak
7	1672.80	-52.56	-60.47	-13.00	-39.56	7.91	Peak
8	2509.20	-41.95	-53.23	-13.00	-28.95	11.28	Peak
9	5018.40	-47.80	-66.88	-13.00	-34.80	19.08	Peak
10	7527.60	-37.44	-60.29	-13.00	-24.44	22.85	Peak
11 pp	8364.00	-33.64	-57.77	-13.00	-20.64	24.13	Peak

LTE BAND 5

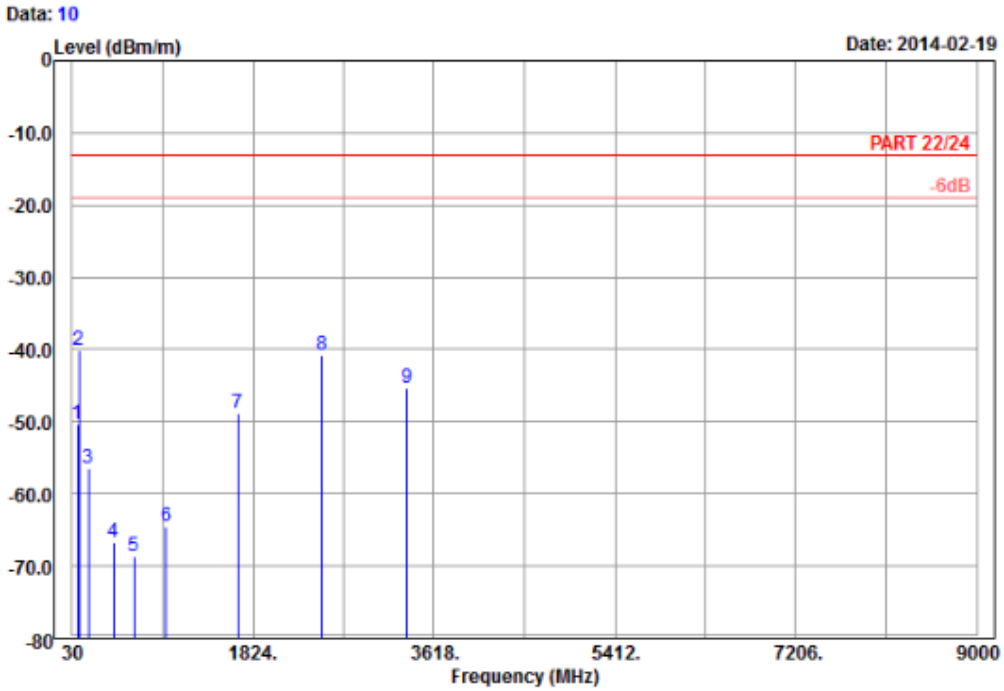
CHANNEL BANDWIDTH: 5MHz / QPSK

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 5
Condition : PART 22/24 3m Horizontal
Brand/Model: A91_2nd
Remark : LTE_Band 5 5M Link_CH20525 (Pad+Phone)
Tested by : Dylan Yang
Plane : X

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	78.60	-56.10	-44.17	-13.00	-43.10	-11.93	Peak
2	96.42	-45.72	-35.38	-13.00	-32.72	-10.34	Peak
3	192.81	-49.21	-43.34	-13.00	-36.21	-5.87	Peak
4	425.30	-70.03	-66.72	-13.00	-57.03	-3.31	Peak
5	622.00	-68.02	-68.20	-13.00	-55.02	0.18	Peak
6	951.00	-63.66	-68.77	-13.00	-50.66	5.11	Peak
7 pp	1673.00	-43.77	-51.68	-13.00	-30.77	7.91	Peak
8	2509.50	-45.89	-57.17	-13.00	-32.89	11.28	Peak
9	3346.00	-47.27	-61.72	-13.00	-34.27	14.45	Peak



Site : 966 chamber 5
Condition : PART 22/24 3m Vertical
Brand/Model: A91_2nd
Remark : LTE_Band 5 5M Link_CH20525 (Pad+Phone)
Tested by : Dylan Yang
Plane : X

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	78.60	-50.25	-38.32	-13.00	-37.25	-11.93	Peak
2 pp	95.61	-40.02	-29.68	-13.00	-27.02	-10.34	Peak
3	190.38	-56.42	-50.69	-13.00	-43.42	-5.73	Peak
4	437.20	-66.69	-63.12	-13.00	-53.69	-3.57	Peak
5	645.10	-68.67	-68.59	-13.00	-55.67	-0.08	Peak
6	964.30	-64.55	-69.70	-13.00	-51.55	5.15	Peak
7	1673.00	-48.91	-56.82	-13.00	-35.91	7.91	Peak
8	2509.50	-40.80	-52.08	-13.00	-27.80	11.28	Peak
9	3346.00	-45.27	-59.72	-13.00	-32.27	14.45	Peak

5 PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).

6 INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:
Tel: 886-2-26052180
Fax: 886-2-26051924

Hsin Chu EMC/RF Lab:
Tel: 886-3-5935343
Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety/Telecom Lab:
Tel: 886-3-3183232
Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com
Web Site: www.bureauveritas-adt.com

The address and road map of all our labs can be found in our web site also.

7 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications were made to the EUT by the lab during the test.

---END---