

Partial FCC Test Report

(PART 24)

Report No.: RF161003C38-6

FCC ID: QYLEM7355Z

Test Model: EM7355Z

Received Date: Oct. 03, 2016

Test Date: Oct. 26, 2016 ~ Nov.02, 2016

Issued Date: Nov. 14, 2016

Applicant: Getac Technology Corporation.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

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Release Control Record

Issue No.	Description	Date Issued
RF161003C38-6	Original Release	Nov. 14, 2016

1 Certificate of Conformity

Product: Radio Module

Brand: Getac

Test Model: EM7355Z

Sample Status: Identical Prototype

Applicant: Getac Technology Corporation.

Test Date: Oct. 26, 2016 ~ Nov.02, 2016

Standards: FCC Part 24, Subpart E

The above equipment 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 : Gina Liu , **Date:** Nov. 14, 2016
Gina Liu / Specialist

Approved by : Stanley Wu , **Date:** Nov. 14, 2016
Stanley Wu / Assistant Manager

2 Summary of Test Results

Applied Standard: FCC Part 24 & Part 2			
FCC Clause	Test Item	Result	Remarks
2.1046 24.232	Effective Isotropic Radiated Power	Pass	Meet the requirement of limit.
2.1046 24.232(d)	Peak to Average Ratio	N/A	Refer to Note
2.1055 24.235	Frequency Stability	N/A	Refer to Note
2.1049 24.238(b)	Occupied Bandwidth	N/A	Refer to Note
24.238(b)	Band Edge Measurements	N/A	Refer to Note
2.1051 24.238	Conducted Spurious Emissions	N/A	Refer to Note
2.1053 24.238	Radiated Spurious Emissions	N/A	Refer to Note

Note: Only test item of EIRP was performed for this report. Other testing data please refer to Sierra Wireless, Inc. EM7355 2G/3G/4G/CDMA Reports for module (FCC ID: E7NEM7355)

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	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150 kHz ~ 30 MHz	2.44 dB
Radiated Emissions up to 1 GHz	30 MHz ~ 200 MHz	2.93 dB
	200 MHz ~ 1000 MHz	2.95 dB
Radiated Emissions above 1 GHz	1 GHz ~ 18 GHz	2.26 dB
	18 GHz ~ 40 GHz	1.94 dB

2.2 Test Site And Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver Agilent	N9038A	MY51210203	Jan. 21, 2016	Jan. 20, 2017
Signal Generator Agilent	N5182B	MY53050430	Oct. 19, 2016	Oct. 18, 2017
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 17, 2015	Dec. 16, 2016
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Jan. 07, 2016	Jan. 06, 2017
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Jan. 04, 2016	Jan. 03, 2017
Double Ridge Guide Horn Antenna EMCO	3115	5619	Jan. 04, 2016	Jan. 03, 2017
BILOG Antenna SCHWARZBECK	VULB 9168	9168-153	Jan. 07, 2016	Jan. 06, 2017
Agilent Communications Tester-Wireless	8960 Series 10	MY53201073	Jul. 03, 2015	Jul. 02, 2017
Preamplifier EMCI	EMC 012645	980115	Dec. 21, 2015	Dec. 20, 2016
Preamplifier EMCI	EMC 184045	980116	Dec. 21, 2015	Dec. 20, 2016
Preamplifier EMCI	EMC 330H	980112	Dec. 28, 2015	Dec. 27, 2016
Power Meter Anritsu	ML2495A	1232002	Sep. 08, 2016	Sep. 07, 2017
Power Sensor Anritsu	MA2411B	1207325	Sep. 08, 2016	Sep. 07, 2017
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309219/4 2950114	Oct. 21, 2016	Oct. 20, 2017
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250130/4	Oct. 21, 2016	Oct. 20, 2017
RF Coaxial Cable Worken	8D-FB	Cable-Ch10-01	Oct. 21, 2016	Oct. 20, 2017
Software BV ADT	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
Radio Communication Analyzer	MT8820C	6201300640	Aug. 10, 2015	Aug. 09, 2017
Temperature & Humidity Chamber	GTH-120-40-CP-A R	MAA1306-019	Sep. 02, 2016	Sep. 01, 2017
DC Power Supply Topward	33010D	807748	Oct. 27, 2015 Oct. 25, 2016	Oct. 26, 2016 Oct. 24, 2017
Digital Multimeter Fluke	87-III	70360742	Jul. 01, 2016	Jun. 30, 2017

- Note: 1. The calibration interval of the above test instruments is 12 / 24 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 preamplifier (model: EMC 184045) are used only for the measurement of emission frequency above 1 GHz if tested.
4. The FCC Site Registration No. is 690701.
5. The IC Site Registration No. is IC7450F-10.

3 General Information

3.1 General Description of EUT

Product	Radio Module	
Brand	Getac	
Test Model	EM7355Z	
Status of EUT	Identical Prototype	
Power Supply Rating	12.0 Vdc (adapter) 3.8 Vdc (Li-ion battery)	
Modulation Type	GSM/GPRS	GMSK
	EDGE	GMSK, 8PSK
	WCDMA	BPSK
	CDMA	QPSK, OQPSK, HPSK
	LTE	QPSK, 16QAM
Frequency Range	GSM/GPRS/EDGE	1850.2 ~ 1909.8 MHz
	WCDMA	1852.4 ~ 1907.6 MHz
	CDMA	1851.3 ~ 1908.8 MHz
	LTE Band 2 (Channel Bandwidth: 1.4 MHz)	1850.7 ~ 1909.3 MHz
	LTE Band 2 (Channel Bandwidth: 3 MHz)	1851.5 ~ 1908.5 MHz
	LTE Band 2 (Channel Bandwidth: 5 MHz)	1852.5 ~ 1907.5 MHz
	LTE Band 2 (Channel Bandwidth: 10 MHz)	1855.0 ~ 1905.0 MHz
	LTE Band 2 (Channel Bandwidth: 15 MHz)	1857.5 ~ 1902.5 MHz
	LTE Band 2 (Channel Bandwidth: 20 MHz)	1860.0 ~ 1900.0 MHz
	LTE Band 25 (Channel Bandwidth: 1.4 MHz)	1850.7 ~ 1914.3 MHz
	LTE Band 25 (Channel Bandwidth: 3 MHz)	1851.5 ~ 1913.5 MHz
	LTE Band 25 (Channel Bandwidth: 5 MHz)	1852.5 ~ 1912.5 MHz
	LTE Band 25 (Channel Bandwidth: 10 MHz)	1855.0 ~ 1910.0 MHz
	LTE Band 25 (Channel Bandwidth: 15 MHz)	1857.5 ~ 1907.5 MHz
	LTE Band 25 (Channel Bandwidth: 20 MHz)	1860.0 ~ 1905.0 MHz
Max. EIRP Power	GSM/GPRS	907.82 mW
	EDGE	352.37 mW
	WCDMA	194.54 mW
	CDMA	405.51 mW
	LTE Band 2 (Channel Bandwidth: 1.4 MHz)	360.00 mW
	LTE Band 2 (Channel Bandwidth: 3 MHz)	363.08 mW
	LTE Band 2 (Channel Bandwidth: 5 MHz)	362.24 mW
	LTE Band 2 (Channel Bandwidth: 10 MHz)	358.10 mW
	LTE Band 2 (Channel Bandwidth: 15 MHz)	359.17 mW
	LTE Band 2 (Channel Bandwidth: 20 MHz)	358.92 mW
	LTE Band 25 (Channel Bandwidth: 1.4 MHz)	323.59 mW
	LTE Band 25 (Channel Bandwidth: 3 MHz)	322.11 mW
	LTE Band 25 (Channel Bandwidth: 5 MHz)	321.37 mW
	LTE Band 25 (Channel Bandwidth: 10 MHz)	320.63 mW
	LTE Band 25 (Channel Bandwidth: 15 MHz)	322.11 mW
	LTE Band 25 (Channel Bandwidth: 20 MHz)	322.85 mW

Antenna Type	PIFA Antenna
Accessory Device	Refer to Note as below
Data Cable Supplied	Refer to Note as below

Note:

1. The EUT is authorized for use in specific End-product. Please refer to below table for more details.

Item	Brand	Model
Tablet	Getac	ZX70

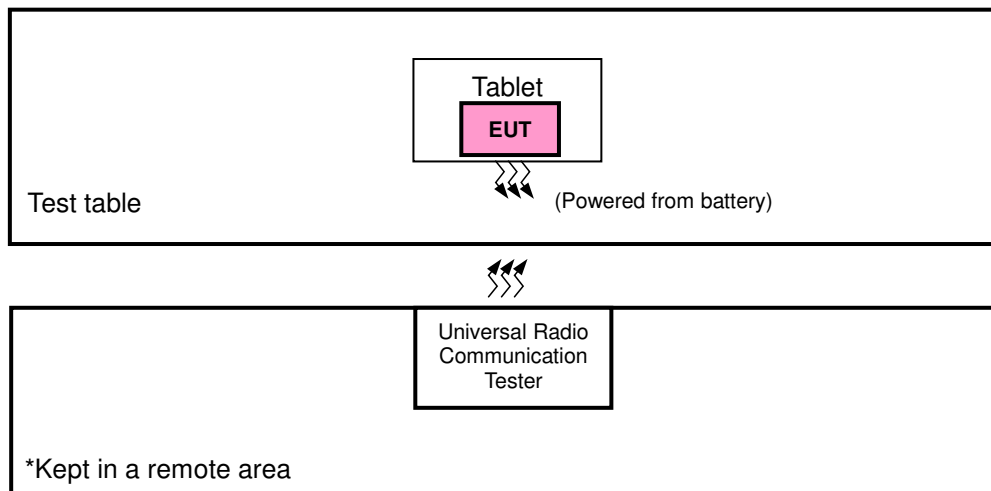
2. The End-product contains following accessory devices.

Product	Brand	Model	Description
Adapter	APD	WA24Q12R	I/P: 100-240 Vac, 50/60 Hz, 0.7 A O/P: 12 Vdc, 2 A 1.75m shielded cable with 1 core
Battery	Getac	BP1S2P4240L	3.8 Vdc, 8480 mAh
LCD Panel	Truly	TDO-HD0698K61701	7"
Photo Camera	Chicony	CWFFF2520005340LH	2MPs HD Fix focus camera
Video Camera	Chicony	CYAF82520005340LH	8MPs auto focus camera
CPU	intel	Atom Z8350	592 PIN
Memory	Samsung	K4E6E304EE-EGCE	DDR3 4G (2G*2)
Storage	Samsung	KLMBG4GEND-B031	32G
GPS	U-blox	MAX-M8N	
BT/WLAN Module	AMPAK	AP6234	
RFID	Jogtek	TRF7970A	
WWAN Module	Sierra	EM7355Z	
Fingerprint	IMD	SF1115	

3. The above EUT information is 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

<E.I.R.P. Test>



3.2.1 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.	Tablet	Getac	ZX70	N/A	N/A

No.	Signal Cable Description Of The Above Support Units
1.	N/A

Note:

1. All power cords of the above support units are non-shielded (1.8m).

3.3 Test Mode Applicability and Tested Channel Detail

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 when positioned as the table below. Following channel(s) was (were) selected for the final test as listed below:

Band	EIRP	Radiated Emission	EIRP
GSM	X-plane	CDMA	Y-plane
EDGE	X-plane	LTE Band 2	Y-plane
WCDMA	X-plane	LTE Band 25	Y-plane

GSM

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Mode
-	EIRP	512 to 810	512, 661, 810	GSM, EDGE

WCDMA

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Mode
-	EIRP	9262 to 9538	9262, 9400, 9538	WCDMA

CDMA

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Mode
-	ERP	25 to 1175	25, 600, 1175	1xRTT

LTE Band 2

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	EIRP	18607 to 19193	18607, 18900, 19193	1.4 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		18615 to 19185	18615, 18900, 19185	3 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		18625 to 19175	18625, 18900, 19175	5 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		18650 to 19150	18650, 18900, 19150	10 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		18675 to 19125	18675, 18900, 19125	15 MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		18700 to 19100	18700, 18900, 19100	20 MHz	QPSK, 16QAM	1 RB / 0 RB Offset

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

LTE Band 25

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	EIRP	26047 to 26683	26047, 26365, 26683	1.4 MHz	QPSK / 16QAM	1 RB / 0 RB Offset
		26055 to 26675	26055, 26365, 26675	3 MHz	QPSK / 16QAM	1 RB / 0 RB Offset
		26065 to 26665	26065, 26365, 26665	5 MHz	QPSK / 16QAM	1 RB / 0 RB Offset
		26090 to 26640	26090, 26365, 26640	10 MHz	QPSK / 16QAM	1 RB / 0 RB Offset
		26115 to 26615	26115, 26365, 26615	15 MHz	QPSK / 16QAM	1 RB / 0 RB Offset
		26140 to 26590	26140, 26365, 26590	20 MHz	QPSK / 16QAM	1 RB / 0 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
EIRP	26 deg. C, 58 % RH	3.8 Vdc	Getaz Yang

3.4 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

3.5 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 24

KDB 971168 D01 Power Meas License Digital Systems v02r02

ANSI/TIA/EIA-603-D 2010

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 2 watts e.i.r.p.

4.1.2 Test Procedures

EIRP / ERP Measurement:

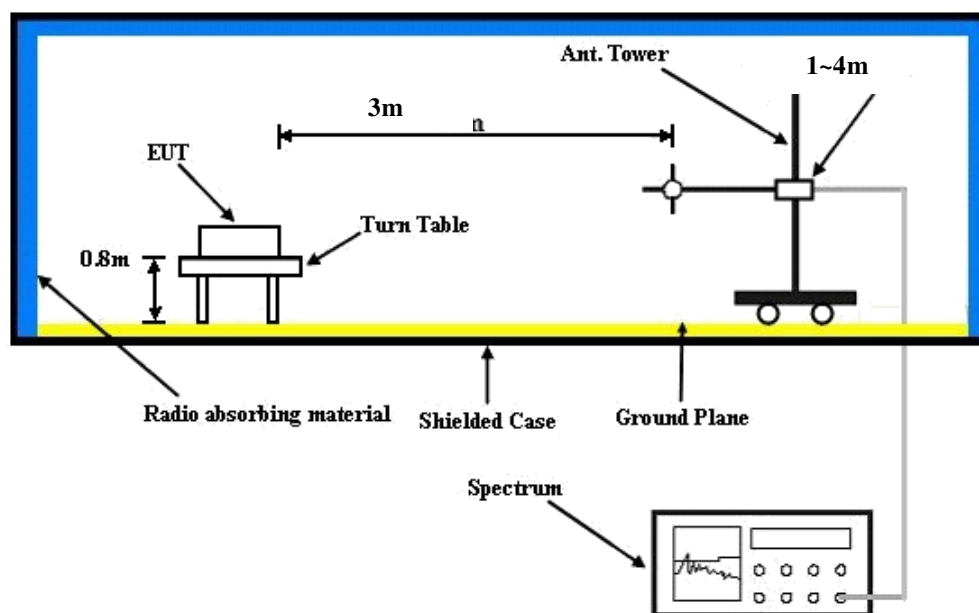
- a. All measurements were done at low, middle and high operational frequency range. RBW and VBW is 1 MHz for GSM, GPRS & EDGE, 5 MHz for WCDMA and CDMA, and 10 MHz for LTE mode.
- b. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8 m height of 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. $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$. E.R.P power can be calculated from E.I.R.P power by subtracting the gain of dipole, $E.R.P \text{ power} = E.I.P.R \text{ power} - 2.15 \text{ dBi}$.

Conducted Power Measurement:

The EUT was set up for the maximum power with GSM, GPRS, EDGE, WCDMA, CDMA, and LTE 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:



4.1.4 Test Results

Conducted Output Power (dBm)

Band	GSM1900		
Channel	512	661	810
Frequency (MHz)	1850.2	1880.0	1909.8
GPRS (GMSK, 1Tx-slot)	29.99	30.23	30.11
GPRS (GMSK, 2Tx-slot)	29.95	30.19	30.07
EDGE (8PSK, 1Tx-slot)	25.57	25.81	25.69
EDGE (8PSK, 2Tx-slot)	25.46	25.70	25.58
EDGE (8PSK, 3Tx-slot)	25.43	25.67	25.55
EDGE (8PSK, 4Tx-slot)	25.32	25.56	25.44

Band	WCDMA II		
Channel	9262	9400	9538
Frequency (MHz)	1852.4	1880.0	1907.6
RMC 12.2K	23.18	23.24	23.17
HSDPA Subtest-1	22.68	22.74	22.67
HSDPA Subtest-2	22.61	22.67	22.60
HSDPA Subtest-3	22.14	22.20	22.13
HSDPA Subtest-4	22.10	22.16	22.09
HSUPA Subtest-1	21.41	21.47	21.40
HSUPA Subtest-2	20.24	20.30	20.23
HSUPA Subtest-3	20.97	21.00	20.96
HSUPA Subtest-4	20.14	20.20	20.13
HSUPA Subtest-5	21.24	21.30	21.23

Band	CDMA		
Channel	25	600	1175
Frequency (MHz)	1851.25	1880	1908.75
RC1+SO55	23.88	23.93	23.98
RC3+SO55	23.90	23.95	24.00
RC3+SO32 (+F-SCH)	23.86	23.91	23.96
RC3+SO32 (+SCH)	23.84	23.89	23.94
RTAP 153.6	23.80	23.85	23.90
RETAP 4096	23.78	23.83	23.88

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 18607	Mid Ch 18900	High Ch 19193		Low Ch 18607	Mid Ch 18900	High Ch 19193	
			1850.7 MHz	1880.0 MHz	1909.3 MHz		1850.7 MHz	1880.0 MHz	1909.3 MHz	
2 / 1.4M	1	0	22.62	22.54	22.57	0	21.61	21.53	21.56	1
	1	2	22.76	22.68	22.71	0	21.75	21.67	21.70	1
	1	5	22.61	22.53	22.56	0	21.60	21.52	21.55	1
	3	0	22.36	22.28	22.31	0	21.35	21.27	21.30	1
	3	1	22.38	22.30	22.33	0	21.37	21.29	21.32	1
	3	3	22.29	22.21	22.24	0	21.28	21.20	21.23	1
	6	0	21.28	21.20	21.23	1	20.27	20.19	20.22	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 18615	Mid Ch 18900	High Ch 19185		Low Ch 18615	Mid Ch 18900	High Ch 19185	
			1851.5 MHz	1880.0 MHz	1908.5 MHz		1851.5 MHz	1880.0 MHz	1908.5 MHz	
2 / 3M	1	0	22.77	22.69	22.72	0	21.76	21.68	21.71	1
	1	7	22.91	22.83	22.86	0	21.90	21.82	21.85	1
	1	14	22.76	22.68	22.71	0	21.75	21.67	21.70	1
	8	0	21.51	21.43	21.46	1	20.50	20.42	20.45	2
	8	3	21.53	21.45	21.48	1	20.52	20.44	20.47	2
	8	7	21.44	21.36	21.39	1	20.43	20.35	20.38	2
	15	0	21.43	21.35	21.38	1	20.42	20.34	20.37	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 18625	Mid Ch 18900	High Ch 19175		Low Ch 18625	Mid Ch 18900	High Ch 19175	
			1852.5 MHz	1880.0 MHz	1907.5 MHz		1852.5 MHz	1880.0 MHz	1907.5 MHz	
2 / 5M	1	0	22.98	22.90	22.93	0	21.97	21.89	21.92	1
	1	12	23.12	23.04	23.07	0	22.11	22.03	22.06	1
	1	24	22.97	22.89	22.92	0	21.96	21.88	21.91	1
	12	0	21.72	21.64	21.67	1	20.71	20.63	20.66	2
	12	6	21.74	21.66	21.69	1	20.73	20.65	20.68	2
	12	13	21.65	21.57	21.60	1	20.64	20.56	20.59	2
	25	0	21.64	21.56	21.59	1	20.63	20.55	20.58	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 18650	Mid Ch 18900	High Ch 19150		Low Ch 18650	Mid Ch 18900	High Ch 19150	
			1855.0 MHz	1880.0 MHz	1905.0 MHz		1855.0 MHz	1880.0 MHz	1905.0 MHz	
2 / 10M	1	0	23.10	23.02	23.05	0	22.09	22.01	22.04	1
	1	24	23.24	23.16	23.19	0	22.23	22.15	22.18	1
	1	49	23.09	23.01	23.04	0	22.08	22.00	22.03	1
	25	0	21.84	21.76	21.79	1	20.83	20.75	20.78	2
	25	12	21.86	21.78	21.81	1	20.85	20.77	20.80	2
	25	25	21.77	21.69	21.72	1	20.76	20.68	20.71	2
	50	0	21.76	21.68	21.71	1	20.75	20.67	20.70	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 18675	Mid Ch 18900	High Ch 19125		Low Ch 18675	Mid Ch 18900	High Ch 19125	
			1857.5 MHz	1880.0 MHz	1902.5 MHz		1857.5 MHz	1880.0 MHz	1902.5 MHz	
2 / 15M	1	0	23.33	23.25	23.28	0	22.32	22.24	22.27	1
	1	37	23.47	23.39	23.42	0	22.46	22.38	22.41	1
	1	74	23.32	23.24	23.27	0	22.31	22.23	22.26	1
	36	0	22.07	21.99	22.02	1	21.06	20.98	21.01	2
	36	19	22.09	22.01	22.04	1	21.08	21.00	21.03	2
	36	39	22.00	21.92	21.95	1	20.99	20.91	20.94	2
	75	0	21.99	21.91	21.94	1	20.98	20.90	20.93	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 18700	Mid Ch 18900	High Ch 19100		Low Ch 18700	Mid Ch 18900	High Ch 19100	
			1860.0 MHz	1880.0 MHz	1900.0 MHz		1860.0 MHz	1880.0 MHz	1900.0 MHz	
2 / 20M	1	0	23.51	23.43	23.46	0	22.50	22.42	22.45	1
	1	50	23.65	23.57	23.60	0	22.64	22.56	22.59	1
	1	99	23.50	23.42	23.45	0	22.49	22.41	22.44	1
	50	0	22.25	22.17	22.20	1	21.24	21.16	21.19	2
	50	25	22.27	22.19	22.22	1	21.26	21.18	21.21	2
	50	50	22.18	22.10	22.13	1	21.17	21.09	21.12	2
	100	0	22.17	22.09	22.12	1	21.16	21.08	21.11	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 26047	Mid Ch 26365	High Ch 26683		Low Ch 26047	Mid Ch 26365	High Ch 26683	
			1850.7 MHz	1882.5 MHz	1914.3 MHz		1850.7 MHz	1882.5 MHz	1914.3 MHz	
25 / 1.4M	1	0	22.58	22.52	22.41	0	21.55	21.49	21.38	1
	1	2	22.57	22.51	22.40	0	21.54	21.48	21.37	1
	1	5	22.45	22.39	22.28	0	21.42	21.36	21.25	1
	3	0	22.26	22.20	22.09	0	21.23	21.17	21.06	1
	3	1	22.24	22.18	22.07	0	21.21	21.15	21.04	1
	3	3	22.21	22.15	22.04	0	21.18	21.12	21.01	1
	6	0	21.12	21.06	20.95	1	20.09	20.03	19.92	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 26055	Mid Ch 26365	High Ch 26675		Low Ch 26055	Mid Ch 26365	High Ch 26675	
			1851.5 MHz	1882.5 MHz	1913.5 MHz		1851.5 MHz	1882.5 MHz	1913.5 MHz	
25 / 3M	1	0	22.69	22.63	22.52	0	21.66	21.60	21.49	1
	1	7	22.68	22.62	22.51	0	21.65	21.59	21.48	1
	1	14	22.56	22.50	22.39	0	21.53	21.47	21.36	1
	8	0	21.37	21.31	21.20	1	20.34	20.28	20.17	2
	8	3	21.35	21.29	21.18	1	20.32	20.26	20.15	2
	8	7	21.32	21.26	21.15	1	20.29	20.23	20.12	2
	15	0	21.23	21.17	21.06	1	20.20	20.14	20.03	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 26065	Mid Ch 26365	High Ch 26665		Low Ch 26065	Mid Ch 26365	High Ch 26665	
			1852.5 MHz	1882.5 MHz	1912.5 MHz		1852.5 MHz	1882.5 MHz	1912.5 MHz	
25 / 5M	1	0	22.93	22.87	22.76	0	21.90	21.84	21.73	1
	1	12	22.92	22.86	22.75	0	21.89	21.83	21.72	1
	1	24	22.80	22.74	22.63	0	21.77	21.71	21.60	1
	12	0	21.61	21.55	21.44	1	20.58	20.52	20.41	2
	12	6	21.59	21.53	21.42	1	20.56	20.50	20.39	2
	12	13	21.56	21.50	21.39	1	20.53	20.47	20.36	2
	25	0	21.47	21.41	21.30	1	20.44	20.38	20.27	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 26090	Mid Ch 26365	High Ch 26640		Low Ch 26090	Mid Ch 26365	High Ch 26640	
			1855.0 MHz	1882.5 MHz	1910.0 MHz		1855.0 MHz	1882.5 MHz	1910.0 MHz	
25 / 10M	1	0	23.12	23.06	22.95	0	22.09	22.03	21.92	1
	1	24	23.11	23.05	22.94	0	22.08	22.02	21.91	1
	1	49	22.99	22.93	22.82	0	21.96	21.90	21.79	1
	25	0	21.80	21.74	21.63	1	20.77	20.71	20.60	2
	25	12	21.78	21.72	21.61	1	20.75	20.69	20.58	2
	25	25	21.75	21.69	21.58	1	20.72	20.66	20.55	2
	50	0	21.66	21.60	21.49	1	20.63	20.57	20.46	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 26115	Mid Ch 26365	High Ch 26615		Low Ch 26115	Mid Ch 26365	High Ch 26615	
			1857.5 MHz	1882.5 MHz	1907.5 MHz		1857.5 MHz	1882.5 MHz	1907.5 MHz	
25 / 15M	1	0	23.25	23.19	23.08	0	22.22	22.16	22.05	1
	1	37	23.24	23.18	23.07	0	22.21	22.15	22.04	1
	1	74	23.12	23.06	22.95	0	22.09	22.03	21.92	1
	36	0	21.93	21.87	21.76	1	20.90	20.84	20.73	2
	36	19	21.91	21.85	21.74	1	20.88	20.82	20.71	2
	36	39	21.88	21.82	21.71	1	20.85	20.79	20.68	2
	75	0	21.79	21.73	21.62	1	20.76	20.70	20.59	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 26140	Mid Ch 26365	High Ch 26590		Low Ch 26140	Mid Ch 26365	High Ch 26590	
			1860.0 MHz	1882.5 MHz	1905.0 MHz		1860.0 MHz	1882.5 MHz	1905.0 MHz	
25 / 20M	1	0	23.47	23.41	23.30	0	22.44	22.38	22.27	1
	1	50	23.46	23.40	23.29	0	22.43	22.37	22.26	1
	1	99	23.34	23.28	23.17	0	22.31	22.25	22.14	1
	50	0	22.15	22.09	21.98	1	21.12	21.06	20.95	2
	50	25	22.13	22.07	21.96	1	21.10	21.04	20.93	2
	50	50	22.10	22.04	21.93	1	21.07	21.01	20.90	2
	100	0	22.01	21.95	21.84	1	20.98	20.92	20.81	2

EIRP Power (dBm)

GSM							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
X	512	1850.2	-15.12	44.70	29.58	907.82	H
	661	1880.0	-15.63	44.70	29.07	807.24	
	810	1909.8	-15.42	44.57	29.15	822.81	
	512	1850.2	-22.18	44.27	22.09	161.81	V
	661	1880.0	-22.78	44.87	22.09	161.81	
	810	1909.8	-22.45	44.61	22.16	164.55	

EDGE							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
X	512	1850.2	-19.62	44.70	25.08	322.11	H
	661	1880.0	-19.23	44.70	25.47	352.37	
	810	1909.8	-19.24	44.57	25.33	341.43	
	512	1850.2	-26.25	44.27	18.02	63.39	V
	661	1880.0	-26.47	44.87	18.40	69.18	
	810	1909.8	-26.37	44.61	18.24	66.73	

WCDMA							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
X	9262	1852.4	-21.81	44.70	22.89	194.54	H
	9400	1880.0	-21.95	44.70	22.75	188.36	
	9538	1907.6	-21.74	44.57	22.83	192.00	
	9262	1852.4	-29.14	44.27	15.13	32.58	V
	9400	1880.0	-28.90	44.87	15.97	39.54	
	9538	1907.6	-29.35	44.61	15.26	33.60	

CDMA							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
Y	25	1851.25	-18.65	44.70	26.05	402.72	H
	600	1880.00	-18.62	44.70	26.08	405.51	
	1175	1908.75	-18.53	44.57	26.04	402.07	
	25	1851.25	-25.20	44.27	19.07	80.72	V
	600	1880.00	-25.79	44.87	19.08	80.91	
	1175	1908.75	-25.52	44.61	19.09	81.15	

LTE Band 2							
Channel Bandwidth: 1.4 MHz / QPSK							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
Y	18607	1850.7	-19.21	44.70	25.49	354.00	H
	18900	1880.0	-19.15	44.70	25.55	358.92	
	19193	1909.3	-19.01	44.57	25.56	360.00	
	18607	1850.7	-24.72	44.27	19.55	90.16	V
	18900	1880.0	-25.36	44.87	19.51	89.33	
	19193	1909.3	-25.06	44.61	19.55	90.22	
Channel Bandwidth: 1.4 MHz / 16QAM							
Y	18607	1850.7	-20.22	44.70	24.48	280.54	H
	18900	1880.0	-20.20	44.70	24.50	281.84	
	19193	1909.3	-20.03	44.57	24.54	284.64	
	18607	1850.7	-25.68	44.27	18.59	72.28	V
	18900	1880.0	-26.29	44.87	18.58	72.11	
	19193	1909.3	-26.01	44.61	18.60	72.49	

LTE Band 2							
Channel Bandwidth: 3 MHz / QPSK							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
Y	18615	1851.5	-19.10	44.70	25.60	363.08	H
	18900	1880.0	-19.21	44.70	25.49	354.00	
	19185	1908.5	-19.07	44.57	25.50	355.06	
	18615	1851.5	-24.68	44.27	19.59	90.99	V
	18900	1880.0	-25.24	44.87	19.63	91.83	
	19185	1908.5	-25.08	44.61	19.53	89.80	
Channel Bandwidth: 3 MHz / 16QAM							
Y	18615	1851.5	-20.18	44.70	24.52	283.14	H
	18900	1880.0	-20.23	44.70	24.47	279.90	
	19185	1908.5	-20.01	44.57	24.56	285.96	
	18615	1851.5	-25.77	44.27	18.50	70.79	V
	18900	1880.0	-26.30	44.87	18.57	71.94	
	19185	1908.5	-26.10	44.61	18.51	71.01	

LTE Band 2							
Channel Bandwidth: 5 MHz / QPSK							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
Y	18625	1852.5	-19.11	44.70	25.59	362.24	H
	18900	1880.0	-19.16	44.70	25.54	358.10	
	19175	1907.5	-19.03	44.57	25.54	358.34	
	18625	1852.5	-24.83	44.27	19.44	87.90	V
	18900	1880.0	-25.31	44.87	19.56	90.36	
	19175	1907.5	-25.10	44.61	19.51	89.39	
Channel Bandwidth: 5 MHz / 16QAM							
Y	18625	1852.5	-20.14	44.70	24.56	285.76	H
	18900	1880.0	-20.16	44.70	24.54	284.45	
	19175	1907.5	-20.10	44.57	24.47	280.09	
	18625	1852.5	-25.81	44.27	18.46	70.15	V
	18900	1880.0	-26.31	44.87	18.56	71.78	
	19175	1907.5	-26.03	44.61	18.58	72.16	

LTE Band 2							
Channel Bandwidth: 10 MHz / QPSK							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
Y	18650	1855.0	-19.16	44.70	25.54	358.10	H
	18900	1880.0	-19.20	44.70	25.50	354.81	
	19150	1905.0	-19.04	44.57	25.53	357.52	
	18650	1855.0	-24.75	44.27	19.52	89.54	V
	18900	1880.0	-25.22	44.87	19.65	92.26	
	19150	1905.0	-25.07	44.61	19.54	90.01	
Channel Bandwidth: 10 MHz / 16QAM							
Y	18650	1855.0	-20.19	44.70	24.51	282.49	H
	18900	1880.0	-20.23	44.70	24.47	279.90	
	19150	1905.0	-19.89	44.57	24.68	293.97	
	18650	1855.0	-25.69	44.27	18.58	72.11	V
	18900	1880.0	-26.49	44.87	18.38	68.87	
	19150	1905.0	-26.09	44.61	18.52	71.17	

LTE Band 2							
Channel Bandwidth: 15 MHz / QPSK							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
Y	18675	1857.5	-19.20	44.70	25.50	354.81	H
	18900	1880.0	-19.16	44.70	25.54	358.10	
	19125	1902.5	-19.02	44.57	25.55	359.17	
	18675	1857.5	-24.72	44.27	19.55	90.16	V
	18900	1880.0	-25.28	44.87	19.59	90.99	
	19125	1902.5	-25.03	44.61	19.58	90.84	
Channel Bandwidth: 15 MHz / 16QAM							
Y	18675	1857.5	-20.18	44.70	24.52	283.14	H
	18900	1880.0	-20.13	44.70	24.57	286.42	
	19125	1902.5	-20.08	44.57	24.49	281.38	
	18675	1857.5	-25.68	44.27	18.59	72.28	V
	18900	1880.0	-26.44	44.87	18.43	69.66	
	19125	1902.5	-26.05	44.61	18.56	71.83	

LTE Band 2							
Channel Bandwidth: 20 MHz / QPSK							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
Y	18700	1860.0	-19.15	44.70	25.55	358.92	H
	18900	1880.0	-19.18	44.70	25.52	356.45	
	19100	1900.0	-19.05	44.57	25.52	356.70	
	18700	1860.0	-24.74	44.27	19.53	89.74	V
	18900	1880.0	-25.31	44.87	19.56	90.36	
	19100	1900.0	-25.07	44.61	19.54	90.01	
Channel Bandwidth: 20 MHz / 16QAM							
Y	18700	1860.0	-20.18	44.70	24.52	283.14	H
	18900	1880.0	-20.23	44.70	24.47	279.90	
	19100	1900.0	-20.08	44.57	24.49	281.38	
	18700	1860.0	-25.74	44.27	18.53	71.29	V
	18900	1880.0	-26.40	44.87	18.47	70.31	
	19100	1900.0	-26.09	44.61	18.52	71.17	

LTE Band 25							
Channel Bandwidth: 1.4 MHz / QPSK							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
Y	26047	1850.7	-19.63	44.70	25.07	321.37	H
	26365	1882.5	-19.60	44.70	25.10	323.59	
	26683	1914.3	-19.54	44.57	25.03	318.64	
	26047	1850.7	-27.16	44.27	17.11	51.40	V
	26365	1882.5	-27.79	44.87	17.08	51.05	
	26683	1914.3	-27.60	44.61	17.01	50.27	
Channel Bandwidth: 1.4 MHz / 16QAM							
Y	26047	1850.7	-20.64	44.70	24.06	254.68	H
	26365	1882.5	-20.62	44.70	24.08	255.86	
	26683	1914.3	-20.54	44.57	24.03	253.10	
	26047	1850.7	-28.24	44.27	16.03	40.09	V
	26365	1882.5	-28.81	44.87	16.06	40.36	
	26683	1914.3	-28.61	44.61	16.00	39.84	

LTE Band 25							
Channel Bandwidth: 3 MHz / QPSK							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
Y	26055	1851.5	-19.62	44.70	25.08	322.11	H
	26365	1882.5	-19.63	44.70	25.07	321.37	
	26675	1913.5	-19.57	44.57	25.00	316.45	
	26055	1851.5	-27.21	44.27	17.06	50.82	V
	26365	1882.5	-27.83	44.87	17.04	50.58	
	26675	1913.5	-27.57	44.61	17.04	50.62	
Channel Bandwidth: 3 MHz / 16QAM							
Y	26055	1851.5	-20.59	44.70	24.11	257.63	H
	26365	1882.5	-20.67	44.70	24.03	252.93	
	26675	1913.5	-20.56	44.57	24.01	251.94	
	26055	1851.5	-28.24	44.27	16.03	40.09	V
	26365	1882.5	-28.79	44.87	16.08	40.55	
	26675	1913.5	-28.54	44.61	16.07	40.49	

LTE Band 25							
Channel Bandwidth: 5 MHz / QPSK							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
Y	26065	1852.5	-19.63	44.70	25.07	321.37	H
	26365	1882.5	-19.69	44.70	25.01	316.96	
	26665	1912.5	-19.54	44.57	25.03	318.64	
	26065	1852.5	-27.23	44.27	17.04	50.58	V
	26365	1882.5	-27.84	44.87	17.03	50.47	
	26665	1912.5	-27.56	44.61	17.05	50.73	
Channel Bandwidth: 5 MHz / 16QAM							
Y	26065	1852.5	-20.64	44.70	24.06	254.68	H
	26365	1882.5	-20.61	44.70	24.09	256.45	
	26665	1912.5	-20.56	44.57	24.01	251.94	
	26065	1852.5	-28.21	44.27	16.06	40.36	V
	26365	1882.5	-28.74	44.87	16.13	41.02	
	26665	1912.5	-28.56	44.61	16.05	40.30	

LTE Band 25							
Channel Bandwidth: 10 MHz / QPSK							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
Y	26090	1855.0	-19.64	44.70	25.06	320.63	H
	26365	1882.5	-19.65	44.70	25.05	319.89	
	26640	1910.0	-19.57	44.57	25.00	316.45	
	26090	1855.0	-27.20	44.27	17.07	50.93	V
	26365	1882.5	-27.69	44.87	17.18	52.24	
	26640	1910.0	-27.54	44.61	17.07	50.97	
Channel Bandwidth: 10 MHz / 16QAM							
Y	26090	1855.0	-20.64	44.70	24.06	254.68	H
	26365	1882.5	-20.69	44.70	24.01	251.77	
	26640	1910.0	-20.41	44.57	24.16	260.80	
	26090	1855.0	-28.24	44.27	16.03	40.09	V
	26365	1882.5	-28.71	44.87	16.16	41.30	
	26640	1910.0	-28.53	44.61	16.08	40.58	

LTE Band 25							
Channel Bandwidth: 15 MHz / QPSK							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
Y	26115	1857.5	-19.65	44.70	25.05	319.89	H
	26365	1882.5	-19.62	44.70	25.08	322.11	
	26615	1907.5	-19.54	44.57	25.03	318.64	
	26115	1857.5	-27.19	44.27	17.08	51.05	V
	26365	1882.5	-27.81	44.87	17.06	50.82	
	26615	1907.5	-27.60	44.61	17.01	50.27	
Channel Bandwidth: 15 MHz / 16QAM							
Y	26115	1857.5	-20.62	44.70	24.08	255.86	H
	26365	1882.5	-20.65	44.70	24.05	254.10	
	26615	1907.5	-20.52	44.57	24.05	254.27	
	26115	1857.5	-28.12	44.27	16.15	41.21	V
	26365	1882.5	-28.72	44.87	16.15	41.21	
	26615	1907.5	-28.56	44.61	16.05	40.30	

LTE Band 25							
Channel Bandwidth: 20 MHz / QPSK							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
Y	26140	1860.0	-19.61	44.70	25.09	322.85	H
	26365	1882.5	-19.66	44.70	25.04	319.15	
	26590	1905.0	-19.54	44.57	25.03	318.64	
	26140	1860.0	-27.23	44.27	17.04	50.58	V
	26365	1882.5	-27.79	44.87	17.08	51.05	
	26590	1905.0	-27.61	44.61	17.00	50.15	
Channel Bandwidth: 20 MHz / 16QAM							
Y	26140	1860.0	-20.61	44.70	24.09	256.45	H
	26365	1882.5	-20.66	44.70	24.04	253.51	
	26590	1905.0	-20.52	44.57	24.05	254.27	
	26140	1860.0	-28.24	44.27	16.03	40.09	V
	26365	1882.5	-28.79	44.87	16.08	40.55	
	26590	1905.0	-28.51	44.61	16.10	40.77	

5 Pictures of Test Arrangements

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

Appendix – 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:

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Web Site: www.bureauveritas-adt.com

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

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