

FCC/ IC LTE REPORT

Permissive Change

FCC Applicant Name:

Panasonic Corporation of North America

FCC Address:Two Riverfront Plaza, 9th Floor, Newark, NJ 07102-5490, USA**IC Applicant Name:**

Panasonic Corporation

IC Address:1-10-12 Yagumohigashi-machi, Moriguchi, Osaka
570-0021 JAPAN**Date of Issue:**

November 28, 2018

Location:HCT CO., LTD.,
74, Seoicheon-ro 578beon-gil, Majang-myeon,
Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA**Report No.:** HCT-RF-1811-FI004

FCC ID:	ACJ9TGWW18A
IC:	216H-CFWW18A
FCC APPLICANT:	Panasonic Corporation of North America
IC APPLICANT:	Panasonic Corporation

Model(s): CF-33
EUT Type: Personal Computer
FCC Classification: PCS Licensed Transmitter(PCB)
FCC Rule Part(s): §27, §2
IC Rule(s): RSS-199 (Issue 3)

The measurements shown in this report were made in accordance with the procedures specified in CFR47 section §2.947. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them.

HCT CO., LTD. Certifies that no party to this application has subject to a denial of Federal benefits that includes FCC benefits pursuant to section 5301 of the Anti-Drug Abuse Act of 1998, 21 U.S. C. 853(a)



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Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-RF-1811-FI004	November 28, 2018	- First Approval Report

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MEASUREMENT REPORT

1. GENERAL INFORMATION

FCC Applicant Name:	Panasonic Corporation of North America
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FCC ID:	ACJ9TGWW18A
IC:	216H-CFWW18A
Application Type:	FCC : Class II Permissive Change IC : Class IV Permissive Change
FCC Classification:	PCS Licensed Transmitter(PCB)
FCC Rule Part(s):	§27, §2
IC Rule(s):	RSS-199 (Issue 3)
EUT Type:	Personal Computer
Model(s):	CF-33
Tx Frequency:	2498.5 – 2687.5 : 5 MHz 2501.0 – 2685.0 : 10 MHz 2503.5 – 2682.5 : 15 MHz 2506.0 – 2680.0 : 20 MHz
Date(s) of Tests:	November 19, 2018 ~ November 21, 2018

2. INTRODUCTION

2.1. DESCRIPTION OF EUT

The EUT was a Personal Computer.

2.2. MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

2.3. TEST FACILITY

The Fully-anechoic chamber and conducted measurement facility used to collect the radiated data are located at the 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA.

3. DESCRIPTION OF TESTS

3.1 TEST PROCEDURE

Test Description	Test Procedure Used
Radiated Spurious and Harmonic Emissions	- KDB 971168 D01 v03r01 – Section 6.2 - ANSI/TIA-603-E-2016 – Section 2.2.12

3.2 RADIATED SPURIOUS EMISSIONS

Test Overview

Radiated tests are performed in the Fully-anechoic chamber.

Radiated Spurious Emission Measurements at 3 meters by Substitution Method according to ANSI/TIA-603-E-2016.

Test Settings

1. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
2. VBW $\geq 3 \times$ RBW
3. Span = 1.5 times the OBW
4. No. of sweep points $> 2 \times$ span / RBW
5. Detector = Peak
6. Trace mode = Max Hold
7. The trace was allowed to stabilize
8. Test channel : Low/ Middle/ High
9. Frequency range : We are performed all frequency to 10th harmonics from 9 kHz.

Test Note

1. Measurements value show only up to 3 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
2. The EUT was tested in three orthogonal planes(X, Y, Z) and in all possible test configurations and positioning.
The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the test data

3.3 WORST CASE(RADIATED TEST)

- The EUT was tested in three orthogonal planes(X, Y, Z) and in all possible test configurations and positioning.
- All modes of operation were investigated and the worst case configuration results are reported.
- The worst case is reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the test data.
- Please refer to the table below.

[Worst case]

Test Description	Modulation	RB size	Axis
Radiated Spurious and Harmonic Emissions	QPSK	1	X

4. LIST OF TEST EQUIPMENT

Manufacture	Model/ Equipment	Serial Number	Calibration Date	Calibration Interval	Calibration Due
REOHDE & SCHWARZ	SCU 18 / AMPLIFIER	10094	04/17/2018	Annual	04/17/2019
Wainwright	WHK1.2/15G-10EF/H.P.F	4	04/04/2018	Annual	04/04/2019
Wainwright	WHK3.3/18G-10EF/H.P.F	2	04/04/2018	Annual	04/04/2019
Schwarzbeck	BBHA 9120D/ Horn Antenna(1~18GHz)	147	09/14/2018	Annual	09/14/2019
Schwarzbeck	BBHA 9120D/ Horn Antenna(1~18GHz)	9120D-1298	10/04/2018	Annual	10/04/2019
Schwarzbeck	BBHA 9170/ Horn Antenna(15~40GHz)	BBHA9170342	04/25/2017	Biennial	04/25/2019
Schwarzbeck	BBHA 9170/ Horn Antenna(15~40GHz)	BBHA9170124	04/25/2017	Biennial	04/25/2019
Agilent	N9020A/Signal Analyzer(10Hz~26.5GHz)	MY52090906	06/08/2018	Annual	06/08/2019
Hewlett Packard	8493C/ATTENUATOR(20dB)	17280	06/21/2018	Annual	06/21/2019
REOHDE & SCHWARZ	FSV40/Spectrum Analyzer(10Hz~40GHz)	100931	10/22/2018	Annual	10/22/2019
Schwarzbeck	FMZB1513/ Loop Antenna(9kHz~30MHz)	1513-175	08/23/2018	Biennial	08/23/2020
Schwarzbeck	VULB9160/ Bilog Antenna	9160-3368	08/09/2018	Biennial	08/09/2020
Schwarzbeck	VULB9160/ Hybrid Antenna	760	04/06/2017	Biennial	04/06/2019
Anritsu Corp.	MT8821C/Wideband Radio Communication Tester	6201502997	08/13/2018	Annual	08/13/2019
Anritsu Corp.	MT8820C/Wideband Radio Communication Tester	6201026545	02/08/2018	Annual	02/08/2019
REOHDE & SCHWARZ	SMB100A/ SIGNAL GENERATOR (100kHz~40GHz)	177633	07/19/2018	Annual	07/19/2019
REOHDE & SCHWARZ	ESU40 / EMI TEST RECEIVER	100524	07/27/2018	Annual	07/27/2019

Note:

1. Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date

5. MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.4:2014.

All measurement uncertainty values are shown with a coverage factor of $k = 2$ to indicate a 95 % level of confidence. The measurement data shown herein meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Parameter	Expanded Uncertainty (\pmdB)
Conducted Disturbance (150 kHz ~ 30 MHz)	1.82
Radiated Disturbance (9 kHz ~ 30 MHz)	3.40
Radiated Disturbance (30 MHz ~ 1 GHz)	4.80
Radiated Disturbance (1 GHz ~ 18 GHz)	5.70
Radiated Disturbance (18 GHz ~ 40 GHz)	5.71

6. SUMMARY OF TEST RESULTS

6.1 Test Condition : Conducted Test

Test Description	FCC Part Section(s)	IC Part Section(s)	Test Limit	Test Result	Status
Occupied Bandwidth	§2.1049	RSS-199 (4.2)	N/A	PASS	NT ^{Note4}
Band Edge / Spurious and Harmonic Emissions at Antenna Terminal.	§2.1051, §27.53(m)(4)	RSS-199 (4.5)	<ul style="list-style-type: none"> ■ < 40 + 10log10 (P[Watts]) at Channel edges ■ < 43 + 10log10 (P[Watts]) between 5 and X MHz from Channel edges ■ < 55 + 10log10 (P[Watts]) beyond X MHz beyond from Channel edges ■ < 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz 	PASS	NT ^{Note4}
Conducted Output Power	§2.1046	RSS-199 (4.4)	N/A	<u>See Note2</u>	C ^{Note3}
Frequency stability	§2.1055, §27.54	RSS-199 (4.3)	Emission must remain in band	PASS	NT ^{Note4}

Note:

1. C = Comply, NT = Not Tested, NA = Not Applicable, NC = Not Comply
2. See SAR Report
3. Output power was verified to be within the expected tune up tolerances prior to performing the spot checks for radiated spurious emissions and band edge to confirm that the proposed changes to the digital circuitry had not adversely affected the previously reported values in the original filing
4. CF-33 model is electrically identical to the Original models.

6.2 Test Condition : Radiated Test

Test Description	FCC Part Section(s)	IC Part Section(s)	Test Limit	Test Result	Status
Radiated Spurious and Harmonic Emissions	§2.1053, §27.53(m)(4)	RSS-199 (4.5)	$< 55 + 10\log_{10} (P[\text{Watts}])$	PASS	C ^{Note2}

Note:

1. C = Comply, NT = Not Tested, NA = Not Applicable, NC = Not Comply
2. The data from that application has been verified through appropriate spot checks to demonstrate compliance for this device as shown in the test result of section 7.

7. TEST DATA

7.1 RADIATED SPURIOUS EMISSIONS

- PCC Channel : 39683 (2499.3MHz)
- PCC BW(MHz) : 5
- PCC RB : 1
- SCC Channel : 39800 (2511.0MHz)
- SCC BW(MHz) : 20
- SCC RB : 1
- DISTANCE: 1 meters
- LIMIT: -25.0 dBm

Freq.(MHz)	Measured Level [dBm]	Ant. Gain (dBi)	Substitute Level [dBm]	C.L	Pol.	Result (dBm)
7,506.00	-32.70	11.53	-39.13	2.93	V	-30.53

8. ANNEX A_ TEST SETUP PHOTO

Please refer to test setup photo file no. as follows;

No.	Description
1	HCT-RF-1811-FI004-P
2	HCT-RF-1811-FI005-P