

ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

UN-INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 18 SUBPART C VERIFICATION REQUIREMENT

OF

Product Name: Joya Touch Single Slot Dock Charge Only

Brand Name: DATALOGIC

Model No.: Joya Touch Single Slot Dock Charge Only

Added Model(s): N/A

**Based on SGS
EMC Report No.:** E1/2017/70205

Issue Date: Feb. 26, 2018

FCC Rule Part: FCC Rules and Regulations Part 18(2016)

Prepared for: Datalogic S.r.l.
Via S. Vitalino, 13-40012 Lippo di
Calderara di Reno (BO) - Italy

Prepared by: SGS Taiwan Ltd.
Electronics & Communication Laboratory
No.2, Keji 1st Rd., Guishan Dist., Taoyuan
City 333, Taiwan (R.O.C.)



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DECLARATION OF COMPLIANCE

Applicant: Datalogic S.r.l.
Via S. Vitalino, 13-40012 Lippo di Calderara di Reno (BO) - Italy

Manufacturer: Datalogic S.r.l.
Via S. Vitalino, 13-40012 Lippo di Calderara di Reno (BO) - Italy

Equipment Under Test: Joya Touch Single Slot Dock Charge Only

Brand Name: DATALOGIC

Model No.: Joya Touch Single Slot Dock Charge Only

Added Model(s) : N/A

Model Difference: N/A

File Number: MH/2018/10207

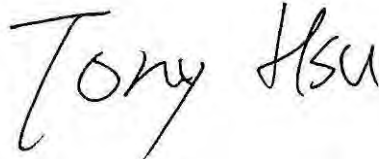
Date of EUT Received: Jan. 19, 2018

For the configuration tested, the EUT complied with the standards specified on Page 1.

Remarks:**We hereby certify that:**

The above equipment was tested by SGS Taiwan Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 :2014, MP-5 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 18

The test results of this report relate only to the tested sample identified in this report.

Approved By**Date**

Feb. 26, 2018

Tony Hsu (Asst. Manager)

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Version

Report Number	Version No.	Description	Date
E1/2017/70205	00	Original report	Oct. 26, 2017
MH/2018/10207	01	Added FCC ID: U4GJNGSSDLITE	Feb. 26, 2018

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1. General Information

1.1 Applicant & Manufacturer Information

Applicant : Datalogic S.r.l.
Address of Applicant : Via S. Vitalino, 13-40012 Lippo di Calderara di Reno (BO) - Italy
e-mail Address of Applicant: : Ruggero.Cacioppo@datalogic.com
Manufacturer : Datalogic S.r.l.
Address of Manufacturer : Via S. Vitalino, 13-40012 Lippo di Calderara di Reno (BO) - Italy

1.2 General Description of EUT

Product Name : Joya Touch Single Slot Dock Charge Only
Brand Name : DATALOGIC
Model No. : Joya Touch Single Slot Dock Charge Only
Added Model(s) : N/A
Model Difference : N/A
Maximum Energy Generated : Charger:0 ~ 5W
FCC ID : U4GJNGSSDLITE

1.3 Details of EUT

Power Supply : AC 100~240V, 50~60Hz
Modes/Function : Mode 1. Charger mode
Worst case : CE, Below RE worst case :
Mode 1. Charger mode
Highest operate description : 200 kHz
Adapter : Model No.: BI24-050300-I
I/P : AC 100-240V, 50/60Hz, 0.8A
O/P : DC 5V, 3A

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1.4 Operation Procedure

Mode 1

1. Let EUT connect to the transformer and peripheral PDA plug in the EUT to charge.
2. Start the test.

1.5 Description of Support Units

PRODUCT	MANUFACTURER	MODEL NO.	SERIAL NO.
Scanner PDA	DATALOGIC	JOYA TOUCH	E17E17511

Support Equipment Used in Tested Cable

Cable Type	Core	Length	Shielding/Non-shielding
N/A	N/A	N/A	N/A

1.6 Modification List

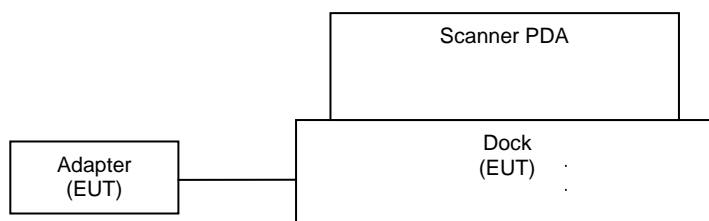
No modification was made by SGS Taiwan Electronics & Communication Laboratory.

1.7 Accessories Cable List

Cable Type	Core	Length	Shielding/Non-shielding
adapter dc output	N/A	1.8m	Non-shielding

1.8 Test Set-Up Configuration

Mode 1



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1.9 Measurement Procedure

Conducted Emission Testing was performed according MP-5 in a shielded room with peripherals placed on a table, 0.8m high over a metal floor. It was located more than required distance away from the shielded room wall.

Radiated Emission Testing was performed according to MP-5 at the semi-anechoic chamber (10m) or 966 semi-anechoic chamber (3m) test site. The EUT was placed on a 0.8m high table along with the peripherals. The turn table was separated 3m from the antenna. Cables were placed in a position to produce maximum emissions as determined by experimentation, and operation mode was selected for production of maximum emission.

The frequencies and amplitudes of maximum emission were measured at varying azimuths, antenna heights and antenna polarities. Maximum emission levels are then reported.

1.10 Standards Applicable for Testing

Tests to be carried out under FCC Part 18, Subpart C

Test Standards	Status
FCC Part 18, Subpart C	Applicable
Deviation from Standard	No deviation

1.11 Summary of Results

Highest Emission					
Standard	Test Type	Result	Phase/Pol.	Frequency(MHz)	Margin(dB)
FCC Part 18 Subpart C	Conducted Emission	PASS	Line	10.7300	-14.80 (AVG)
			Neutral	0.1500	-13.48 (AVG)
	Radiated Emission	PASS	Hor.	0.0138	-30.57 (QP)

Note: The EUT is non-consumer / medical diathermy product. Refer to user manual for detail information.

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2. EMISSION

2.1 Test Results

	Results
Conducted Emission	Pass
Radiated Emission	Pass

2.2 Frequency Range

Conducted Emission : 9 kHz - 30 MHz

Radiated Emission :

Frequency band in which device operates (MHz)	Range of frequency measurements	
	Lowest frequency	Highest frequency
Below 1.705	Lowest frequency generated in the device, but not lower than 9 kHz	30 MHz.
1.705 to 30	Lowest frequency generated in the device, but not lower than 9 kHz	400 MHz.
30 to 500	Lowest frequency generated in the device or 25 MHz, whichever is lower	Tenth harmonic or 1,000 MHz, whichever is higher.
500 to 1,000	Lowest frequency generated in the device or 100 MHz, whichever is lower	Tenth harmonic.
Above 1,000do	Tenth harmonic or highest detectable emission.

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2.3 Limits of Conducted and Radiated Emission

2.3.1 Limits of Conducted Emission for FCC Part 18, Subpart C

According to conduction limits stated in 18.307, when equipment designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies shall not exceed the limits in the following tables. Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal using a 50 μ H/50 ohms line impedance stabilization network (LISN).

(a) All induction cooking ranges and ultrasonic equipment:

Frequency of emission (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.009 – 0.05	110	-
0.05 – 0.15	90 – 80*	-
0.15 – 0.5	66 – 56*	56 – 46*
0.5 - 5	56	46
5 - 30	60	50

*Decreases with the logarithm of the frequency

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(b) All other part 18 consumer devices:

Frequency of emission (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15 – 0.5	66 – 56*	56 – 46*
0.5 - 5	56	46
5 - 30	60	50

*Decreases with the logarithm of the frequency

(c) RF lighting devices:

Frequency MHz	Emissions (μ V)	Emissions (dB μ V)
Non-consumer equipment:		
0.45 - 1.6	1000	60
1.6 - 3.0	3000	69.54
Consumer equipment:		
0.45 – 2.51	250	48
2.51 – 3.0	3000	69.5
3.0 - 30	250	48

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2.3.2 Limits of Radiated Emissions for FCC Part 18, Subpart C

According to 18.305 (b), the field strength levels of emissions which lie outside the bands specified in §18.301, unless otherwise indicated, shall not exceed the following:

Equipment	Operating Frequency	RF Power (watts)	Field Strength Limit (µV/m)	Distance (Meters)	Field Strength Limit @ 3m (dBµV/m)
Any type unless otherwise specified (miscellaneous)	Any ISM frequency	Below 500	25	300	68
		500 or more	$25 \times \text{SQRT}(\text{power}/500)$	¹ 300	$20 \log(25 \times \sqrt{(\text{power}/500)^2 + 40})$
	Any non-ISM frequency	Below 500	15	300	63.5
		500 or more	$15 \times \text{AQRT}(\text{power}/500)$	300	$20 \log(25 \times \sqrt{(\text{power}/500)^2 + 52.7})$
Industrial heaters and RF stabilized arc welders	On or below 5,725 MHz	Any	10	1,600	64.5
	Above 5,725 MHz	Any	(²)	(²)	---
Medical diathermy	Any ISM frequency	Any	25	300	68
	Any non-ISM frequency	Any	15	300	63.5
Ultrasonic	Below 490 kHz	Below 500	$2,400/F(\text{kHz})$	300	$20 \log(2,400/F(\text{kHz})) + 40$
	490 to 1,600 kHz	500 or more	$2,400/F(\text{kHz}) \times \text{SQRT}(\text{power}/500)$	300	$20 \log(2,400/F(\text{kHz})) \times \sqrt{(\text{power}/500)^2 + 60.8}$
		Any	$2,400/F(\text{kHz})$	30	$20 \log(2,400/F(\text{kHz})) + 20$
Above 1,600 kHz	Any	15	30	43.5	
Induction cooking ranges	Below 90 kHz	Any	1,500	⁴ 30	83.5
	On or above 90 kHz	Any	300	⁴ 30	69.5

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- 1 Field strength may not exceed 10 $\mu\text{V/m}$ at 1600 meters. Consumer equipment operating below 1000 MHz is not permitted the increase in field strength otherwise permitted here for power over 500 watts.
- 2 Reduced to the greatest extent possible.
- 3 Field strength may not exceed 10 $\mu\text{V/m}$ at 1600 meters. Consumer equipment is not permitted the increase in field strength otherwise permitted here for over 500 watts.
- 4 Induction cooking ranges manufactured prior to February 1, 1980, shall be subject to the field strength limits for miscellaneous ISM equipment.

According to 18.305 (c), the field strength limits for RF lighting devices shall be the following:

Frequency (MHz)	Distance (Meters)	Field Strength Limit ($\mu\text{V/m}$)	Field Strength Limit @ 3m (dB $\mu\text{V/m}$)
Non-consumer equipment:			
30 - 88	30	30	49.54
88 - 216	30	50	54
216 - 1000	30	70	56.9
Consumer equipment:			
30 - 88	30	10	40
88 - 216	30	15	43.5
216 - 1000	30	20	46.1

According to 18.307(f): For ultrasonic equipment, compliance with the conducted limits shall preclude the need to show compliance with the field strength limits below 30 MHz unless requested by the Commission.

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2.4. Test of Conducted Emission

2.4.1 Test Equipments

SGS Conducted_Emission HWAYA Conducted Room No.A EMC					
EQUIPMENT TYPE	Manufacturer	Model Number	Serial Number	Calibration Date	Calibration Due
EMI Test Receiver	R&S	ESCI 3	101311	2017/6/23	2018/6/22
Coaxial Cables	EMC Instruments Corp	EMCRG58-BM-BM-3000	160812	2016/8/30	2017/8/29
LISN	SCHWARZBECK	NSLK 8127	8127-648	2017/6/18	2018/6/17
Pulse Limiter	Narda S.T.S.	PMM PL01	1110X30602	2016/8/12	2017/8/11
LISN	Schwarzbeck	NSLK 8128	NSLK8128-300	2017/8/4	2018/8/3
Test S/W	Farad	EZ-EMC	Ver. SGS-03A2	N.C.R.	N.C.R.

SGS Taiwan LTD. Electronics & Communication Laboratory
No.2, Keji 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)
Measurement Uncertainty of Conducted Emission
Expanded uncertainty (K=2) of conducted emission is 2.25 dB
Expanded uncertainty (K=2) of ISN conducted emission is 2.57 dB

2.4.2 Operating Environment

Temperature : 25 degree C

Humidity : 64 %RH

Atmospheric Pressure : 992 hpa

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2.4.3 Measurement Data

Model No.:Joya Touch Single Slot Dock Charge Only Mode_1_L

Site : Conduction Room Phase: **L1** Temperature: 25 ℃
 Limit: FCC Part 18 Conduction(QP) Power: AC 120V/60Hz Humidity: 64 %
 Mode: Mode 1
 Note:

Conducted Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.1500	39.70	0.34	40.04	66.00	-25.96	QP	
2		0.1500	36.70	0.34	37.04	56.00	-18.96	AVG	
3		0.1740	35.00	0.34	35.34	64.77	-29.43	QP	
4		0.1740	24.50	0.34	24.84	54.77	-29.93	AVG	
5		0.4340	27.60	0.34	27.94	57.18	-29.24	QP	
6		0.4340	21.80	0.34	22.14	47.18	-25.04	AVG	
7		2.4060	26.40	0.47	26.87	56.00	-29.13	QP	
8		2.4060	21.40	0.47	21.87	46.00	-24.13	AVG	
9		3.6220	31.40	0.55	31.95	56.00	-24.05	QP	
10		3.6220	26.50	0.55	27.05	46.00	-18.95	AVG	
11		10.7300	39.40	0.90	40.30	60.00	-19.70	QP	
12	*	10.7300	34.30	0.90	35.20	50.00	-14.80	AVG	

*:Maximum data x:Over limit !:over margin

File :70205\Data :#2

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Mode_1_N

Site : Conduction Room Phase: **N** Temperature: 25 °C
 Limit: FCC Part 18 Conduction(QP) Power: AC 120V/60Hz Humidity: 64 %
 Mode: Mode 1
 Note:

Conducted Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.1500	44.60	0.42	45.02	66.00	-20.98	QP	
2	*	0.1500	42.10	0.42	42.52	56.00	-13.48	AVG	
3		0.1700	40.60	0.42	41.02	64.96	-23.94	QP	
4		0.1700	33.00	0.42	33.42	54.96	-21.54	AVG	
5		0.2940	33.70	0.41	34.11	60.41	-26.30	QP	
6		0.2940	29.10	0.41	29.51	50.41	-20.90	AVG	
7		0.4780	34.60	0.42	35.02	56.37	-21.35	QP	
8		0.4780	29.60	0.42	30.02	46.37	-16.35	AVG	
9		3.5260	32.00	0.47	32.47	56.00	-23.53	QP	
10		3.5260	27.00	0.47	27.47	46.00	-18.53	AVG	
11		10.4780	37.70	0.67	38.37	60.00	-21.63	QP	
12		10.4780	32.40	0.67	33.07	50.00	-16.93	AVG	

*:Maximum data x:Over limit |:over margin

File :70205\Data :#1

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2.5 Test of Radiated Emission

2.5.1 Test Instruments

SGS Radiated_Below_1GHz HWAYA 966B EMC					
EQUIPMENT TYPE	Manufacturer	Model Number	Serial Number	Calibration Date	Calibration Due
EMI Test Receiver	R&S	ESR 7	101507	2017/5/27	2018/5/26
Biconical Antenna	TESEQ	CBL 6112D	35241	2017/12/20	2018/12/19
Biconical Antenna	SCHWARZBECK	VHBB 9124	9124-560	2017/12/25	2018/12/24
Pre Amplifier	EMC Instruments Corp.	EMC330H	980215	2017/9/30	2018/9/29
Coaxial Cable	EMC Instruments	EMC8D-NM-NM	140919	2017/9/30	2018/9/29
Coaxial Cable	EMC Instruments	EMC8D-NM-NM	140921	2017/9/30	2018/9/29
DC LISN	SCHWARZBECK	NNBM 8124	8124-564	2017/12/6	2018/12/5
DC LISN	SCHWARZBECK	NNBM 8124	8124-565	2017/12/6	2018/12/5
Communication Tester	R&S	CMU200	119988	2018/2/22	2019/2/21
Communication Tester	R&S	CMW500	152303	2018/2/21	2019/2/20
Communication Tester	Anritsu	MT8820C	6201465315	2017/12/10	2018/12/9
Controller	MF	MF-7802	N/A	N.C.R.	N.C.R.
Antenna Master	MF	N/A	N/A	N.C.R.	N.C.R.
Turn Table	MF	N/A	N/A	N.C.R.	N.C.R.
Site NSA	SGS	966 Chamber B	SAC-B	2017/10/8	2018/10/7
Test S/W	Farad	EZ-EMC	6201107337	N.C.R.	N.C.R.
Loop Antenna	COM-POWER	AL-130	121060	2017/5/15	2018/5/14

SGS Taiwan LTD. Electronics & Communication Laboratory
No.2, Keji 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)
Measurement Uncertainty of Radiated Emission
Expanded uncertainty Ulab (k=2) of radiated emission measurement is 4.59 dB. (30-1000MHz)
Theory values uncertainty Ucispr 16-4-2:2011+A1:2014 (K=2) of radiated emission is 5.24 dB. (30MHz ~ 1000MHz)

2.5.2 Operating Environment

Temperature : 23 degree C

Humidity : 68 %RH

Atmospheric Pressure : 1002 hpa

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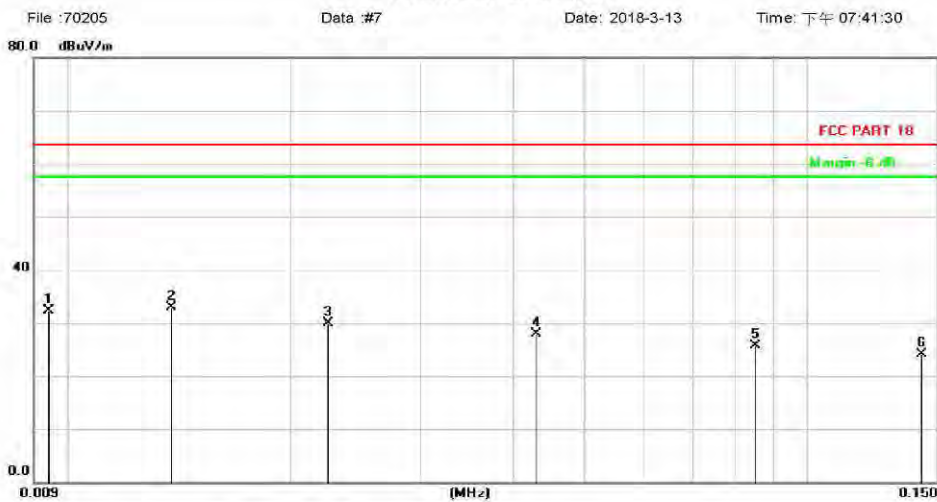
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2.5.3 Measurement Data

Model No.:Joya Touch Single Slot Dock Charge Only Mode_1_H

Site: SGS 966 Chamber B	Polarization: Horizontal	Temperature: 23 °C
Limit: FCC PART 18	Power: AC 120V/60Hz	Humidity: 68 %
Mode: Mode_1	Distance:	
Note:		

Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
1		0.0094	12.79	19.52	32.31	63.50	-31.19	QP	
2 *		0.0138	14.56	18.37	32.93	63.50	-30.57	QP	
3		0.0225	13.83	16.02	29.85	63.50	-33.65	QP	
4		0.0430	15.08	12.78	27.86	63.50	-35.64	QP	
5		0.0851	14.03	11.71	25.74	63.50	-37.76	QP	
6		0.1426	12.72	11.46	24.18	63.50	-39.32	QP	

*:Maximum data x:Over limit l:over margin

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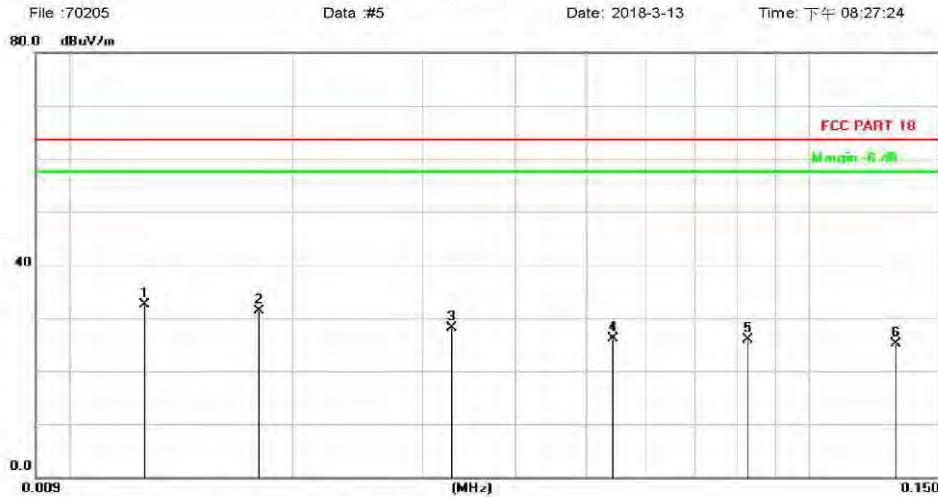
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Mode_1_V

Site: SGS 966 Chamber B
Limit: FCC PART 18
Mode: Mode_1
Note:

Polarization: **Vertical**
Power: AC 120V/60Hz
Distance:
Temperature: 23 °C
Humidity: 68 %

Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
1	*	0.0126	13.84	18.70	32.54	63.50	-30.96	QP	
2		0.0180	14.15	17.24	31.39	63.50	-32.11	QP	
3		0.0328	14.32	13.73	28.05	63.50	-35.45	QP	
4		0.0542	13.96	12.11	26.07	63.50	-37.43	QP	
5		0.0824	14.22	11.75	25.97	63.50	-37.53	QP	
6		0.1314	13.63	11.47	25.10	63.50	-38.40	QP	

*:Maximum data x:Over limit !:over margin

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Page: 1

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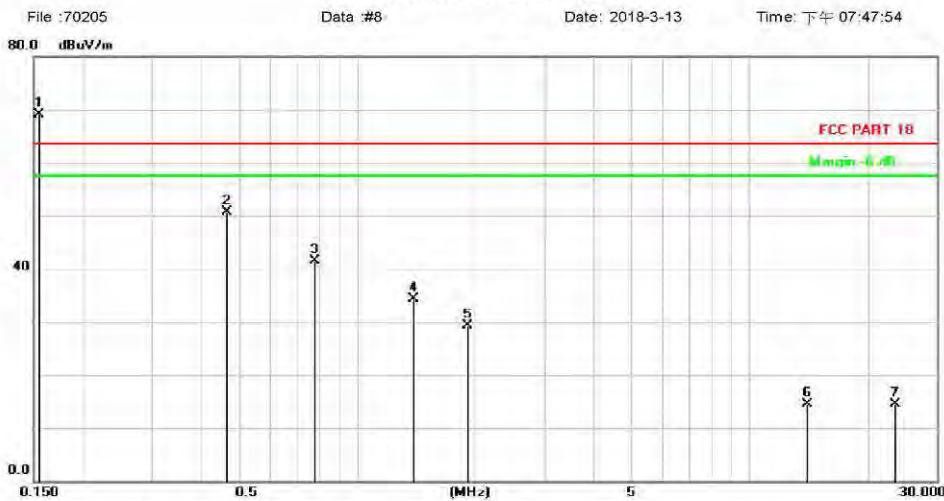
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0.150MHz ~ 30.000MHz
Mode_1_H

Site: SGS 966 Chamber B Polarization: **Horizontal** Temperature: 23 °C
 Limit: FCC PART 18 Power: AC 120V/60Hz Humidity: 68 %
 Mode: Mode_1 Distance:

Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
1	*	0.1548	57.70	11.45	69.15	63.50	5.65	QP	TX
2		0.4661	39.50	11.22	50.72	63.50	-12.78	QP	
3		0.7752	30.24	11.31	41.55	63.50	-21.95	QP	
4		1.3958	23.06	11.26	34.32	63.50	-29.18	QP	
5		1.8980	18.14	11.09	29.23	63.50	-34.27	QP	
6		13.9886	3.07	11.38	14.45	63.50	-49.05	QP	
7		23.3870	3.71	10.72	14.43	63.50	-49.07	QP	

*:Maximum data x:Over limit !:over margin

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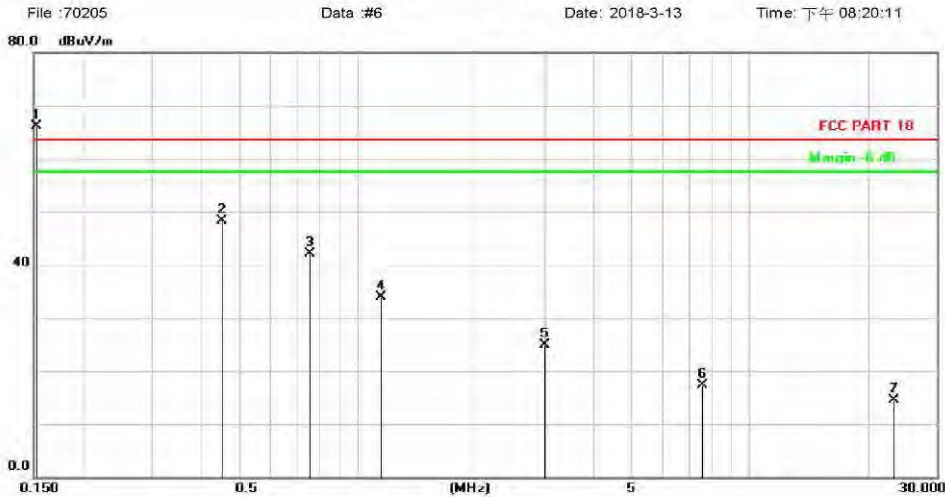
Mode_1_V

Site: SGS 966 Chamber B
Limit: FCC PART 18
Mode: Mode_1
Note:

Polarization: **Vertical**
Power: AC 120V/60Hz
Distance:

Temperature: 23 °C
Humidity: 68 %

Radiated Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
1 *		0.1516	54.73	11.45	66.18	63.50	2.68	QP	TX
2		0.4516	37.05	11.22	48.27	63.50	-15.23	QP	
3		0.7550	30.88	11.30	42.18	63.50	-21.32	QP	
4		1.1473	22.46	11.35	33.81	63.50	-29.69	QP	
5		2.9935	14.13	10.75	24.88	63.50	-38.62	QP	
6		7.5658	6.08	11.20	17.28	63.50	-46.22	QP	
7		23.1404	3.76	10.78	14.54	63.50	-48.96	QP	

*:Maximum data x:Over limit !:over margin

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