



**RADIATED EMISSIONS PORTIONS OF
FCC CFR47 PART 22 SUBPART H
FCC CFR47 PART 24 SUBPART E**

CERTIFICATION TEST REPORT

FOR

**NETBOOK
MODEL: TOSHIBA NB300/ NB305**

FCC ID: CJ6UPLL3APC

REPORT NUMBER: 09U12936-2

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Prepared for
**TOSHIBA CORPORATION
DIGITAL MEDIA NETWORK COMPANY
OME COMPLEX, 2-9, SUEHIRO-CHO
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Revision History

Rev.	Issue Date	Revisions	Revised By
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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: TOSHIBA CORPORATION
DIGITAL MEDIA NETWORK COMPANY
OME COMPLEX, 2-9, SUEHIRO-CHO
TOKYO, 198-8710, JAPAN

EUT DESCRIPTION: NETBOOK

MODEL: TOSHIBA NB300/NB305

SERIAL NUMBER: 2238688200074

DATE TESTED: NOVEMBER 20 – DECEMBER 3, 2009

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
Radiated emissions portions of CFR 47 Part 22 Subpart H	Pass
Radiated emissions portions of CFR 47 Part 24 Subpart E	Pass

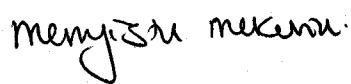
Compliance Certification Services, Inc. (CCS) tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by CCS based on interpretations and/or observations of test results. Measurement Uncertainties 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 CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by CCS 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 CCS By:



Tested By:



THU CHAN
EMC MANAGER
COMPLIANCE CERTIFICATION SERVICES

MENGISTU MEKURIA
EMC ENGINEER
COMPLIANCE CERTIFICATION SERVICES

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA-603-C, FCC CFR 47 Part 2, FCC CFR 47 Part 22, and FCC CFR Part 24.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <http://www.ccsemc.com>.

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:

$$\begin{aligned} \text{Field Strength (dBuV/m)} &= \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \\ &\text{Cable Loss (dB)} - \text{Preamp Gain (dB)} \\ 36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} &= 28.9 \text{ dBuV/m} \end{aligned}$$

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 1000 MHz	4.94 dB

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a multi-band wireless modem that installed inside Toshiba Mini-Notebook Computer. The EUT operates on the GSM/GPRS/EDGE/UMTS networks in the US and Canada, only. Cellular and PCS bands are used for EDGE/GPRS/UMTS operation, so this test report only contains data for these two bands (850MHz and 1900MHz).

5.2. SOFTWARE AND FIRMWARE

The EUT is linked with Agilent Communication Test Set.

5.3. WORST-CASE CONFIGURATION AND MODE

Worst-case determine based on the highest output power. Referring the baseline investigation that can be conducted on the original report the highest out power in different modulations for both cell and PCS bands are as follow:

Worst case modes:

- For Cellular and PCS band: GPRS
- For Cellular and PCS band: EGPRS
- For Cellular and PCS band: 1xRTT (RC3 32(+F-SCH))
- For Cellular and PCS band: WCDMA (UMTS RELEASE 99)

5.4. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	TOSHIBA	PA3743E-1AC3	G71C0009S119	DoC

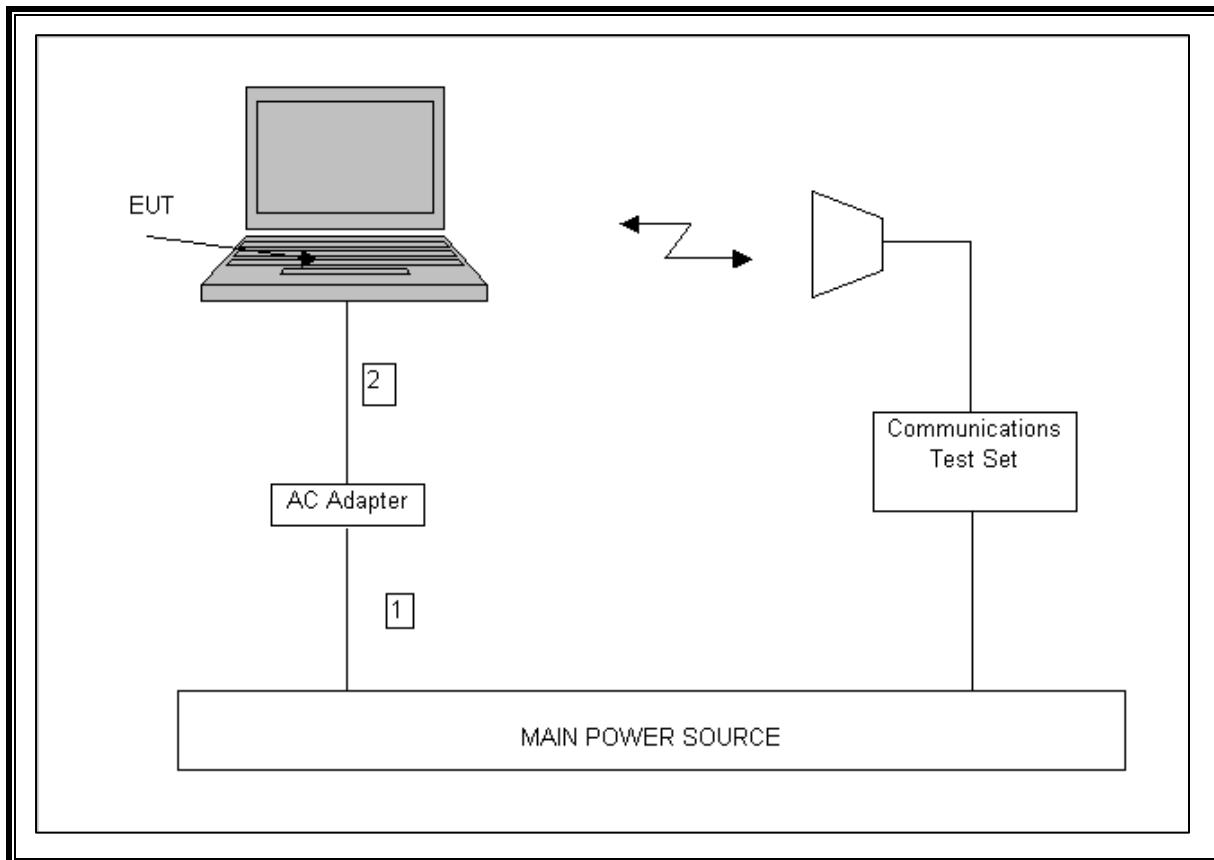
I/O CABLES

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	AC	1	US 115V	Un-shielded	2m	No
2	DC	1	DC	Un-shielded	2m	Ferrite at one end

TEST SETUP

The EUT installed inside Toshiba mini-notebook laptop during the tests. The Wireless Communication test set exercised the EUT.

RADIATED TEST SETUP DIAGRAM



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	Serial Number	Cal Due
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	MY48250923	08/24/10
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	MY48250925	08/31/10
Preamplifier, 26.5 GHz	Agilent / HP	8449B	3008A00931	02/04/10
Preamplifier, 26.5 GHz	Agilent / HP	8449B	3008A00561	02/04/10
Preamplifier, 1300 MHz	Agilent / HP	8447D	2944A06589	12/16/09
Preamplifier, 1300 MHz	Agilent / HP	8447D	1937A02062	12/16/09
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	A0022704	01/14/10
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	A121003	01/14/10
Antenna, Horn, 18 GHz	EMCO	3115	6717	01/29/10
Antenna, Horn, 18 GHz	EMCO	9001-3245	C00783	01/29/10
Antenna, Horn, 18 GHz	EMCO	6739	C00943	01/29/10
Communications Test Set	Agilent / HP	E5515C	GB46160222	09/15/10
Signal Generator 1024 MHz	R & S	SMY01	DE 12311	05/28/10
Dipole	EMCO	3121C-DB2	22435	06/17/10
2.7GHz HPF	MicroTronic	HPM13194	2	CNR
1.5GHz HPF	MicroTronic	HPM13195	1	CNR

7. LIMITS AND RESULTS

7.1. OUTPUT POWER

LIMIT

22.913(a) The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

24.232(b) & RSS133 § 6.4 Mobile/portable stations are limited to 2 watts e.i.r.p. peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications.

RSS-132 § 4.4 The maximum ERP shall be 6.3 Watts for mobile stations.

TEST PROCEDURE

RSS-132, RSS-133, & ANSI / TIA / EIA 603C Clause 2.2.17

RESULTS

850 MHz GPRS Mode

Channel	Frequency (MHz)	ERP Peak Power (dBm)	ERP Peak Power (mW)
Low	824.2	29.50	891.25
Middle	836.6	30.00	1000.00
High	848.8	31.30	1348.96

850 MHz EGPRS Mode

Channel	Frequency (MHz)	ERP Peak Power (dBm)	ERP Peak Power (mW)
Low	824.2	27.70	588.84
Middle	836.6	27.40	549.54
High	848.8	27.50	562.34

850 MHz CDMA 2000 1xRTT Modulation

Channel	Frequency (MHz)	ERP Peak Power (dBm)	ERP Peak Power (mW)
Low	824.7	23.90	245.47
Middle	836.5	24.00	251.19
High	848.3	25.30	338.84

850 MHz WCDMA Modulation

Channel	Frequency (MHz)	ERP Peak Power (dBm)	ERP Peak Power (mW)
Low	826.4	25.10	323.59
Middle	836.4	23.50	223.87
High	846.6	24.50	281.84

1900 MHz GPRS Mode

Channel	Frequency (MHz)	EIRP Peak Power (dBm)	EIRP Peak Power (mW)
Low	1850.2	29.00	794.33
Middle	1880.0	28.80	758.58
High	1909.8	28.00	630.96

1900 MHz EGPRS Mode

Channel	Frequency (MHz)	EIRP Peak Power (dBm)	EIRP Peak Power (mW)
Low	1850.2	27.80	602.56
Middle	1880.0	28.40	691.83
High	1909.8	26.00	398.11

1900 MHz CDMA 2000 1xRTT Modulation

Channel	Frequency (MHz)	EIRP Peak Power (dBm)	EIRP Peak Power (mW)
Low	1851.25	26.00	398.11
Middle	1880.00	26.70	467.74
High	1908.75	26.70	467.74

1900 MHz WCDMA Modulation

Channel	Frequency (MHz)	EIRP Peak Power (dBm)	EIRP Peak Power (mW)
Low	1852.4	25.10	323.59
Middle	1880.0	25.00	316.23
High	1907.6	23.80	239.88

CELL BAND GPRS OUTPUT POWER (ERP)

High Frequency Substitution Measurement Compliance Certification Services Chamber A							
Company: TOSHIBA COPORATION							
Project #: 09U12936							
Date: 11/20/2009							
Test Engineer: MENGISTU MEKURIA							
Configuration: EUT EMBEDED INSIDE TOSHIBA NOTBOOK							
Mode: TX, GPRS CELL BAND							
Test Equipment:							
Receiving: Sunol T122, and 3m Chamber N-type Cable (Setup this one for testing EUT)							
Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse.							
f MHz	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
824.20	-5.3	V	34.8	29.5	38.5	-9.0	
824.20	-2.3	H	30.5	28.3	38.5	-10.2	
836.36	-4.8	V	33.1	28.3	38.5	-10.1	
836.36	-1.1	H	31.2	30.0	38.5	-8.4	
848.80	-4.1	V	32.1	28.1	38.5	-10.4	
848.80	0.1	H	31.2	31.3	38.5	-7.2	

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CELL BAND EGPRS OUTPUT POWER (ERP)

High Frequency Substitution Measurement Compliance Certification Services Chamber A														
Company:	TOSHIBA COPORATION													
Project #:	09U12936													
Date:	11/20/2009													
Test Engineer:	MENGISTU MEKURIA													
Configuration:	EUT EMBEDED INSIDE TOSHIBA NOTBOOK													
Mode:	TX, EGPRS CELL BAND													
<u>Test Equipment:</u>														
Receiving: Sunol T122, and 3m Chamber N-type Cable (Setup this one for testing EUT)														
Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse.														
f MHz	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes							
824.20	-7.1	V	34.8	27.7	38.5	-10.8								
824.20	-6.1	H	30.5	24.5	38.5	-14.0								
836.36	-5.7	V	33.1	27.4	38.5	-11.1								
836.36	-4.6	H	31.2	26.6	38.5	-11.8								
848.80	-4.8	V	32.1	27.4	38.5	-11.1								
848.80	-3.7	H	31.2	27.5	38.5	-11.0								

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CELL BAND CDMA 2000 1xRTT OUTPUT POWER (ERP)

High Frequency Substitution Measurement Compliance Certification Services Chamber B														
Company:	TOSHIBA COPORATION													
Project #:	09U12936													
Date:	11/20/2009													
Test Engineer:	MENGISTU MEKURIA													
Configuration:	EUT EMBEDDED INSIDE TOSHIBA NOTEBOOK													
Mode:	TX, CDMA CELL BAND													
Test Equipment:														
Receiving: Sunol T130, and 3m Chamber N-type Cable (Setup this one for testing EUT)														
Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse.														
f MHz	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes							
824.70	-8.7	V	32.6	23.9	38.5	-14.5								
824.70	-7.1	H	30.4	23.3	38.5	-15.1								
836.52	-8.8	V	32.7	23.9	38.5	-14.5								
836.52	-6.7	H	30.7	24.0	38.5	-14.4								
848.31	-8.5	V	32.0	23.4	38.5	-15.0								
848.31	-5.5	H	30.8	25.3	38.5	-13.2								

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CELL BAND WCDMA OUTPUT POWER (ERP)

High Frequency Substitution Measurement Compliance Certification Services Chamber A														
Company:	TOSHIBA COPORATION													
Project #:	09U12936													
Date:	11/20/2009													
Test Engineer:	MENGISTU MEKURIA													
Configuration:	EUT EMBEDDED INSIDE TOSHIBA NOTEBOOK													
Mode:	TX, WCDMA CELL BAND													
<u>Test Equipment:</u>														
Receiving: Sunol T122, and 3m Chamber N-type Cable (Setup this one for testing EUT)														
Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse.														
f MHz	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes							
826.40	-9.7	V	34.8	25.1	38.5	-13.3								
826.40	-8.6	H	30.5	22.0	38.5	-16.5								
836.40	-9.6	V	33.1	23.5	38.5	-14.9								
836.40	-7.6	H	31.2	23.5	38.5	-14.9								
846.60	-9.5	V	32.1	22.6	38.5	-15.8								
846.60	-6.7	H	31.2	24.5	38.5	-13.9								

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PCS BAND GPRS OUTPUT POWER (EIRP)

High Frequency Fundamental Measurement Compliance Certification Services Chamber A														
Company:	TOSHIBA COPORATION													
Project #:	09U12936													
Date:	11/20/2009													
Test Engineer:	MENGISTU MEKURIA													
Configuration:	EUT EMBEDDED INSIDE TOSHIBA NOTEBOOK													
Mode:	TX, GPRS PCS BAND													
<u>Test Equipment:</u>														
Receiving: Horn T73, and Camber B SMA Cables														
Substitution: Horn T72 Substitution, 6ft SMA Cable (208947003) Warehouse														
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes							
1.850	-11.4	V	40.4	29.0	33.0	4.0								
1.850	-11.9	H	39.7	27.8	33.0	-5.2								
1.880	-11.3	V	39.9	28.7	33.0	4.3								
1.880	-11.4	H	40.1	28.8	33.0	4.3								
1.910	-11.8	V	39.8	28.0	33.0	-5.0								
1.910	-13.3	H	40.2	26.8	33.0	-6.2								
Rev. 1.24.7														

PCS BAND EGPRS OUTPUT POWER (EIRP)

High Frequency Fundamental Measurement Compliance Certification Services Chamber B														
Company:	TOSHIBA COPORATION													
Project #:	09U12936													
Date:	11/20/2009													
Test Engineer:	MENGISTU MEKURIA													
Configuration:	EUT EMBEDDED INSIDE TOSHIBA NOTEBOOK													
Mode:	TX, EGPRS PCS BAND													
Test Equipment:														
Receiving: Horn T59, and Chamber B SMA Cables														
Substitution: Horn T72 Substitution, 6ft SMA Cable (208947003) Warehouse														
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes							
1.850	-12.3	V	40.2	27.8	33.0	-5.2								
1.850	-13.0	H	39.5	26.5	33.0	-6.5								
1.880	-12.5	V	40.3	27.8	33.0	-5.2								
1.880	-11.7	H	40.1	28.4	33.0	-4.6								
1.910	-14.4	V	40.2	25.8	33.0	-7.2								
1.910	-14.1	H	40.1	26.0	33.0	-7.0								
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PCS BAND CDMA 2000 1xRTT OUTPUT POWER (EIRP)

High Frequency Fundamental Measurement Compliance Certification Services Chamber B														
Company:	TOSHIBA COPORATION													
Project #:	09U12936													
Date:	11/20/2009													
Test Engineer:	MENGISTU MEKURIA													
Configuration:	EUT EMBEDDED INSIDE TOSHIBA NOTEBOOK													
Mode:	TX, CDMA PCS BAND													
<u>Test Equipment:</u>														
Receiving: Horn T59, and Camber B SMA Cables														
Substitution: Horn T72 Substitution, 6ft SMA Cable (208947003) Warehouse														
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes							
1.851	-14.2	V	40.2	26.0	33.0	-7.0								
1.851	-13.6	H	39.5	25.9	33.0	-7.1								
1.880	-13.5	V	40.3	26.7	33.0	-6.3								
1.880	-13.8	H	40.1	26.3	33.0	-6.7								
1.909	-13.5	V	40.2	26.7	33.0	-6.3								
1.909	-15.0	H	40.1	25.1	33.0	-7.9								

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PCS BAND WCDMA OUTPUT POWER (EIRP)

High Frequency Fundamental Measurement Compliance Certification Services Chamber A														
Company:	TOSHIBA COPORATION													
Project #:	09U12936													
Date:	11/20/2009													
Test Engineer:	MENGISTU MEKURIA													
Configuration:	EUT EMBEDDED INSIDE TOSHIBA NOTEBOOK													
Mode:	TX, WCDMA PCS BAND													
<u>Test Equipment:</u>														
Receiving: Horn T73, and Camber B SMA Cables														
Substitution: Horn T72 Substitution, 6ft SMA Cable (208947003) Warehouse														
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes							
1.852	-15.3	V	40.4	25.1	33.0	-7.9	-18.9							
1.852	-15.6	H	39.7	24.1	33.0	-8.9	-19.2							
1.880	-16.3	V	39.9	23.6	33.0	-9.4	-19.9							
1.880	-15.1	H	40.1	25.0	33.0	-8.0	-18.6							
1.908	-17.1	V	39.8	22.8	33.0	-10.2	-21.1							
1.908	-16.3	H	40.2	23.8	33.0	-9.2	-20.4							

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7.2. FIELD STRENGTH OF SPURIOUS EMISSION

LIMIT

§22.917 (e), §24.238 (a), RSS-132 § 4.5, & RSS-133 § 6.5 Out of band emissions. 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.

TEST PROCEDURE

RSS-132, RSS-133, & ANSI / TIA / EIA 603C Clause 2.2.12

RESULTS

Note: No emissions were found within 30-1000MHz & after the third harmonic of 20dB below the system noise.

CELL BAND GPRS SPURIOUS & HARMONIC (ERP)

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement											
Company:	TOSHIBA COPORATION										
Project #:	09U12936										
Date:	11/20/2009										
Test Engineer:	MENGISTU MEKURIA										
Configuration:	EUT EMBEDED INSIDE TOSHIBA NOTEBOOK										
Mode:	TX,GPRS CELL BAND										
Chamber	Pre-amplifier	Filter	Limit								
5m Chamber B	T145 8449B	Filter 1	Part 22								
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Low Ch. 824.2 MHz											
1.648	-47.0	V	3.0	36.8	35.5	1.0	-44.8	-13.0	-31.8		
2.473	-46.3	V	3.0	41.7	35.4	1.0	-39.0	-13.0	-26.0		
3.297	-57.7	V	3.0	44.1	35.5	1.0	-48.1	-13.0	-35.1		
4.121	-62.6	V	3.0	46.1	35.2	1.0	-50.6	-13.0	-37.6		
1.648	-48.5	H	3.0	37.2	35.5	1.0	-45.8	-13.0	-32.8		
2.473	-48.0	H	3.0	39.8	35.4	1.0	-42.6	-13.0	-29.6		
3.297	-59.1	H	3.0	43.9	35.5	1.0	-49.7	-13.0	-36.7		
4.121	-63.4	H	3.0	46.7	35.2	1.0	-51.0	-13.0	-38.0		
Mid Ch. 836.6 MHz											
1.673	-46.9	V	3.0	37.1	35.5	1.0	-44.3	-13.0	-31.3		
2.510	-47.5	V	3.0	41.8	35.4	1.0	-40.1	-13.0	-27.1		
3.346	-57.6	V	3.0	44.3	35.5	1.0	-47.8	-13.0	-34.8		
4.183	-63.2	V	3.0	46.3	35.2	1.0	-51.1	-13.0	-38.1		
1.673	-48.4	H	3.0	37.5	35.5	1.0	-45.5	-13.0	-32.5		
2.510	-47.9	H	3.0	39.9	35.4	1.0	-42.4	-13.0	-29.4		
3.346	-58.5	H	3.0	44.1	35.5	1.0	-48.9	-13.0	-35.9		
4.183	-62.4	H	3.0	46.8	35.2	1.0	-49.9	-13.0	-36.9		
High Ch. 848.8MHz											
1.698	-47.4	V	3.0	37.4	35.5	1.0	-44.5	-13.0	-31.5		
2.546	-47.6	V	3.0	42.0	35.4	1.0	-40.1	-13.0	-27.1		
3.395	-56.5	V	3.0	44.4	35.5	1.0	-46.6	-13.0	-33.6		
4.244	-63.0	V	3.0	46.5	35.2	1.0	-50.8	-13.0	-37.8		
1.698	-48.0	H	3.0	37.7	35.5	1.0	-44.8	-13.0	-31.8		
2.546	-49.2	H	3.0	40.1	35.4	1.0	-43.5	-13.0	-30.5		
3.395	-58.5	H	3.0	44.3	35.5	1.0	-48.7	-13.0	-35.7		
4.244	-62.5	H	3.0	47.0	35.2	1.0	-49.8	-13.0	-36.8		

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

CELL BAND EGPRS SPURIOUS & HARMONIC (ERP)

CELL BAND CDMA 2000 1xRTT SPURIOUS & HARMONIC (ERP)

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:	TOSHIBA COPORATION									
Project #:	09U12936									
Date:	11/20/2009									
Test Engineer:	MENGISTU MEKURIA									
Configuration:	EUT EMBEDED INSIDE TOSHIBA NOTBOOK									
Mode:	TX,CDMA CELL BAND									
Chamber		Pre-amplifier			Filter		Limit			
5m Chamber B		T145 8449B			Filter 1		Part 22			
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch. (824.7 MHz)										
1.649	-57.8	V	3.0	36.8	35.5	1.0	55.6	-13.0	-42.6	
2.474	-64.4	V	3.0	41.7	35.4	1.0	57.2	-13.0	-44.2	
3.299	-62.4	V	3.0	44.1	35.5	1.0	52.8	-13.0	-39.8	
4.124	-63.2	V	3.0	46.2	35.2	1.0	51.3	-13.0	-38.3	
4.948	-58.0	V	3.0	48.2	35.3	1.0	44.2	-13.0	-31.2	
5.773	-56.4	V	3.0	49.4	35.5	1.0	41.4	-13.0	-28.4	
1.649	-55.3	H	3.0	37.2	35.5	1.0	52.6	-13.0	-39.6	
2.474	-63.1	H	3.0	39.8	35.4	1.0	57.6	-13.0	-44.6	
3.299	-64.5	H	3.0	44.0	35.5	1.0	55.0	-13.0	-42.0	
4.124	-66.1	H	3.0	46.7	35.2	1.0	53.7	-13.0	-40.7	
4.948	-58.9	H	3.0	48.8	35.3	1.0	44.5	-13.0	-31.5	
5.773	-56.4	H	3.0	50.4	35.5	1.0	40.5	-13.0	-27.5	
Mid Ch. (836.52 MHz)										
1.673	-56.4	V	3.0	37.1	35.5	1.0	53.8	-13.0	-40.8	
2.510	-59.4	V	3.0	41.8	35.4	1.0	52.0	-13.0	-39.0	
3.346	-64.5	V	3.0	44.3	35.5	1.0	54.7	-13.0	-41.7	
4.183	-62.4	V	3.0	46.3	35.2	1.0	50.4	-13.0	-37.4	
5.019	-59.0	V	3.0	48.3	35.3	1.0	45.0	-13.0	-32.0	
5.856	-58.4	V	3.0	49.5	35.5	1.0	43.4	-13.0	-30.4	
1.673	-61.6	H	3.0	37.5	35.5	1.0	58.7	-13.0	-45.7	
2.510	-60.4	H	3.0	39.9	35.4	1.0	54.9	-13.0	-41.9	
3.346	-63.0	H	3.0	44.1	35.5	1.0	53.4	-13.0	-40.4	
4.183	-65.5	H	3.0	46.8	35.2	1.0	53.0	-13.0	-40.0	
5.019	-61.5	H	3.0	48.9	35.3	1.0	46.9	-13.0	-33.9	
5.856	-57.2	H	3.0	50.5	35.5	1.0	41.1	-13.0	-28.1	
High Ch. (848.3 MHz)										
1.697	-56.5	V	3.0	37.4	35.5	1.0	53.6	-13.0	-40.6	
2.545	-62.3	V	3.0	42.0	35.4	1.0	54.8	-13.0	-41.8	
3.393	-59.5	V	3.0	44.4	35.5	1.0	49.6	-13.0	-36.6	
4.242	-63.6	V	3.0	46.4	35.2	1.0	51.4	-13.0	-38.4	
5.090	-54.6	V	3.0	48.5	35.3	1.0	40.4	-13.0	-27.4	
5.938	-55.8	V	3.0	49.6	35.5	1.0	40.7	-13.0	-27.7	
1.697	-59.2	H	3.0	37.7	35.5	1.0	56.0	-13.0	-43.0	
2.545	-63.5	H	3.0	40.1	35.4	1.0	57.8	-13.0	-44.8	
3.393	-58.2	H	3.0	44.3	35.5	1.0	48.4	-13.0	-35.4	
4.242	-64.7	H	3.0	47.0	35.2	1.0	51.9	-13.0	-38.9	
5.090	-54.7	H	3.0	49.1	35.3	1.0	39.9	-13.0	-26.9	
5.938	-55.2	H	3.0	50.7	35.5	1.0	39.0	-13.0	-26.0	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

CELL BAND WCDMA SPURIOUS & HARMONIC (ERP)

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:	TOSHIBA CORPORATION									
Project #:	09U12936									
Date:	11/20/2009									
Test Engineer:	MENGISTU MEKURIA									
Configuration:	EUT EMBEDDED INSIDE TOSHIBA NOTEBOOK									
Mode:	TX,WCDMA CELL BAND									
Chamber	Pre-amplifier			Filter			Limit			
5m Chamber B	T145 8449B			Filter 1			Part 22			
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch. (826.4 MHz)										
1.653	52.2	V	3.0	36.8	35.5	1.0	49.9	-13.0	-36.9	
2.479	-59.6	V	3.0	41.7	35.4	1.0	52.3	-13.0	-39.3	
3.306	47.5	V	3.0	44.2	35.5	1.0	37.9	-13.0	-24.9	
4.132	-63.5	V	3.0	46.2	35.2	1.0	51.6	-13.0	-38.6	
4.958	58.4	V	3.0	48.2	35.3	1.0	44.5	-13.0	-31.5	
5.785	58.4	V	3.0	49.4	35.5	1.0	43.4	-13.0	-30.4	
1.653	55.2	H	3.0	37.3	35.5	1.0	52.4	-13.0	-39.4	
2.479	60.3	H	3.0	39.8	35.4	1.0	54.8	-13.0	-41.8	
3.306	61.3	H	3.0	44.0	35.5	1.0	51.8	-13.0	-38.8	
4.132	63.5	H	3.0	46.7	35.2	1.0	51.0	-13.0	-38.0	
4.958	61.9	H	3.0	48.8	35.3	1.0	47.4	-13.0	-34.4	
5.785	57.1	H	3.0	50.4	35.5	1.0	41.1	-13.0	-28.1	
Mid Ch. (836.4 MHz)										
1.673	52.7	V	3.0	37.1	35.5	1.0	50.1	-13.0	-37.1	
2.509	58.5	V	3.0	41.8	35.4	1.0	51.0	-13.0	-38.0	
3.346	47.6	V	3.0	44.3	35.5	1.0	37.9	-13.0	-24.9	
4.182	-62.4	V	3.0	46.3	35.2	1.0	50.4	-13.0	-37.4	
5.018	57.6	V	3.0	48.3	35.3	1.0	43.6	-13.0	-30.6	
5.855	57.4	V	3.0	49.5	35.5	1.0	42.4	-13.0	-29.4	
1.673	56.4	H	3.0	37.5	35.5	1.0	53.4	-13.0	-40.4	
2.509	59.4	H	3.0	39.9	35.4	1.0	53.9	-13.0	-40.9	
3.346	60.9	H	3.0	44.1	35.5	1.0	51.3	-13.0	-38.3	
4.182	63.6	H	3.0	46.8	35.2	1.0	51.0	-13.0	-38.0	
5.018	62.1	H	3.0	48.9	35.3	1.0	47.5	-13.0	-34.5	
5.855	58.1	H	3.0	50.5	35.5	1.0	42.0	-13.0	-29.0	
High Ch. (848.6 MHz)										
1.697	-51.8	V	3.0	37.4	35.5	1.0	48.9	-13.0	-35.9	
2.546	59.9	V	3.0	42.0	35.4	1.0	52.3	-13.0	-39.3	
3.394	46.4	V	3.0	44.4	35.5	1.0	36.5	-13.0	-23.5	
4.243	-62.3	V	3.0	46.4	35.2	1.0	50.1	-13.0	-37.1	
5.092	58.6	V	3.0	48.5	35.3	1.0	44.3	-13.0	-31.3	
5.940	58.7	V	3.0	49.6	35.5	1.0	43.6	-13.0	-30.6	
1.697	56.0	H	3.0	37.7	35.5	1.0	52.8	-13.0	-39.8	
2.546	60.9	H	3.0	40.1	35.4	1.0	55.2	-13.0	-42.2	
3.394	60.7	H	3.0	44.3	35.5	1.0	50.9	-13.0	-37.9	
4.243	-63.9	H	3.0	47.0	35.2	1.0	51.1	-13.0	-38.1	
5.092	-62.1	H	3.0	49.1	35.3	1.0	47.3	-13.0	-34.3	
5.940	58.1	H	3.0	50.7	35.5	1.0	41.9	-13.0	-28.9	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

PCS BAND GPRS SPURIOUS & HARMONIC (EIRP)

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:	TOSHIBA COPORATION									
Project #:	09U12936									
Date:	11/20/2009									
Test Engineer:	MENGISTU MEKURIA									
Configuration:	EUT EMBEDED INSIDE TOSHIBA NOTEBOOK									
Mode:	TX, GPRS PCS BAND									
Chamber			Pre-amplifier			Filter		Limit		
5m Chamber B			T145 8449B			Filter 1		Part 24		
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch. (1850.2 MHz)										
3.700	-56.0	V	3.0	45.1	35.4	1.0	-45.2	-13.0	-32.2	
5.551	-51.2	V	3.0	49.2	35.4	1.0	-36.4	-13.0	-23.4	
7.401	-67.1	V	3.0	51.3	35.7	1.0	-50.5	-13.0	-37.5	
9.251	-65.0	V	3.0	53.6	35.6	1.0	-46.0	-13.0	-33.0	
3.700	-56.2	H	3.0	45.3	35.4	1.0	-45.2	-13.0	-32.2	
5.551	-49.7	H	3.0	50.0	35.4	1.0	-34.1	-13.0	-21.1	
7.401	-67.6	H	3.0	53.0	35.7	1.0	-49.4	-13.0	-36.4	
9.251	-67.3	H	3.0	55.1	35.6	1.0	-46.8	-13.0	-33.8	
Mid Ch. (1880.00 MHz)										
3.760	-55.8	V	3.0	45.3	35.3	1.0	-44.9	-13.0	-31.9	
5.640	-52.8	V	3.0	49.3	35.4	1.0	-37.9	-13.0	-24.9	
7.520	-66.8	V	3.0	51.4	35.7	1.0	-50.0	-13.0	-37.0	
9.400	-65.9	V	3.0	53.7	35.6	1.0	-46.7	-13.0	-33.7	
3.760	-60.0	H	3.0	45.5	35.3	1.0	-48.8	-13.0	-35.8	
5.640	-49.3	H	3.0	50.2	35.4	1.0	-33.6	-13.0	-20.6	
7.520	-67.4	H	3.0	53.1	35.7	1.0	-49.0	-13.0	-36.0	
9.400	-67.0	H	3.0	55.2	35.6	1.0	-46.3	-13.0	-33.3	
High Ch. (1909.8 MHz)										
3.820	-54.9	V	3.0	45.4	35.3	1.0	-43.8	-13.0	-30.8	
5.729	-53.1	V	3.0	49.4	35.4	1.0	-38.1	-13.0	-25.1	
7.639	-67.1	V	3.0	51.6	35.7	1.0	-50.2	-13.0	-37.2	
9.549	-65.0	V	3.0	53.9	35.6	1.0	-45.6	-13.0	-32.6	
3.820	-60.1	H	3.0	45.7	35.3	1.0	-48.6	-13.0	-35.6	
5.729	-44.9	H	3.0	50.3	35.4	1.0	-29.1	-13.0	-16.1	
7.639	-67.8	H	3.0	53.2	35.7	1.0	-49.3	-13.0	-36.3	
9.549	-65.1	H	3.0	55.4	35.6	1.0	-44.2	-13.0	-31.2	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

PCS BAND EGPRS SPURIOUS & HARMONIC (EIRP)

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:	TOSHIBA COPORATION									
Project #:	09U12936									
Date:	11/20/2009									
Test Engineer:	MENGISTU MEKURIA									
Configuration:	EUT EMBEDED INSIDE TOSHIBA NOTBOOK									
Mode:	TX,EGPRS PCS BAND									
Chamber		Pre-amplifier		Filter		Limit				
5m Chamber B		T145 8449B		Filter 1		Part 24				
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch. (1850.2 MHz)										
3.700	-53.7	V	3.0	45.1	35.4	1.0	-42.9	-13.0	-29.9	
5.551	-53.0	V	3.0	49.2	35.4	1.0	-38.2	-13.0	-25.2	
7.401	-65.5	V	3.0	51.3	35.7	1.0	-48.9	-13.0	-35.9	
9.251	-65.3	V	3.0	53.6	35.6	1.0	-46.3	-13.0	-33.3	
3.700	-56.8	H	3.0	45.3	35.4	1.0	-45.8	-13.0	-32.8	
5.551	-50.3	H	3.0	50.0	35.4	1.0	-34.7	-13.0	-21.7	
7.401	-64.1	H	3.0	53.0	35.7	1.0	-45.9	-13.0	-32.9	
9.251	-65.7	H	3.0	55.1	35.6	1.0	-45.2	-13.0	-32.2	
Mid Ch. (1880.00 MHz)										
3.760	-53.0	V	3.0	45.3	35.3	1.0	-42.0	-13.0	-29.0	
5.640	-53.6	V	3.0	49.3	35.4	1.0	-38.7	-13.0	-25.7	
7.520	-64.6	V	3.0	51.4	35.7	1.0	-47.8	-13.0	-34.8	
9.400	-65.0	V	3.0	53.7	35.6	1.0	-45.8	-13.0	-32.8	
3.760	-55.4	H	3.0	45.5	35.3	1.0	-44.2	-13.0	-31.2	
5.640	-51.3	H	3.0	50.2	35.4	1.0	-35.6	-13.0	-22.6	
7.520	-63.5	H	3.0	53.1	35.7	1.0	-45.1	-13.0	-32.1	
9.400	-64.5	H	3.0	55.2	35.6	1.0	-43.8	-13.0	-30.8	
High Ch. (1909.8 MHz)										
3.820	-54.6	V	3.0	45.4	35.3	1.0	-43.5	-13.0	-30.5	
5.729	-53.7	V	3.0	49.4	35.4	1.0	-38.7	-13.0	-25.7	
7.639	-64.5	V	3.0	51.6	35.7	1.0	-47.6	-13.0	-34.6	
9.549	-66.2	V	3.0	53.9	35.6	1.0	-46.8	-13.0	-33.8	
3.820	-55.6	H	3.0	45.7	35.3	1.0	-44.2	-13.0	-31.2	
5.729	-50.0	H	3.0	50.3	35.4	1.0	-34.1	-13.0	-21.1	
7.639	-64.9	H	3.0	53.2	35.7	1.0	-46.4	-13.0	-33.4	
9.549	-65.0	H	3.0	55.4	35.6	1.0	-44.1	-13.0	-31.1	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

PCS BAND CDMA 2000 1xRTT SPURIOUS & HARMONIC (EIRP)

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:	TOSHIBA COPORATION									
Project #:	09U12936									
Date:	11/20/2009									
Test Engineer:	MENGISTU MEKURIA									
Configuration:	EUT EMBEDDED INSIDE TOSHIBA NOTEBOOK									
Mode:	TX, CDMA PCS BAND									
Chamber		Pre-amplifier		Filter		Limit				
5m Chamber B		T145 8449B		Filter 1		Part 24				
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch. (1851.25 MHz)										
3.703	-45.8	V	3.0	45.1	35.4	1.0	-35.0	-13.0	-22.0	
5.554	-53.3	V	3.0	49.2	35.4	1.0	-38.6	-13.0	-25.6	
7.405	-61.7	V	3.0	51.3	35.7	1.0	-45.1	-13.0	-32.1	
3.703	-41.8	H	3.0	45.3	35.4	1.0	-30.8	-13.0	-17.8	
5.554	-51.4	H	3.0	50.0	35.4	1.0	-35.7	-13.0	-22.7	
7.405	-63.2	H	3.0	53.0	35.7	1.0	-45.0	-13.0	-32.0	
Mid Ch. (1880.00 MHz)										
3.760	-40.0	V	3.0	45.3	35.3	1.0	-29.1	-13.0	-16.1	
5.640	-54.3	V	3.0	49.3	35.4	1.0	-39.4	-13.0	-26.4	
7.520	-61.9	V	3.0	51.4	35.7	1.0	-45.1	-13.0	-32.1	
3.760	-37.8	H	3.0	45.5	35.3	1.0	-26.6	-13.0	-13.6	
5.640	-55.3	H	3.0	50.2	35.4	1.0	-39.6	-13.0	-26.6	
7.520	-61.0	H	3.0	53.1	35.7	1.0	-42.6	-13.0	-29.6	
High Ch. (1908.75 MHz)										
3.818	-42.3	V	3.0	45.4	35.3	1.0	-31.2	-13.0	-18.2	
5.726	-54.7	V	3.0	49.4	35.4	1.0	-39.8	-13.0	-26.8	
7.635	-61.1	V	3.0	51.6	35.7	1.0	-44.2	-13.0	-31.2	
3.818	-38.6	H	3.0	45.7	35.3	1.0	-27.2	-13.0	-14.2	
5.726	-55.1	H	3.0	50.3	35.4	1.0	-39.2	-13.0	-26.2	
7.635	-61.8	H	3.0	53.2	35.7	1.0	-43.2	-13.0	-30.2	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

PCS BAND WCDMA SPURIOUS & HARMONIC (EIRP)

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:	TOSHIBA COPORATION									
Project #:	09U12936									
Date:	11/20/2009									
Test Engineer:	MENGISTU MEKURIA									
Configuration:	EUT EMBEDED INSIDE TOSHIBA NOTEBOOK									
Mode:	TX, WCDMA PCS BAND									
Chamber	Pre-amplifier	Filter	Limit							
5m Chamber B	T145 8449B	Filter 1	Part 24							
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch. (1852.4 MHz)										
3.705	-45.3	V	3.0	45.1	35.4	1.0	-34.6	-13.0	-21.6	
5.557	-62.4	V	3.0	49.2	35.4	1.0	-47.6	-13.0	-34.6	
7.410	-66.9	V	3.0	51.3	35.7	1.0	-50.3	-13.0	-37.3	
9.262	-68.1	V	3.0	53.6	35.6	1.0	-49.1	-13.0	-36.1	
3.705	-44.1	H	3.0	45.3	35.4	1.0	-33.1	-13.0	-20.1	
5.557	-61.0	H	3.0	50.0	35.4	1.0	-45.3	-13.0	-32.3	
7.410	-68.1	H	3.0	53.0	35.7	1.0	-49.8	-13.0	-36.8	
9.262	-66.7	H	3.0	55.1	35.6	1.0	-46.2	-13.0	-33.2	
Mid Ch. (1880.00 MHz)										
3.760	-45.3	V	3.0	45.3	35.3	1.0	-34.4	-13.0	-21.4	
5.640	-63.3	V	3.0	49.3	35.4	1.0	-48.5	-13.0	-35.5	
7.520	-67.7	V	3.0	51.4	35.7	1.0	-51.0	-13.0	-38.0	
9.400	-69.0	V	3.0	53.7	35.6	1.0	-49.8	-13.0	-36.8	
3.760	-41.5	H	3.0	45.5	35.3	1.0	-30.3	-13.0	-17.3	
5.640	-61.5	H	3.0	50.2	35.4	1.0	-45.7	-13.0	-32.7	
7.520	-68.7	H	3.0	53.1	35.7	1.0	-50.3	-13.0	-37.3	
9.400	-68.3	H	3.0	55.2	35.6	1.0	-47.6	-13.0	-34.6	
High Ch. (1907.6 MHz)										
3.815	-45.7	V	3.0	45.4	35.3	1.0	-34.6	-13.0	-21.6	
5.723	-63.8	V	3.0	49.4	35.4	1.0	-48.9	-13.0	-35.9	
7.630	-68.1	V	3.0	51.6	35.7	1.0	-51.2	-13.0	-38.2	
9.538	-67.5	V	3.0	53.9	35.6	1.0	-48.1	-13.0	-35.1	
3.815	-42.2	H	3.0	45.7	35.3	1.0	-30.8	-13.0	-17.8	
5.723	-60.6	H	3.0	50.3	35.4	1.0	-44.7	-13.0	-31.7	
7.630	-66.7	H	3.0	53.2	35.7	1.0	-48.2	-13.0	-35.2	
9.538	-67.5	H	3.0	55.4	35.6	1.0	-46.6	-13.0	-33.6	

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Note: No other emissions were detected above the system noise floor.