FCC Part 1 Subpart I
FCC Part 2 Subpart J

TEST REPORT

FOR

GSM/WCDMA/LTE/5G Phone with BT, DTS/UNII a/b/g/n/ac/ax, GPS, WPT & NFC

FCC ID: PY7-13187R

REPORT NUMBER: R15110020-E1

ISSUE DATE: 2024-03-14

Prepared for
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ACCREDITED
CERT #0751.06

REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	2024-03-14	Initial Issue	Brian Kiewra

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	Sony Corporation 1-7-1 Konan Minato-ku Tokyo, 108-0075, Japan
EUT DESCRIPTION:	GSM/WCDMA/LTE/5G Phone with BT, DTS/UNII a/b/g/n/ac/ax, GPS, WPT & NFC
SERIAL NUMBER:	QV77008ZLG(Source), QV7700BRLQ(Load), QV7700JFLQ(Load), QV7700NWLQ(Load)
SAMPLE RECEIPT DATE:	2024-01-26
DATE TESTED:	2024-02-28 to 2024-03-01

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 1 SUBPART I & PART 2 SUBPART J	Complies

UL LLC tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC will constitute fraud and shall nullify the document.

Approved & Released
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2. TEST METHODOLOGY

All testing / calculations were made in accordance with FCC KDB 447498 D01, KDB 447498 D03, KDB 680106 D01 v03r01.

3. FACILITIES AND ACCREDITATION

UL LLC is accredited by A2LA, certification # 0751.06, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

	Address	ISED CABID	ISED Company Number	FCC Registration
☐	Building: 12 Laboratory Dr RTP, NC 27709, U.S.A	US0067	2180C	825374
☒	Building: 2800 Perimeter Park Dr. Suite B Morrisville, NC 27560, U.S.A		27265	

4. DECISION RULES AND MEASUREMENT UNCERTAINTY

4.1. METROLOGICAL TRACEABILITY

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. DECISION RULES

For all tests where the applicable U_{LAB} <= U_{MAX} the Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4: 2012 Clause 8.2, where U_{MAX} = 30% (0.3) for RF Exposure evaluations. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

For all tests where the applicable U_{LAB} > U_{MAX} the Decision Rule is based on Guarded Acceptance in accordance with ISO Guide 98-4: 2012 Clause 8.3.2, with a guard band equal to (U_{LAB} – U_{MAX}), where U_{MAX} = 30% (0.3) for RF Exposure evaluations. (Test results are adjusted by the value of the guard band to determine conformity with a specified requirement.)

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	U_{Lab}
Magnetic Field using Exposure Level Meter	+/- 0.80 dB
Electric Field using Exposure Level Meter	+/- 0.91 dB
Time	3.39%

Uncertainty figures are valid to a confidence level of 95%, k = 2.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a GSM/WCDMA/LTE/5G Phone with BT, DTS/UNII a/b/g/n/ac/ax, GPS, WPT & NFC. This test report covers WPT RF Exposure testing. The device can function as a WPT charger operating from 111-148kHz.

While WPT is functioning, the device is limited to mobile use conditions and was evaluated for desktop applications.

5.2. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Power Supply	Sony	XQZ-UC11	1821W34209802	NA

I/O CABLES

I/O Cable List						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	USB	1	USB-C	Non-Shielded	<3m	Connected to power supply

TEST SETUP

The following five configurations are tested:

Configuration	Mode	Descriptions
1	Standby (Power Detecting)	EUT Alone powered by AC/DC adapter
2	Operating with server (source) and client (load) aligned (With EUT charging) Note: Measurements were made when the battery level of the client was at a state of <10%, 50%, and 100%.	EUT powered by AC/DC adapter
3	Operating with server (source) and client (load) aligned, with 90° rotation between them. (With EUT charging) Note: Measurements were made when the battery level of the client was at a state of <10%, 50%, and 100%.	EUT powered by AC/DC adapter
4	Same as configuration 2, with a worst case misalignment between the server and client.	EUT powered by AC/DC adapter
5	Same as configuration 3, with a worst case misalignment between the server and client.	EUT powered by AC/DC adapter

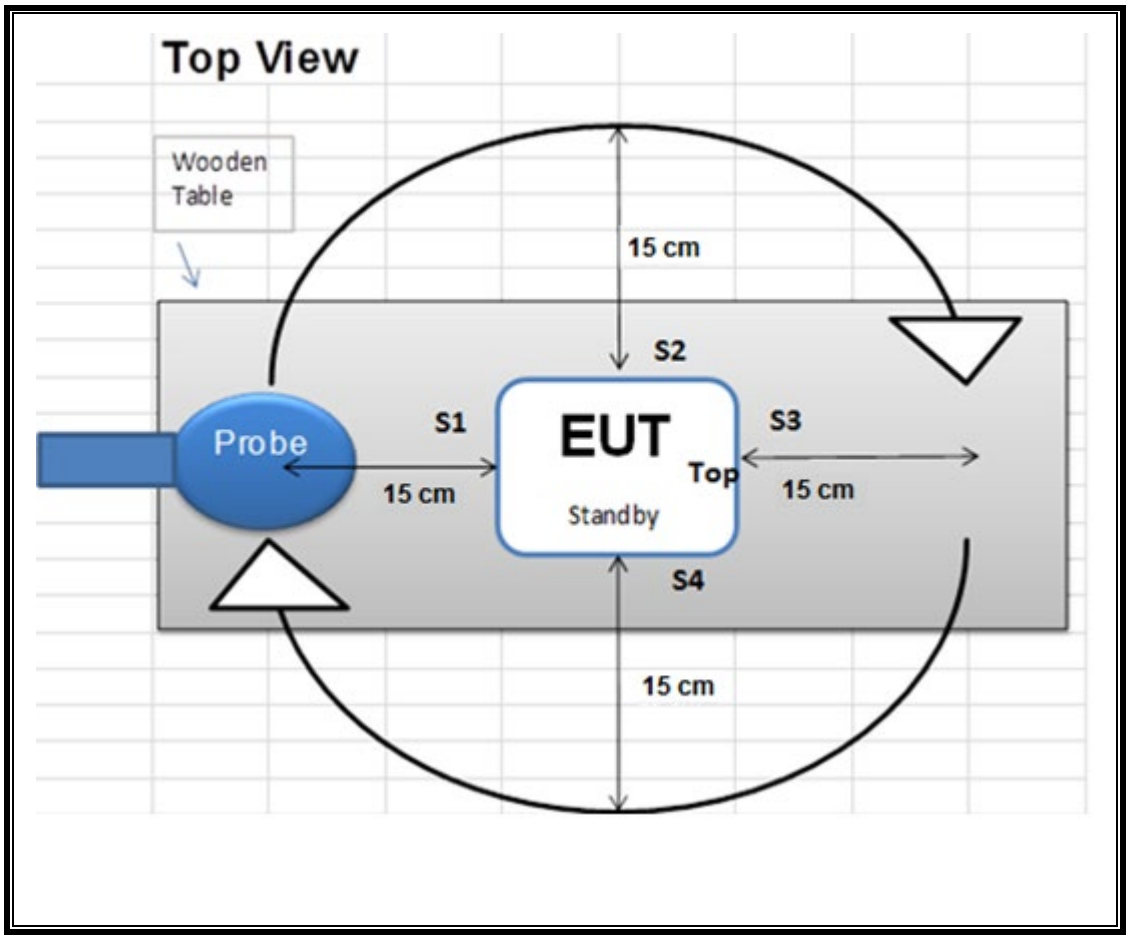
SETUP DIAGRAMS

Please refer to R15110020-EP1 for setup diagrams.

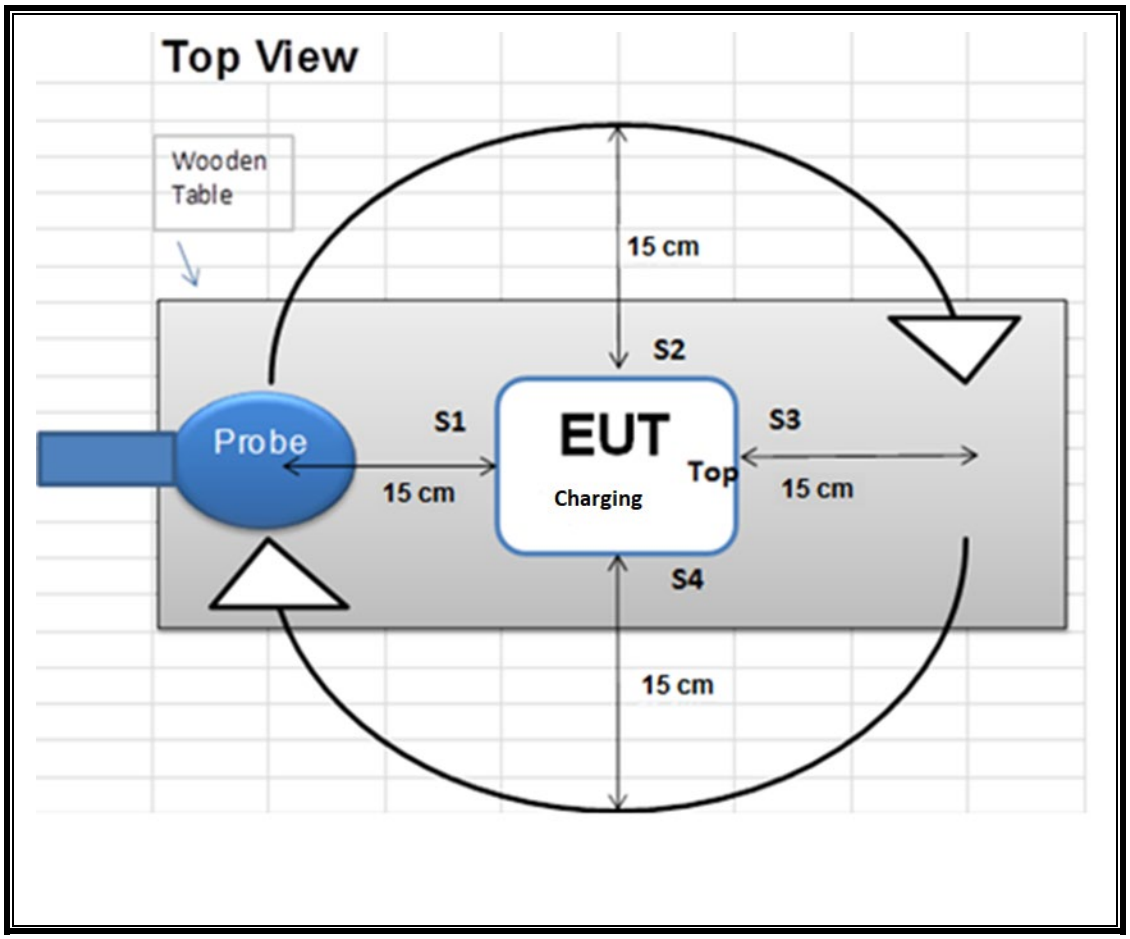
MEASUREMENT SETUP

The measurement was taken using a probe placed 15cm surrounding the device and 20cm above the top surface of the EUT.
Measurements were taken from the top and all sides of the EUT per KDB 680106 D01 v03r01.

CONFIGURATION 1



CONFIGURATIONS 2-5



6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment were used for the tests documented in this report:

Test Equipment List					
Description	**Manufacturer**	**Model**	**Equip. ID**	**Cal Date**	**Cal Due**
Electric and Magnetic Field Probe	Narda	EHP-200AC	171860	2023-07-31	2024-07-31
Spectrum Analyzer	Keysight	N9030A	90416	2023-06-09	2024-06-09

7. DUTY CYCLE

LIMITS

None; for reporting purposes only.

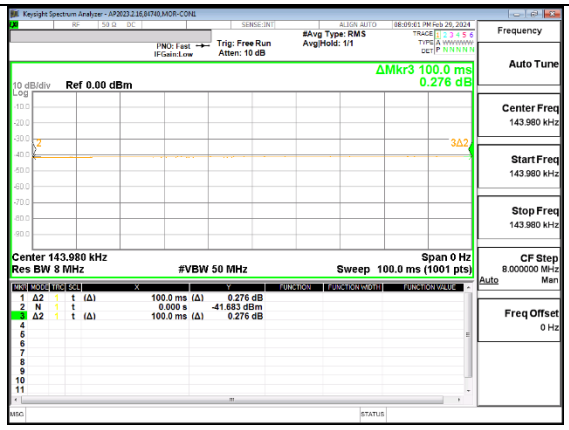
PROCEDURE

Zero-Span Spectrum Analyzer Method.

ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)
Standby	92.92	1002.00	0.0927	9.27%
Operating	100.00	100.00	1.00	100.00%

STANDBY MODE



OPERATING MODE

8. MAXIMUM PERMISSIBLE RF EXPOSURE TEST RESULTS

8.1. FCC LIMITS

§1.1310 The criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of §2.1093 of this chapter.

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*($900/f^2$)	6
30–300	61.4	0.163	1.0	6
300–1500			f/300	6
1500–100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*($180/f^2$)	30

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)—Continued

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
30–300	27.5	0.073	0.2	30
300–1500			f/1500	30
1500–100,000			1.0	30

f = frequency in MHz
* = Plane-wave equivalent power density
NOTE 1 TO TABLE 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.
NOTE 2 TO TABLE 1: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

Note: The limit at 300 kHz was used for devices operating between 100-300 kHz.

8.2. SUMMARY OF TEST RESULTS

RESULTS

ID:	84740/21193	Date:	2024-02-28 to 2024-03-01

Note: Both magnetic and electric field strengths have been investigated from 9 kHz to 30 MHz at 15cm surrounding the device and 20cm above the top surface of the EUT operation frequency at 111-148 kHz.

The inductive wireless power transfer device meets all of the following requirements:

☒ Power transfer frequency is less than 1 MHz
☒ Output power from each primary coil is less than or equal to 15 watts.
☒ The transfer system includes only single primary and secondary coils. This includes charging systems that may have multiple primary coils and clients that are able to detect and allow coupling only between individual pairs of coils.
☒ Client device is placed directly in contact with the transmitter.
☒ Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).
☒ The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.

FCC RF EXPOSURE SUMMARY OF RESULTS

Electric Field			Magnetic Field		
FCC Limit (V/m)	Maximum Average Reading (V/m)	Percentage (%)	FCC Limit (A/m)	Maximum Average Reading (A/m)	Percentage (%)
614	3.533	0.58%	1.63	0.196	12.02%

Note: since the E and H field are lower than the limit by more than 50% of the limit then a PAG is not required.

8.3. DETAILED TEST RESULTS

E- FIELD AND H- FIELD MEASUREMENTS

Note: Peak measurements were performed. RMS values were calculated from the peak measurement. Please refer to the formula for calculating the RMS values: [Field Strength x √Duty Cycle].

Config	Test Mode	Meas Dist (cm)	E field Limit (V/m)	Electric Field Reading (V/m)				Magnetic Field Limit (A/m)	Magnetic Field Reading (A/m)			
			FCC	Location	Peak	Duty Cycle %	FCC Average	FCC	Location	Peak	Duty Cycle %	FCC Average
1	Standby	15 cm surrounding the device (S1 - S4) and 20 cm above the top surface of the EUT	614	S1	0.393	9.27	0.120	1.63	S1	0.078	9.27	0.024
				S2	0.369		0.112		S2	0.031		0.009
				S3	0.399		0.121		S3	0.060		0.018
				S4	0.398		0.121		S4	0.027		0.008
				Top	0.606		0.184		Top	0.261		0.080
				Max	0.606		**0.184**		Max	0.261		**0.080**
2	Operating Power <10% Charging			S1	0.514	100.00	0.514		S1	0.031	100.00	0.031
				S2	0.341		0.341		S2	0.013		0.013
				S3	0.408		0.408		S3	0.039		0.039
				S4	0.441		0.441		S4	0.013		0.013
				Top	0.688		0.688		Top	0.013		0.013
				Max	0.688		**0.688**		Max	0.039		**0.039**
	Operating Power 50% Charging			S1	0.589	100.00	0.589		S1	0.021	100.00	0.021
				S2	0.525		0.525		S2	0.013		0.013
				S3	0.540		0.540		S3	0.020		0.020
				S4	0.468		0.468		S4	0.012		0.012
				Top	0.669		0.669		Top	0.013		0.013
				Max	0.669		**0.669**		Max	0.021		**0.021**
	Operating Power 100 % Charged			S1	0.974	100.00	**0.974**		S1	0.025	100.00	0.025
				S2	0.511		0.511		S2	0.012		0.012
				S3	0.554		0.554		S3	0.016		0.016
				S4	0.473		0.473		S4	0.013		0.013
				Top	0.695		0.695		Top	0.013		0.013
				Max	0.974		**0.974**		Max	0.025		**0.025**
	Operating Power 100 % Charged with 5 mm air gap			S1	0.562	100.00	0.562		S1	0.059	100.00	0.059
				S2	0.423		0.423		S2	0.014		0.014
				S3	0.517		0.517		S3	0.069		**0.069**
				S4	0.403		0.403		S4	0.014		0.014
				Top	0.705		0.705		Top	0.014		0.014
				Max	0.705		**0.705**		Max	0.069		**0.069**
3	Operating Power <10% Charging			S1	2.503	100.00	**2.503**		S1	0.017	100.00	0.017
				S2	0.446		0.446		S2	0.012		0.012
				S3	1.633		1.633		S3	0.027		0.027
				S4	0.431		0.431		S4	0.012		0.012
				Top	0.981		0.981		Top	0.013		0.013
				Max	2.503		**2.503**		Max	0.027		**0.027**
	Operating Power 50% Charging			S1	1.854	100.00	1.854		S1	0.031	100.00	0.031
				S2	0.463		0.463		S2	0.013		0.013
				S3	1.404		1.404		S3	0.039		**0.039**
				S4	0.399		0.399		S4	0.015		0.015
				Top	0.927		0.927		Top	0.013		0.013
				Max	1.854		**1.854**		Max	0.039		**0.039**
	Operating Power 100 % Charged			S1	2.280	100.00	2.280		S1	0.017	100.00	0.017
				S2	0.492		0.492		S2	0.014		0.014
				S3	1.541		1.541		S3	0.029		0.029
				S4	0.459		0.459		S4	0.014		0.014
				Top	0.979		0.979		Top	0.012		0.012
				Max	2.280		**2.280**		Max	0.029		**0.029**

Config	Test Mode	Meas Dist (cm)	E field Limit (V/m)	Electric Field Reading (V/m)				Magnetic Field Limit (A/m)	Magnetic Field Reading (A/m)			
			FCC	Location	Peak	Duty Cycle %	FCC Average	FCC	Location	Peak	Duty Cycle %	FCC Average
4	Operating Power < 10% Charging	15 cm surrounding the device (S1 - S4) and 20 cm above the top surface of the EUT	614	S1	0.371	100.00	0.371	1.63	S1	0.021	100.00	0.021
				S2	0.381		0.381		S2	0.021		0.021
				S3	0.405		0.405		S3	0.101		0.101
				S4	0.375		0.375		S4	0.039		0.039
				Top	0.361		0.361		Top	0.015		0.015
				Max	0.405		0.405		Max	0.101		0.101
	Operating Power 50% Charging			S1	0.374	100.00	0.374		S1	0.172	100.00	0.172
				S2	0.357		0.357		S2	0.049		0.049
				S3	0.388		0.388		S3	0.196		**0.196**
				S4	0.398		0.398		S4	0.068		0.068
				Top	0.393		0.393		Top	0.016		0.016
				Max	0.398		0.398		Max	0.196		**0.196**
	Operating Power 100 % Charged			S1	0.402	100.00	0.402		S1	0.111	100.00	0.111
				S2	0.388		0.388		S2	0.031		0.031
				S3	0.436		0.436		S3	0.108		0.108
				S4	0.392		0.392		S4	0.047		0.047
				Top	0.443		**0.443**		Top	0.019		0.019
				Max	0.443		**0.443**		Max	0.111		0.111
5	Operating Power < 10% Charging			S1	2.076	100.00	2.076		S1	0.020	100.00	0.020
				S2	0.472		0.472		S2	0.016		0.016
				S3	1.462		1.462		S3	0.024		0.024
				S4	0.398		0.398		S4	0.017		0.017
				Top	0.542		0.542		Top	0.017		0.017
				Max	2.076		2.076		Max	0.024		0.024
	Operating Power 50% Charging			S1	2.319	100.00	2.319		S1	0.029	100.00	0.029
				S2	0.447		0.447		S2	0.023		0.023
				S3	1.240		1.240		S3	0.042		**0.042**
				S4	0.377		0.377		S4	0.030		0.030
				Top	0.423		0.423		Top	0.021		0.021
				Max	2.319		2.319		Max	0.042		**0.042**
	Operating Power 100 % Charged			S1	3.533	100.00	**3.533**		S1	0.014	100.00	0.014
				S2	0.464		0.464		S2	0.017		0.017
				S3	1.707		1.707		S3	0.014		0.014
				S4	0.578		0.578		S4	0.019		0.019
				Top	1.739		1.739		Top	0.012		0.012
				Max	3.533		**3.533**		Max	0.019		0.019

Note: SNs QV7700JFLQ used for 0%, SNs QV7700BRLQ and QV7700NWLQ for 50% states, and SN QV7700BRLQ used for 100% state

9. SETUP PHOTO

Please refer to R15110020-EP1 for setup photos.

END OF REPORT