



CERTIFICATION TEST REPORT

Report Number. : 11616858-E1V7

Applicant : Verifone, Inc.
1400 West Stanford Ranch Road
Rocklin, CA 95765, U.S.A.

FCC ID : B32V200TPLUS

IC ID : 787C-V200TPLUS

EUT Description : POINT OF SALE TERMINAL

MODEL : V200t Plus 3G/D/E

Test Standard(s) : FCC CFR47 PART 22 SUBPART H
FCC CFR47 PART 24 SUBPART E
INDUSTRY CANADA RSS-132 ISSUE 3
INDUSTRY CANADA RSS-133 ISSUE 6

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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	12/05/17	Initial Issue	--
V2	02/01/18	Revised Test Methodology section. Revised Description of EUT section. Revised Scope of Testing section. Revised Summary Table. Revised Test Methodology reference in RF output power section. Updated Test & Measurement Equipment, section 6.	Frank Ibrahim
V3	03/08/18	Added Maximum Output Power, section 5.2 Revised Scope of Testing section	Glenn Escano
V4	04/03/18	Revised Scope of Testing section	Glenn Escano
V5	04/10/18	Added Worst-Case Configuration and Mode section.	Frank Ibrahim
V6	04/12/18	Updated Worst-Case Configuration and Mode section	Glenn Escano
V7	04/16/18	Revised Scope of Testing section Added HSUPA output power	Frank Ibrahim

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Verifone, Inc.
1400 West Stanford Ranch Road Suite 200
Rocklin, CA 95765, U.S.A.

EUT DESCRIPTION: Point of Sale Terminal

MODEL: V200t Plus 3G/D/E

SERIAL NUMBER: 401-431-539

DATE TESTED: Septmeber 19-28, 2017

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 22H, 24E	PASS
INDUSTRY CANADA RSS-132,133	PASS

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Verification Services Inc. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released For
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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI/TIA-603-E-2016, FCC CFR 47 Part 2, FCC KDB 971168 D01 v03, FCC Part 22 and Part 24, RSS-132, RSS-133, and RSS-GEN Issue 4.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, Fremont, California, USA. Line conducted emissions are measured only at the 47173 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

47173 Benicia Street	47266 Benicia Street
<input type="checkbox"/> Chamber A(IC: 2324B-1)	<input type="checkbox"/> Chamber D(IC: 22541-1)
<input type="checkbox"/> Chamber B(IC: 2324B-2)	<input type="checkbox"/> Chamber E(IC: 22541-2)
<input checked="" type="checkbox"/> Chamber C(IC: 2324B-3)	<input type="checkbox"/> Chamber F(IC: 22541-3)
	<input type="checkbox"/> Chamber G(IC: 22541-4)
	<input type="checkbox"/> Chamber H(IC: 22541-5)

The above test sites and facilities are covered under FCC Test Firm Registration # 208313. UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. Chambers A through C are covered under Industry Canada company address code 2324B with site numbers 2324B -1 through 2324B-3, respectively. Chambers D through H are covered under Industry Canada company address code 22541 with site numbers 22541 -1 through 22541-5, respectively.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

$EIRP = \text{PSA reading with EUT worst orientation (dBm)} + \text{Path loss (dB)} - \text{cable loss (between the SG and substitution antenna)} + \text{Substitution Antenna Factor (dBi)}$

$ERP = \text{PSA reading with EUT worst orientation (dBm)} + \text{Path loss (dB)} - \text{cable loss (between the SG and substitution antenna)}$

(Path loss = Signal generator output – PSA reading with substitution antenna)

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Occupied Channel Bandwidth	±1.1 %
RF output power, conducted	±0.35 dB
Power Spectral Density, conducted	±0.39 dB
Unwanted Emissions, conducted	±2.9 dB
All emissions, radiated	±5.36 dB
Temperature	±0.9 °C
Humidity	±2.26% RH
Supply Voltages	±0.45 %
Time	±0.2 %

Uncertainty figures are valid to a confidence level of 95%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a Point of Sale Terminal which supports the following technologies WLAN 2.4 GHz and 5 GHz, Bluetooth, GSM 850 / GSM 1900, WCDMA Band II / WCDMA Band V, and NFC.

5.2. MAXIMUM OUTPUT ERP/EIRP

5.2.1. MAXIMUM OUTPUT POWER (GSM)

The transmitter has a maximum peak ERP / EIRP output power as follows:

FCC Part 22/24							
Band	Frequency Range (MHz)	Modulation	AG	Conducted power (Peak)		ERP/EIRP (Peak)	
			(dBi)	(dBm)	(mW)	(dBm)	(mW)
850	824~849	GPRS	0.5	32.40	1737.80	30.75	1188.50
		EGPRS		26.80	478.63	25.15	327.34
1900	1850~1910	GPRS	0.6	28.70	741.31	29.30	851.14
		EGPRS		24.80	302.00	25.40	346.74

RSS 132/133							
Band	Frequency Range (MHz)	Modulation	AG	Conducted power (Peak)		EIRP (Peak)	
			(dBi)	(dBm)	(mW)	(dBm)	(mW)
850	824~849	GPRS	0.5	32.40	1737.80	32.90	1949.84
		EGPRS		26.80	478.63	27.30	537.03
1900	1850~1910	GPRS	0.6	28.70	741.31	29.30	851.14
		EGPRS		24.80	302.00	25.40	346.74

5.2.2. MAXIMUM OUTPUT POWER (WCDMA)

The transmitter has a maximum peak ERP / EIRP output power as follows:

FCC Part 24 & RSS 133							
Band	Frequency Range (MHz)	Modulation	AG	Conducted power (Average)		EIRP (Average)	
			(dBi)	(dBm)	(mW)	(dBm)	(mW)
Band 2	1850~1910	Rel99	0.6	22.90	194.98	23.50	223.87
		HSDPA		22.80	190.55	23.40	218.78
		HSUPA		21.53	142.23	22.13	163.31

FCC Part 22							
Band	Frequency Range (MHz)	Modulation	AG	Conducted power (Average)		ERP (Average)	
			(dBi)	(dBm)	(mW)	(dBm)	(mW)
Band 5	824~849	Rel99	0.5	23.88	244.34	22.23	167.11
		HSDPA		23.80	239.88	22.15	164.06
		HSUPA		21.67	146.89	20.02	100.46

RSS 132							
Band	Frequency Range (MHz)	Modulation	AG	Conducted power (Peak)		EIRP (Peak)	
			(dBi)	(dBm)	(mW)	(dBm)	(mW)
Band 5	824~849	Rel99	0.5	23.88	244.34	24.38	274.16
		HSDPA		23.80	239.88	24.30	269.15
		HSUPA		21.67	146.89	22.17	164.82

5.3. SCOPE OF TESTING

This report covers only radiated emissions portion. For antenna port data refer to report number 11631998-E6V6 (FCC ID: B32V240MPLUS, IC 787C-V240MPLUS) for model V240m Plus 3GBW as the WWAN module covered by this report is identical to the WWAN module inside model V240m Plus 3GBW with identical output power. Output power was confirmed prior to making radiated spurious measurements.

For antenna port data (except ERP/EIRP) refer to report 11631998-E6V6. Due to different antenna gain, ERP/EIRP is provided here for model V200t Plus 3G/D/E.

5.4. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a printed trace monopole-based antenna with a maximum peak gain as follow:

Frequency (MHz)	Peak Gain (dBi)
GSM850, 824~849MHz	0.5
GSM1900, 1850~1910MHz	0.6
WCDMA Band 2, 1850~1910MHz	0.6
WCDMA Band 5, 824~849	0.5

5.5. WORST-CASE CONFIGURATION AND MODE

The fundamental of the EUT was investigated in three orthogonal orientations X, Y, & Z, and it was determined that Z-Axis was worst-case orientation; therefore, all final radiated testing was performed with the EUT in Z-Axis.

5.6. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was VOS2 30640XXX.

5.7. DESCRIPTION OF TEST SETUP
SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	Verifone	PSA18A-082A	5A00170801207	N/A

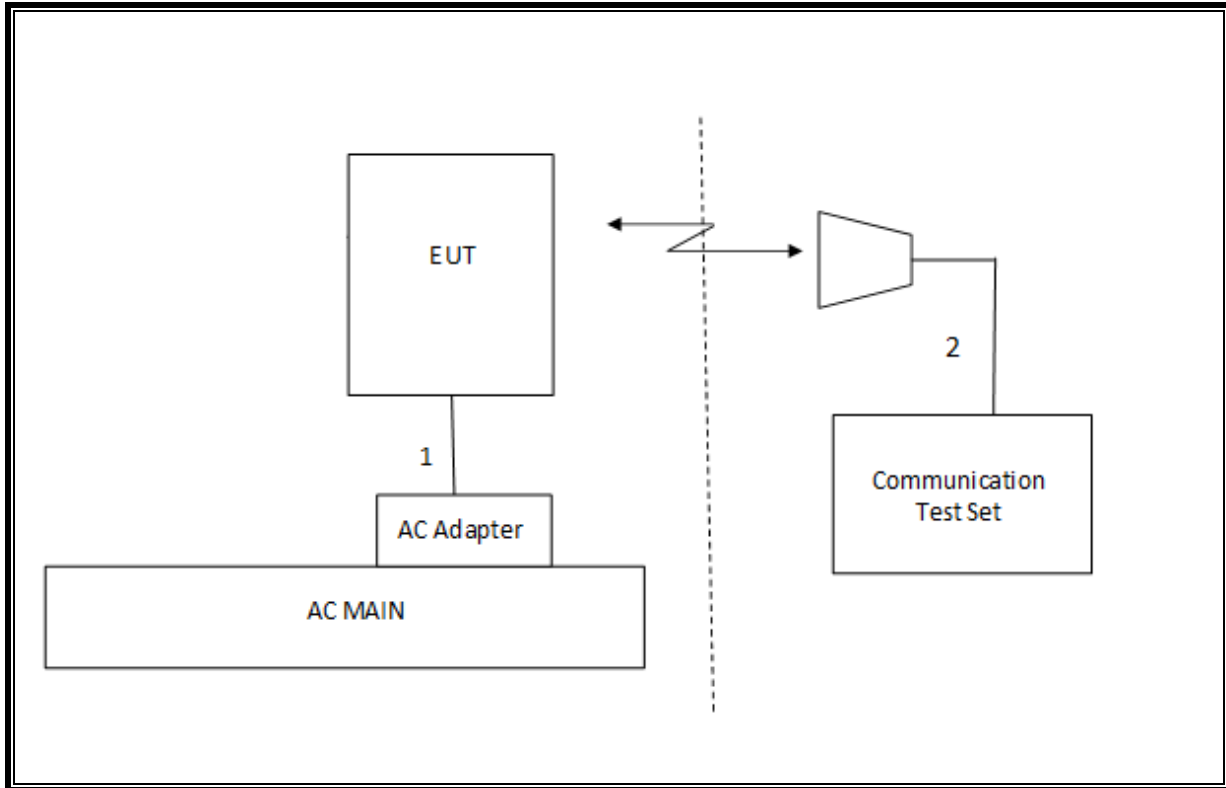
I/O CABLES (RADIATED SETUP)

I/O Cable List						
Cable No	Port	# of Identical ports	Connector Type	Serial Type	Cable Length (m)	Remarks
1	DC	1	Round	Un-shielded	1.75m	No
2	RF In/out	1	Communication Test Set	Un-shielded	2m	Yes

TEST SETUP

The EUT is continuously communicated to the call box during the tests.

SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)



6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Equipment List					
Description	Manufacturer	Model	T Number	Cal Date	Cal Due
Amplifier, 1 to 18 GHz	Miteq	AFS43-00101800-25-S-42	931	06/21/17	06/21/18
Amplifier, 1 to 8 GHz	Miteq	AMF-4D-01000800-30-29P	1156	02/15/17	02/15/18
Amplifier, 10KHz to 1GHz, 32dB	Keysight	8447D	15	08/14/17	08/14/18
Antenna, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences	JB3	899	06/15/17	06/15/18
Horn Antenna	ETS-Lindgren	3117	T712	01/30/17	01/30/18
Spectrum Analyzer, PXA 3Hz to 44GHz	Keysight	N9030A	905	01/11/17	01/11/18
Highpass Filter, 2.7 GHz	Micro-Circuits	H2G518G6	T772	07/05/16	07/05/18
Highpass Filter, 1 GHz	Micro-Tronics	HPM18129	T889	02/21/17	02/21/18
Highpass Filter, 4GHz	Micro-Tronics	HPM13351	T1241	07/19/17	07/19/18
Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	T956	06/22/17	06/22/18

Test Equipment List			
Description	Manufacturer	Model	T Number
Radiated Software	UL	UL EMC	Ver 9.5, June 24, 2015
Conducted Software	UL	UL EMC	Ver 9.5, May 26, 2015
CLT Software	UL	UL RF	Ver 1.0, Feb 2, 2015
Antenna Port Software	UL	UL RF	Ver 3.7, Nov 12, 2015

7. TEST RESULTS

SUMMARY TABLE

FCC Part Section	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result
22.913(a)(2)	RSS-132 (5.5)	Effective Radiated Power	38dBm	Radiated	Pass
24.232(c)	RSS-132 (5.4); RSS-133 (6.4)	Equivalent Isotropic Radiated Power	33dBm		Pass
22.917(a) 24.238(a)	RSS-132(5.5) RSS-133(6.5)	Radiated Spurious Emission	-13dBm		Pass

7.1. RF OUTPUT POWER

TEST PROCEDURE

ANSI C63.26:2015, ANSI/TIA-603-E-2016 Clause 2.2.17
KDB 971168 Section 5.6

$$\text{ERP/EIRP} = \text{PMeas} + \text{GT} - \text{LC}$$

where: ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as PMeas, typically dBW or dBm);

PMeas = measured transmitter output power or PSD, in dBm or dBW;

GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

For devices utilizing multiple antennas, KDB 662911 provides guidance for determining the effective array transmit antenna gain term to be used in the above equation.

MODES TESTED

- GSM 850
- GSM 1900
- WCDMA Band 2
- WCDMA Band 5

7.1.1. GSM

Using CMW500 Communication Test Set

Function: Menu select > GSM Mobile Station > GSM 850/900/1800/1900

Press Connection control to choose the different menus

Press RESET > choose all to reset all settings

- Connection** Press Signal Off to turn off the signal and change settings
Network Support > GSM+GPRS or GSM+EGPRS
Main Service > Packet Data
Service selection > Test Mode A – Auto Slot Config. off
- MS Signal** Press Slot Config bottom on the right twice to select and change the number of time slots and power setting
> Slot configuration > Uplink/Gamma
> 33 dBm for GPRS 850/900
> 27 dBm for EGPRS 850/900
> 30 dBm for GPRS1800/1900
> 26 dBm for EGPRS1800/1900
- BS Signal** Enter the same channel number for TCH channel (test channel) and BCCH channel
- Frequency Offset > + 0 Hz
Mode > BCCH and TCH
BCCH Level > -85 dBm (May need to adjust if link is not stable)
BCCH Channel > choose desire test channel [Enter the same channel number for TCH channel (test channel) and BCCH channel]
Channel Type > Off
P0> 4 dB
Slot Config > Unchanged (if already set under MS Signal)
TCH > choose desired test channel
Hopping > Off
Main Timeslot > 3 (Default)
- Network** Coding Scheme > CS 4 (GPRS) and MCS5-9 (EGPRS)
Bit Stream > 2E9-1PSR Bit Pattern
- AF/RF** Enter appropriate offsets for Ext. Att. Output and Ext. Att. Input
- Connection** Press Signal On to turn on the signal and change settings

GSM OUTPUT POWER RESULT

Tested By	Kenneth Mak
Date	9/19/2017

GSM 850

Antenna gain (dBi)		0.50					
Mode	Ch.	f (MHz)	Modulation	Conducted Average (dBm)	ERP Average (dBm)	ERP Limit (dBm)	Margin (dB)
GPRS	128	824.2	1 Time slot	32.30	30.65	38.5	-7.85
	190	836.6		32.40	30.75	38.5	-7.75
	251	848.8		32.30	30.65	38.5	-7.85
	128	824.2	2 Time slot	29.60	27.95	38.5	-10.55
	190	836.6		29.60	27.95	38.5	-10.55
	251	848.8		29.50	27.85	38.5	-10.65
	128	824.2	3 Time slot	27.70	26.05	38.5	-12.45
	190	836.6		27.80	26.15	38.5	-12.35
	251	848.8		27.70	26.05	38.5	-12.45
	128	824.2	4 Time slot	26.60	24.95	38.5	-13.55
	190	836.6		26.60	24.95	38.5	-13.55
	251	848.8		26.60	24.95	38.5	-13.55
EGPRS	128	824.2	1 Time slot	26.70	25.05	38.5	-13.45
	190	836.6		26.80	25.15	38.5	-13.35
	251	848.8		26.70	25.05	38.5	-13.45
	128	824.2	2 Time slot	23.60	21.95	38.5	-16.55
	190	836.6		23.70	22.05	38.5	-16.45
	251	848.8		23.60	21.95	38.5	-16.55
	128	824.2	3 Time slot	21.80	20.15	38.5	-18.35
	190	836.6		21.80	20.15	38.5	-18.35
	251	848.8		21.80	20.15	38.5	-18.35
	128	824.2	4 Time slot	20.50	18.85	38.5	-19.65
	190	836.6		20.60	18.95	38.5	-19.55
	251	848.8		20.60	18.95	38.5	-19.55

GSM 1900

Antenna gain (dBi)		0.60					
Mode	Ch.	f (MHz)	Modulation	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
GPRS	512	1850.2	1 Time slot	28.70	29.30	33.0	-3.70
	661	1880		28.70	29.30	33.0	-3.70
	810	1909.8		28.70	29.30	33.0	-3.70
	512	1850.2	2 Time slot	25.80	26.40	33.0	-6.60
	661	1880		25.90	26.50	33.0	-6.50
	810	1909.8		25.90	26.50	33.0	-6.50
	512	1850.2	3 Time slot	24.00	24.60	33.0	-8.40
	661	1880		24.10	24.70	33.0	-8.30
	810	1909.8		24.10	24.70	33.0	-8.30
	512	1850.2	4 Time slot	22.80	23.40	33.0	-9.60
	661	1880		22.90	23.50	33.0	-9.50
	810	1909.8		22.90	23.50	33.0	-9.50
EGPRS	512	1850.2	1 Time slot	24.70	25.30	33.0	-7.70
	661	1880		24.80	25.40	33.0	-7.60
	810	1909.8		24.80	25.40	33.0	-7.60
	512	1850.2	2 Time slot	21.80	22.40	33.0	-10.60
	661	1880		21.90	22.50	33.0	-10.50
	810	1909.8		21.90	22.50	33.0	-10.50
	512	1850.2	3 Time slot	20.00	20.60	33.0	-12.40
	661	1880		20.00	20.60	33.0	-12.40
	810	1909.8		20.00	20.60	33.0	-12.40
	512	1850.2	4 Time slot	18.80	19.40	33.0	-13.60
	661	1880		18.80	19.40	33.0	-13.60
	810	1909.8		18.80	19.40	33.0	-13.60

7.1.2. UMTS

TEST PROCEDURE

Release 99 Setup Procedures used to establish the test signals

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 specification. The DUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7).

The following summary of these settings are illustrated below:

Mode	Subtest	Rel99
WCDMA General Settings	Loopback Mode	Test Mode 2
	Rel99 RMC	12.2kbps RMC
	Power Control Algorithm	Algorithm2
	β_c/β_d	8/15

UMTS REL 99 OUTPUT POWER RESULT

Tested By	Kenneth Mak
Date	9/25/2017

Antenna gain Band 5 (dBi)	0.50
Antenna gain Band 2 (dBi)	0.60

Part 22 / RSS 132 850MHz Band (5)

Band	UL Channel	DL Channel	Frequency (MHz)	Conducted Average (dBm)	ERP Average (dBm)	ERP Limit (dBm)	Margin (dB)
UMTS Rel. 99 850MHz	4132	4357	826.4	23.88	22.23	38.5	-16.3
	4183	4408	836.6	23.80	22.15	38.5	-16.4
	4233	4458	846.6	23.70	22.05	38.5	-16.5

Part 24 / RSS 133 1900MHz Band (2)

Band	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
UMTS Rel. 99 1900MHz	9262	9662	1852.4	22.90	23.50	33.0	-9.5
	9400	9800	1880.0	22.60	23.20	33.0	-9.8
	9538	9938	1907.6	22.40	23.00	33.0	-10.0

UMTS HSDPA

HSDPA Setup Procedures used to establish the test signals

The following 4 Sub-tests were completed according to Release 5 procedures in section 5.2 of 3GPP TS34.121. Summary of settings are illustrated below:

	Mode	HSDPA	HSDPA	HSDPA	HSDPA
	Subtest	1	2	3	4
W-CDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set 1			
	Power Control Algorithm	Algorithm 2			
	β_c	2/15	11/15	15/15	15/15
	β_d	15/15	15/15	8/15	4/15
	Bd (SF)	64			
	β_c/β_d	2/15	11/15	15/8	15/4
	β_{hs}	4/15	24/15	30/15	30/15
MPR (dB)	0	0	0.5	0.5	
HSDPA Specific Settings	D_{ACK}	8			
	D_{NAK}	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback (Table 5.2B.4)	4ms			
	CQI Repetition Factor (Table 5.2B.4)	2			
	$A_{hs}=\beta_{hs}/\beta_c$	30/15			

UMTS HSDPA OUTPUT POWER RESULT

Antenna gain Band 5 (dBi)	0.50
Antenna gain Band 2 (dBi)	0.60

Part 22 / RSS 132 850MHz Band (5)

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Conducted Average (dBm)	ERP Average (dBm)	ERP Limit (dBm)	Margin (dB)
UMTS HSDPA 850MHz	1	4132	4357	826.4	23.80	22.15	38.5	-14.7
		4183	4408	836.6	23.70	22.05	38.5	-14.8
		4233	4458	846.6	23.60	21.95	38.5	-14.9
	2	4132	4357	826.4	22.90	21.25	38.5	-15.6
		4183	4408	836.6	22.80	21.15	38.5	-15.7
		4233	4458	846.6	22.80	21.15	38.5	-15.7
	3	4132	4357	826.4	22.50	20.85	38.5	-16.0
		4183	4408	836.6	22.50	20.85	38.5	-16.0
		4233	4458	846.6	22.50	20.85	38.5	-16.0
	4	4132	4357	826.4	22.30	20.65	38.5	-16.2
		4183	4408	836.6	22.20	20.55	38.5	-16.3
		4233	4458	846.6	22.20	20.55	38.5	-16.3

Part 24 / RSS 133 1900MHz Band (2)

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
UMTS HSDPA 1900MHz	1	9262	9662	1852.4	22.80	23.40	33.0	-10.2
		9400	9800	1880.0	22.40	23.00	33.0	-10.6
		9538	9938	1907.6	22.30	22.90	33.0	-10.7
	2	9262	9662	1852.4	21.90	22.50	33.0	-11.1
		9400	9800	1880.0	21.50	22.10	33.0	-11.5
		9538	9938	1907.6	21.40	22.00	33.0	-11.6
	3	9262	9662	1852.4	21.70	22.30	33.0	-11.3
		9400	9800	1880.0	21.30	21.90	33.0	-11.7
		9538	9938	1907.6	21.10	21.70	33.0	-11.9
	4	9262	9662	1852.4	21.50	22.10	33.0	-11.5
		9400	9800	1880.0	21.10	21.70	33.0	-11.9
		9538	9938	1907.6	20.90	21.50	33.0	-12.1

HSPA (HSDPA & HSUPA) Setup Procedures used to establish the test signals

The following 5 Sub-tests were completed according to Release 6 procedures in table C,11.1.3 of 3GPP TS 34.121-1 v13.

A summary of these settings are illustrated below:

	Mode	HSPA				
	Subtest	1	2	3	4	5
WCDMA General Settings	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2 kbps RMC				
	HSDPA FRC	H-Set 1				
	HSUPA Test	HSPA				
	Power Control Algorithm	Algorithm 2				Algorithm 1
	β_c	11/15	6/15	15/15	2/15	15/15
	β_d	15/15	15/15	9/15	15/15	0
	β_{ec}	209/225	12/15	30/15	2/15	5/15
	β_c/β_d	11/15	6/15	15/9	2/15	-
	β_{hs}	22/15	12/15	30/15	4/15	5/15
	β_{ed}	1309/225	94/75	47/15	56/75	47/15
CM (dB)	1	3	2	3	1	
MPR (dB)	0	2	1	2	0	
HSDPA Specific Settings	DACK	8				0
	DNAK	8				0
	DCQI	8				0
	Ack-Nack repetition factor	3				
	CQI Feedback (Table 5.2B.4)	4ms				
	CQI Repetition Factor (Table 5.2B.4)	2				
	$A_{hs} = \beta_{hs}/\beta_c$	30/15				
HSUPA Specific Settings	E-DPDCCH	6	8	8	5	0
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	12
	ETFCI (from 34.121 Table C.11.1.3)	75	67	92	71	67
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9
	Reference E-TFCIs	5	5	2	5	1
	Reference E-TFCI	11	11	11	11	67
	Reference E-TFCI PO	4	4	4	4	18
	Reference E-TFCI	67	67	92	67	67
	Reference E-TFCI PO	18	18	18	18	18
	Reference E-TFCI	71	71	71	71	71
	Reference E-TFCI PO	23	23	23	23	23
	Reference E-TFCI	75	75	75	75	75
	Reference E-TFCI PO	26	26	26	26	26
	Reference E-TFCI	81	81	81	81	81
Reference E-TFCI PO	27	27	27	27	27	
Maximum Channelization Codes	2xSF2				SF4	

RESULTS

UMTS HSUPA OUTPUT POWER RESULT

Antenna gain Band 5 (dBi)	0.50
Antenna gain Band 2 (dBi)	0.60

Part 22 / RSS 132 850MHz Band (5)

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Conducted Average (dBm)	ERP Average (dBm)	ERP Limit (dBm)	Margin (dB)
UMTS HSUPA 850MHz	1	4132	4357	826.4	21.54	19.89	38.5	-17.0
		4183	4408	836.6	21.65	20.00	38.5	-16.9
		4233	4458	846.6	21.67	20.02	38.5	-16.8
	2	4132	4357	826.4	19.87	18.22	38.5	-18.6
		4183	4408	836.6	20.79	19.14	38.5	-17.7
		4233	4458	846.6	20.81	19.16	38.5	-17.7
	3	4132	4357	826.4	21.42	19.77	38.5	-17.1
		4183	4408	836.6	21.52	19.87	38.5	-17.0
		4233	4458	846.6	21.52	19.87	38.5	-17.0
	4	4132	4357	826.4	19.87	18.22	38.5	-18.6
		4183	4408	836.6	20.79	19.14	38.5	-17.7
		4233	4458	846.6	20.81	19.16	38.5	-17.7
	5	4132	4357	826.4	21.54	19.89	38.5	-17.0
		4183	4408	836.6	21.65	20.00	38.5	-16.9
		4233	4458	846.6	21.67	20.02	38.5	-16.8

Part 24 / RSS 133 1900MHz Band (2)

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
UMTS HSUPA 1900MHz	1	9262	9662	1852.4	21.53	22.13	33.0	-11.5
		9400	9800	1880.0	21.28	21.88	33.0	-11.7
		9538	9938	1907.6	21.00	21.60	33.0	-12.0
	2	9262	9662	1852.4	20.68	21.28	33.0	-12.3
		9400	9800	1880.0	20.44	21.04	33.0	-12.6
		9538	9938	1907.6	19.87	20.47	33.0	-13.1
	3	9262	9662	1852.4	21.38	21.98	33.0	-11.6
		9400	9800	1880.0	21.17	21.77	33.0	-11.8
		9538	9938	1907.6	20.56	21.16	33.0	-12.4
	4	9262	9662	1852.4	20.68	21.28	33.0	-12.3
		9400	9800	1880.0	20.44	21.04	33.0	-12.6
		9538	9938	1907.6	19.87	20.47	33.0	-13.1
	5	9262	9662	1852.4	21.50	22.10	33.0	-11.5
		9400	9800	1880.0	21.28	21.88	33.0	-11.7
		9538	9938	1907.6	21.00	21.60	33.0	-12.0

7.2. RADIATED TEST RESULTS

RULE PART(S)

FCC: §2.1053, §22.917
IC: RSS132§5.5; RSS133§6.5

FCC LIMIT

§22.917 (e) and §24.238 (a):

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log (P)$ dB.

RSS132§5.5

Mobile and base station equipment shall comply with the limits in (i) and (ii) below.

In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least $43 + 10 \log_{10} p$ (watts).

After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least $43 + 10 \log_{10} p$ (watts). If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required.

RSS133§6.5

Equipment shall comply with the limits in (i) and (ii) below.

(i) In the 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the emission power per any 1% of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least $43 + 10 \log_{10} p$ (watts).

(ii) After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least $43 + 10 \log_{10} p$ (watts). If the measurement is performed using 1% of the emission bandwidth, power integration over 1.0 MHz is required.

TEST PROCEDURE

For Cellular equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. 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. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

For PCS equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, 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. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 MHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

SPURIOUS RADIATION PLOTS

7.2.1. GSM

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: VERIFONE
 Project #: 11616858
 Date: 9/25/2017
 Test Engineer: 39703 KK
 Configuration: EUT + AC Adapter
 Location: Chamber C
 Mode: GPRS 850 MHz Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch. 824.2MHz									
1648.40	-21.6	V	3.0	37.0	1.0	-57.7	-13.0	-44.7	
2472.60	-20.0	V	3.0	36.4	1.0	-55.4	-13.0	-42.4	
3296.80	-21.6	V	3.0	36.2	1.0	-56.7	-13.0	-43.7	
1648.40	-22.2	H	3.0	37.0	1.0	-58.2	-13.0	-45.2	
2472.60	-23.1	H	3.0	36.4	1.0	-58.5	-13.0	-45.5	
3296.80	-21.5	H	3.0	36.2	1.0	-56.7	-13.0	-43.7	
Mid Ch. 836.6MHz									
1673.20	-22.7	V	3.0	37.0	1.0	-58.7	-13.0	-45.7	
2509.80	-21.4	V	3.0	36.4	1.0	-56.8	-13.0	-43.8	
3346.40	-20.5	V	3.0	36.1	1.0	-55.7	-13.0	-42.7	
1673.20	-22.8	H	3.0	37.0	1.0	-58.8	-13.0	-45.8	
2509.80	-21.1	H	3.0	36.4	1.0	-56.5	-13.0	-43.5	
3346.40	-21.2	H	3.0	36.1	1.0	-56.3	-13.0	-43.3	
High Ch. 848.8MHz									
1697.60	-23.7	V	3.0	37.0	1.0	-59.6	-13.0	-46.6	
2546.40	-20.0	V	3.0	36.4	1.0	-55.4	-13.0	-42.4	
3395.20	-21.7	V	3.0	36.1	1.0	-56.8	-13.0	-43.8	
1697.60	-23.6	H	3.0	37.0	1.0	-59.6	-13.0	-46.6	
2546.40	-21.7	H	3.0	36.4	1.0	-57.1	-13.0	-44.1	
3395.20	-21.2	H	3.0	36.1	1.0	-56.3	-13.0	-43.3	

GSM850 GPRS

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: VERIFONE
 Project #: 11616858
 Date: 9/25/2017
 Test Engineer: 39703 KK
 Configuration: EUT + AC Adapter
 Location: Chamber C
 Mode: EGPRS 850 MHz Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch. 824.2MHz									
1648.40	-22.2	V	3.0	37.0	1.0	-58.3	-13.0	-45.3	
2472.60	-20.9	V	3.0	36.4	1.0	-56.3	-13.0	-43.3	
3296.80	-21.1	V	3.0	36.2	1.0	-56.2	-13.0	-43.2	
1648.40	-22.5	H	3.0	37.0	1.0	-58.5	-13.0	-45.5	
2472.60	-24.1	H	3.0	36.4	1.0	-59.6	-13.0	-46.6	
3296.80	-22.1	H	3.0	36.2	1.0	-57.3	-13.0	-44.3	
Mid Ch. 836.6MHz									
1673.20	-22.3	V	3.0	37.0	1.0	-58.3	-13.0	-45.3	
2509.80	-20.3	V	3.0	36.4	1.0	-55.7	-13.0	-42.7	
3346.40	-20.6	V	3.0	36.1	1.0	-55.7	-13.0	-42.7	
1673.20	-23.3	H	3.0	37.0	1.0	-59.3	-13.0	-46.3	
2509.80	-22.3	H	3.0	36.4	1.0	-57.8	-13.0	-44.8	
3346.40	-20.6	H	3.0	36.1	1.0	-55.7	-13.0	-42.7	
High Ch. 848.8MHz									
1697.60	-22.7	V	3.0	37.0	1.0	-58.7	-13.0	-45.7	
2546.40	-20.5	V	3.0	36.4	1.0	-55.9	-13.0	-42.9	
3395.20	-21.1	V	3.0	36.1	1.0	-56.1	-13.0	-43.1	
1697.60	-23.4	H	3.0	37.0	1.0	-59.3	-13.0	-46.3	
2546.40	-21.9	H	3.0	36.4	1.0	-58.3	-13.0	-45.3	
3395.20	-21.4	H	3.0	36.1	1.0	-56.5	-13.0	-43.5	

GSM850 EGPRS

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: VERIFONE
 Project #: 11616858
 Date: 9/25/2017
 Test Engineer: 39703 KK
 Configuration: EUT + AC Adapter
 Location: Chamber C
 Mode: GPRS 1900 MHz Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch. 1850.2MHz									
3700.40	-12.6	V	3.0	35.9	1.0	-47.4	-13.0	-34.4	
5550.60	-15.4	V	3.0	35.5	1.0	-49.9	-13.0	-36.9	
7400.80	-13.7	V	3.0	35.7	1.0	-48.4	-13.0	-35.4	
3700.40	-15.5	H	3.0	35.9	1.0	-50.3	-13.0	-37.3	
5550.60	-14.5	H	3.0	35.5	1.0	-49.0	-13.0	-36.0	
7400.80	-12.1	H	3.0	35.7	1.0	-46.8	-13.0	-33.8	
Mid Ch. 1880MHz									
3760.00	-13.1	V	3.0	35.8	1.0	-47.9	-13.0	-34.9	
5640.00	-14.4	V	3.0	35.5	1.0	-48.9	-13.0	-35.9	
7520.00	-13.0	V	3.0	35.7	1.0	-47.8	-13.0	-34.8	
3760.00	-14.6	H	3.0	35.8	1.0	-49.5	-13.0	-36.5	
5640.00	-12.3	H	3.0	35.5	1.0	-46.7	-13.0	-33.7	
7520.00	-11.3	H	3.0	35.7	1.0	-46.0	-13.0	-33.0	
High Ch. 1909.8MHz									
3819.60	-16.3	V	3.0	35.8	1.0	-51.0	-13.0	-38.0	
5729.40	-14.9	V	3.0	35.5	1.0	-49.4	-13.0	-36.4	
7639.20	-12.5	V	3.0	35.8	1.0	-47.2	-13.0	-34.2	
3819.60	-15.8	H	3.0	35.8	1.0	-50.5	-13.0	-37.5	
5729.40	-15.5	H	3.0	35.5	1.0	-50.0	-13.0	-37.0	
7639.20	-12.2	H	3.0	35.8	1.0	-46.9	-13.0	-33.9	

GSM1900 GPRS

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: VERIFONE
 Project #: 11616858
 Date: 9/25/2017
 Test Engineer: 39703 KK
 Configuration: EUT + AC Adapter
 Location: Chamber C
 Mode: EGPRS 1900 MHz Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch. 1850.2MHz									
3700.40	-15.3	V	3.0	35.9	1.0	-50.2	-13.0	-37.2	
5550.60	-15.3	V	3.0	35.5	1.0	-49.8	-13.0	-36.8	
7400.80	-13.0	V	3.0	35.7	1.0	-47.7	-13.0	-34.7	
3700.40	-16.6	H	3.0	35.9	1.0	-51.4	-13.0	-38.4	
5550.60	-15.4	H	3.0	35.5	1.0	-49.8	-13.0	-36.8	
7400.80	-12.7	H	3.0	35.7	1.0	-47.4	-13.0	-34.4	
Mid Ch. 1880MHz									
3760.00	-14.1	V	3.0	35.8	1.0	-48.9	-13.0	-35.9	
5640.00	-14.8	V	3.0	35.5	1.0	-49.3	-13.0	-36.3	
7520.00	-13.7	V	3.0	35.7	1.0	-48.4	-13.0	-35.4	
3760.00	-16.3	H	3.0	35.8	1.0	-51.1	-13.0	-38.1	
5640.00	-14.7	H	3.0	35.5	1.0	-49.2	-13.0	-36.2	
7520.00	-11.9	H	3.0	35.7	1.0	-46.6	-13.0	-33.6	
High Ch. 1909.8MHz									
3819.60	-14.9	V	3.0	35.8	1.0	-49.7	-13.0	-36.7	
5729.40	-15.9	V	3.0	35.5	1.0	-50.4	-13.0	-37.4	
7639.20	-12.8	V	3.0	35.8	1.0	-47.5	-13.0	-34.5	
3819.60	-15.1	H	3.0	35.8	1.0	-49.8	-13.0	-36.8	
5729.40	-15.8	H	3.0	35.5	1.0	-50.3	-13.0	-37.3	
7639.20	-10.8	H	3.0	35.8	1.0	-45.5	-13.0	-32.5	

GSM1900 EGPRS

7.2.2. UMTS

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: VERIFONE
 Project #: 11616858
 Date: 9/23/2017
 Test Engineer: 39703 KK
 Configuration: EUT + AC Adapter
 Location: Chamber C
 Mode: Rel99 Band 2 Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch. 1852.4MHz									
3784.80	-11.5	V	3.0	35.9	1.0	46.4	-13.0	-33.4	
5557.20	-15.5	V	3.0	35.9	1.0	49.9	-13.0	-36.9	
7409.60	-13.4	V	3.0	35.7	1.0	48.1	-13.0	-35.1	
3784.80	-2.6	H	3.0	35.9	1.0	37.4	-13.0	-24.4	
5557.20	-15.7	H	3.0	35.5	1.0	50.2	-13.0	-37.2	
7409.60	-13.0	H	3.0	35.7	1.0	47.7	-13.0	-34.7	
Mid Ch. 1880MHz									
3780.00	-10.1	V	3.0	35.8	1.0	45.0	-13.0	-32.0	
5640.00	-14.8	V	3.0	35.5	1.0	49.3	-13.0	-36.3	
7520.00	-13.5	V	3.0	35.7	1.0	48.2	-13.0	-35.2	
3780.00	-6.4	H	3.0	35.8	1.0	41.2	-13.0	-28.2	
5640.00	-14.9	H	3.0	35.5	1.0	49.4	-13.0	-36.4	
7520.00	-13.0	H	3.0	35.7	1.0	47.7	-13.0	-34.7	
High Ch. 1907.6MHz									
3815.20	-7.1	V	3.0	35.8	1.0	41.8	-13.0	-28.8	
5722.80	-16.1	V	3.0	35.5	1.0	50.6	-13.0	-37.6	
7630.40	-13.3	V	3.0	35.8	1.0	48.1	-13.0	-35.1	
3815.20	-12.9	H	3.0	35.8	1.0	47.6	-13.0	-34.6	
5722.80	-15.3	H	3.0	35.5	1.0	49.8	-13.0	-36.8	
7630.40	-12.8	H	3.0	35.8	1.0	47.6	-13.0	-34.6	

B2 REL99

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: VERIFONE
 Project #: 11616858
 Date: 9/25/2017
 Test Engineer: 39703 KK
 Configuration: EUT + AC Adapter
 Location: Chamber C
 Mode: HSDPA Band 2 Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch. 1852.4MHz									
3784.80	-12.6	V	3.0	35.9	1.0	47.5	-13.0	-34.5	
5557.20	-14.3	V	3.0	35.5	1.0	48.7	-13.0	-35.7	
7409.60	-12.6	V	3.0	35.7	1.0	47.4	-13.0	-34.4	
3784.80	-2.6	H	3.0	35.9	1.0	37.4	-13.0	-24.4	
5557.20	-15.7	H	3.0	35.5	1.0	50.2	-13.0	-37.2	
7409.60	-13.0	H	3.0	35.7	1.0	47.7	-13.0	-34.7	
Mid Ch. 1880MHz									
3780.00	-10.1	V	3.0	35.8	1.0	45.0	-13.0	-32.0	
5640.00	-14.8	V	3.0	35.5	1.0	49.3	-13.0	-36.3	
7520.00	-13.5	V	3.0	35.7	1.0	48.2	-13.0	-35.2	
3780.00	-6.4	H	3.0	35.8	1.0	41.2	-13.0	-28.2	
5640.00	-14.9	H	3.0	35.5	1.0	49.4	-13.0	-36.4	
7520.00	-13.0	H	3.0	35.7	1.0	47.7	-13.0	-34.7	
High Ch. 1907.6MHz									
3815.20	-7.1	V	3.0	35.8	1.0	41.8	-13.0	-28.8	
5722.80	-16.1	V	3.0	35.5	1.0	50.6	-13.0	-37.6	
7630.40	-13.3	V	3.0	35.8	1.0	48.1	-13.0	-35.1	
3815.20	-12.9	H	3.0	35.8	1.0	47.6	-13.0	-34.6	
5722.80	-15.3	H	3.0	35.5	1.0	49.8	-13.0	-36.8	
7630.40	-12.8	H	3.0	35.8	1.0	47.6	-13.0	-34.6	

B2 HSDPA

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: VERIFONE
 Project #: 11616858
 Date: 9/28/2017
 Test Engineer: 39703 KK
 Configuration: EUT + AC Adapter
 Location: Chamber C
 Mode: Rel99 Band 5 Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch. 826.4MHz									
1652.80	-17.2	V	3.0	37.0	1.0	53.3	-13.0	-40.3	
2479.20	-21.0	V	3.0	36.4	1.0	56.5	-13.0	-43.5	
3365.60	-20.9	V	3.0	36.1	1.0	56.0	-13.0	-43.0	
1652.80	-16.6	H	3.0	37.0	1.0	52.6	-13.0	-39.6	
2479.20	-23.2	H	3.0	36.4	1.0	58.6	-13.0	-45.6	
3365.60	-21.2	H	3.0	36.1	1.0	56.4	-13.0	-43.4	
Mid Ch. 836.6MHz									
1673.20	-17.1	V	3.0	37.0	1.0	53.1	-13.0	-40.1	
2509.80	-22.0	V	3.0	36.4	1.0	57.4	-13.0	-44.4	
3346.40	-21.3	V	3.0	36.1	1.0	56.4	-13.0	-43.4	
1673.20	-16.3	H	3.0	37.0	1.0	52.3	-13.0	-39.3	
2509.80	-24.6	H	3.0	36.4	1.0	60.0	-13.0	-47.0	
3346.40	-20.2	H	3.0	36.1	1.0	55.3	-13.0	-42.3	
High Ch. 846.6MHz									
1693.20	-11.7	V	3.0	37.0	1.0	47.7	-13.0	-34.7	
2539.80	-23.1	V	3.0	36.4	1.0	58.5	-13.0	-45.5	
3386.40	-19.9	V	3.0	36.1	1.0	55.0	-13.0	-42.0	
1693.20	-11.8	H	3.0	37.0	1.0	47.8	-13.0	-34.8	
2539.80	-23.9	H	3.0	36.4	1.0	59.3	-13.0	-46.3	
3386.40	-20.0	H	3.0	36.1	1.0	55.1	-13.0	-42.1	

B5 REL99

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: VERIFONE
 Project #: 11616858
 Date: 9/25/2017
 Test Engineer: 39703 KK
 Configuration: EUT + AC Adapter
 Location: Chamber C
 Mode: HSDPA Band 5 Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch. 826.4MHz									
1652.80	-16.3	V	3.0	37.0	1.0	52.4	-13.0	-39.4	
2479.20	-21.6	V	3.0	36.4	1.0	57.0	-13.0	-44.0	
3365.60	-19.5	V	3.0	36.1	1.0	54.6	-13.0	-41.6	
1652.80	-15.8	H	3.0	37.0	1.0	51.8	-13.0	-38.8	
2479.20	-22.8	H	3.0	36.4	1.0	58.3	-13.0	-45.3	
3365.60	-21.7	H	3.0	36.1	1.0	56.8	-13.0	-43.8	
Mid Ch. 836.6MHz									
1673.20	-16.0	V	3.0	37.0	1.0	52.0	-13.0	-39.0	
2509.80	-20.4	V	3.0	36.4	1.0	55.8	-13.0	-42.8	
3346.40	-20.3	V	3.0	36.1	1.0	55.4	-13.0	-42.4	
1673.20	-17.3	H	3.0	37.0	1.0	53.3	-13.0	-40.3	
2509.80	-22.9	H	3.0	36.4	1.0	58.3	-13.0	-45.3	
3346.40	-21.1	H	3.0	36.1	1.0	56.2	-13.0	-43.2	
High Ch. 846.6MHz									
1693.20	-13.8	V	3.0	37.0	1.0	49.8	-13.0	-36.8	
2539.80	-21.7	V	3.0	36.4	1.0	57.1	-13.0	-44.1	
3386.40	-20.9	V	3.0	36.1	1.0	55.9	-13.0	-42.9	
1693.20	-13.1	H	3.0	37.0	1.0	49.0	-13.0	-36.0	
2539.80	-24.9	H	3.0	36.4	1.0	60.3	-13.0	-47.3	
3386.40	-19.9	H	3.0	36.1	1.0	55.0	-13.0	-42.0	

B5 HSDPA