

Prüfbericht-Nr.: <i>Test report no.:</i>	CN243EG1 001	Auftrags-Nr.: <i>Order no.:</i>	168488693	Seite 1 von 15 <i>Page 1 of 15</i>
Kunden-Referenz-Nr.: <i>Client reference no.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	2024-06-12	
Auftraggeber: <i>Client:</i>	CE LINK LIMITED 22 Dongkang Road, Dalingshan Town, Dongguan City, Guangdong Province, China			
Prüfgegenstand: <i>Test item:</i>	QI2 2-IN-1 WIRELESS CHARGER			
Bezeichnung / Typ-Nr.: <i>Identification / Type no.:</i>	MPP20-1TCNB-J, CQIP20-STA, 393239000 (Trademark: CE-LINK)			
Auftrags-Inhalt: <i>Order content:</i>	Test Report			
Prüfgrundlage: <i>Test specification:</i>	CFR47 FCC Part 15: Subpart C Section 15.207 CFR47 FCC Part 15: Subpart C Section 15.209			
Wareneingangsdatum: <i>Date of sample receipt:</i>	2024-05-16	Please refer to Photo Document		
Prüfmuster-Nr.: <i>Test sample no.:</i>	EST-240625019-001			
Prüfzeitraum: <i>Testing period:</i>	2024-05-29 - 2024-06-14			
Ort der Prüfung: <i>Place of testing:</i>	EST Technology Co., Ltd.			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von: <i>tested by:</i>	 Hardy Suo		genehmigt von: <i>authorized by:</i>	 Lin Lin
Datum: <i>Date:</i>	2024-07-10		Ausstellungsdatum: <i>Issue date:</i>	2024-07-10
Stellung / Position:	Sachverständige(r)/Expert		Stellung / Position:	Sachverständige(r)/Expert
Sonstiges / <i>Other:</i>	FCC ID: A4X-MPP20-1TCNB-J			
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>	Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>			
* Legende:	P(ass) = entspricht o.g. Prüfgrundlage(n)	F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
* Legend:	P(ass) = passed a.m. test specification(s)	F(ail) = failed a.m. test specification(s)	N/A = not applicable	N/T = not tested
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the above mentioned test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

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Anmerkungen
Remarks

1	Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben. Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden. <i>The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system. Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.</i>
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3	Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben. Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt. <i>Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report.</i> <i>Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.</i>
4	Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnissen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezüglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019. <i>The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.</i>

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Test Summary

5.1.1 ANTENNA REQUIREMENT

RESULT: Pass

5.1.2 RADIATED SPURIOUS EMISSION

RESULT: Pass

5.1.3 CONDUCTED EMISSION ON AC MAINS

RESULT: Pass

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1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Test Results of FCC Part 15C.

Appendix B: Photographs of the Test Set-up.

2 Test Sites

2.1 Test Facilities

EST Technology Co., Ltd.

Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China

A2LA Registration No.: 4366.01

FCC Accreditation Designation No.: CN1215

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

For radiated emission test (Below 30MHz)

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESR7	EST-E047	June 11,24	1 Year
Active Loop Antenna	SCHWARZBECK	FMZB1519B	EST-E054	June 11,24	1 Year
Test Software	Audix	e3-6.111221a	N/A	N/A	N/A

For radiated emission test (30MHz-1000MHz)

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESR7	EST-E047	June 11,24	1 Year
Bilog Antenna	Teseq	CBL 6111D	EST-E034	June 11,24	1 Year
Test Software	Audix	e3-6.111221a	N/A	N/A	N/A

For conducted emission test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESCI3	EST-E035	Jun. 11,24	1 Year
Artificial Mains Network	Rohde & Schwarz	ENV216	EST-E002	Jun. 11,24	1 Year
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	EST-E003	Jun. 11,24	1 Year
Test Software	Audix	e3-6.111221a	N/A	N/A	N/A

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table

Table 2: Measurement Uncertainty

Test Item	Uncertainty
Uncertainty for Conduction emission test	±3.44dB
Uncertainty for spurious emissions test	±4.60 dB(Polarize: H)
	±4.68 dB(Polarize: V)
Uncertainty for Bandwidth test	7×10^{-8}
Uncertainty for EMF	5.03 dB

Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) Co., Ltd. file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The EST Technology Co., Ltd. Test facility located at Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The EUT is a QI2 2-IN-1 WIRELESS CHARGER, which supports wireless charging (WPT) function.

For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 3: Technical Specification of EUT

General Information of EUT	Value
Kind of Equipment:	QI2 2-IN-1 WIRELESS CHARGER
Type Designation:	MPP20-1TCNB-J, CQIP20-STA, 393239000
Trademark:	CE-LINK
FCC ID:	A4X-MPP20-1TCNB-J
Operating Voltage:	USB operated (DC 5V/3A or DC 9V/3A)
Test Voltage:	AC 120V, 60Hz
Operating Temperature Range:	0 °C ~ +35 °C
Technical Specification of WPT	
Frequency Range:	110.5 kHz to 205 kHz & 360 kHz
Operating Frequency:	127.5 kHz, 145 kHz, 360 kHz
Type of Modulation:	FSK
Antenna Type:	Inductive Loop Coil Antenna
Antenna Gain:	0 dBi (Provided by the Client)
Wireless output power:	Output1: 5W Output2: 5W / 15W Total: 20W
Remark: models MPP20-1TCNB-J, CQIP20-STA and 393239000 have the same technical construction including circuit diagram, PCB Layout, components and component layout, all electrical construction and mechanical construction, except the different model numbers.	

3.3 Independent Operation Modes

The basic operation modes are:

- A. On, Wireless Charging
- B. Standby mode

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- | | |
|------------------------------|-------------------------|
| - Application Form | - User Manual |
| - Block Diagram | - Schematics |
| - ID Label and Location Info | - Operation Description |

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

Radio Spectrum: The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5 & 6. All testing were performed according to the procedures in ANSI C63.10: 2013.

According to clause 3.1, all tests were performed on model MPP20-1TCNB-J in this report.

4.3 Special Accessories and Auxiliary Equipment

Table 4: List of Accessories and Auxiliary Equipment

Description	Manufacturer	Model	Rating
iphone 14 Pro Max	Apple	MQ883CH/A	N/A
Adapter	Apple	A1882	Input: 100-240V.0.75A Output: 20V/1.5A, 15V/2A, 9V/3A, 5V/3A
Wireless Load	YBZ	EST-001	Output: BPP(5W), IPHONE(7.5W), Samsung(10W), EPP(15W)

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 30MHz)

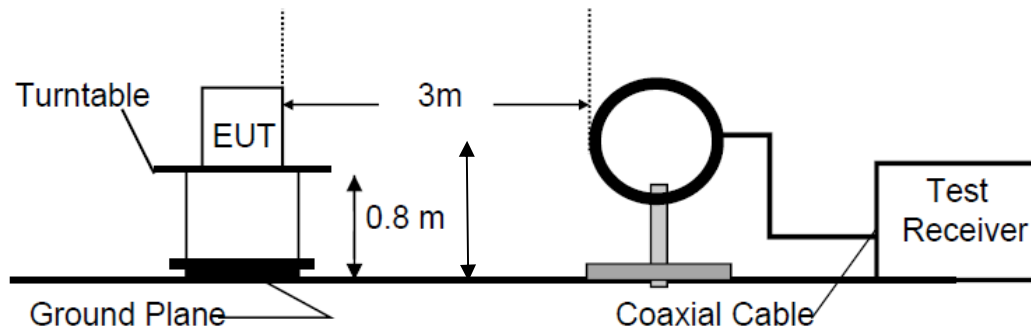


Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

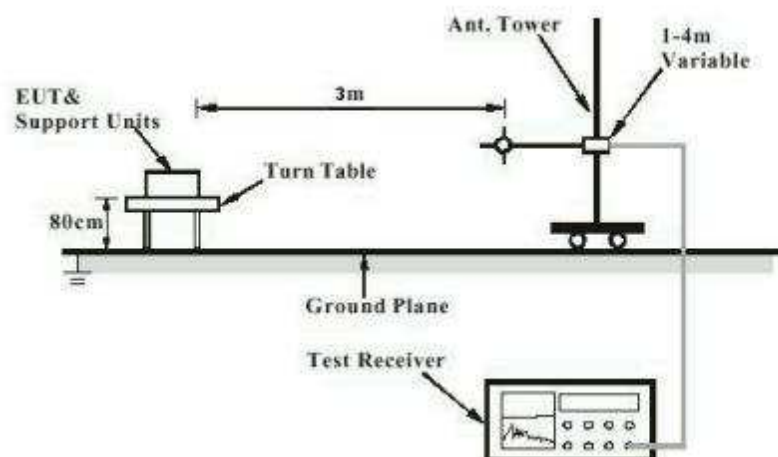
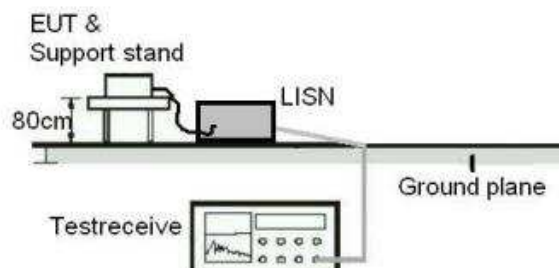


Diagram of Measurement Configuration for Mains Conduction Measurement



5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT:

Pass

Test Specification

Test standard : Part 15.203
the use of antennas with directional gains that do not exceed 6 dBi

According to the manufacturer declared, the EUT has one internal antenna, and the antenna is permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

5.1.2 Radiated Spurious Emission

RESULT: Pass

Test Specification

- Test standard : FCC Part 15.209 & 15.205
- Basic standard : ANSI C63.10: 2013
- Limits : Refer to 15.209(a)
- Kind of test site : 3m Semi-anechoic Chamber

Test Setup

- Date of testing : 2024-05-29 to 2024-06-14
- Input voltage : AC 120V, 60Hz
- Operation mode : A, B
- Ambient temperature : Refer to test result
- Relative humidity : Refer to test result
- Atmospheric pressure : Refer to test result

For the measurement records, refer to the appendix A.

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5.1.3 Conducted Emission on AC Mains

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15.207(a)
Basic standard	: ANSI C63.10: 2013
Frequency range	: 0.15 – 30MHz
Limits	: FCC Part 15.207(a)
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2024-06-14
Input voltage	: AC 120V, 60Hz
Operation mode	: A
Earthing	: Not connected
Ambient temperature	: 25.1 °C
Relative humidity	: 59 %
Atmospheric pressure	: 101.5 kPa

For the measurement records, refer to the appendix A.

6 Photographs of the Test Set-Up

For photographs of the test set-up, refer to the appendix B.

7 List of Tables

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Appendix A: Test Results of FCC Part 15C

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<i>Wireless Charging</i>	2
<i>Standby mode</i>	12
APPENDIX A.2: TEST RESULTS OF CONDUCTED EMISSION ON AC MAINS	16

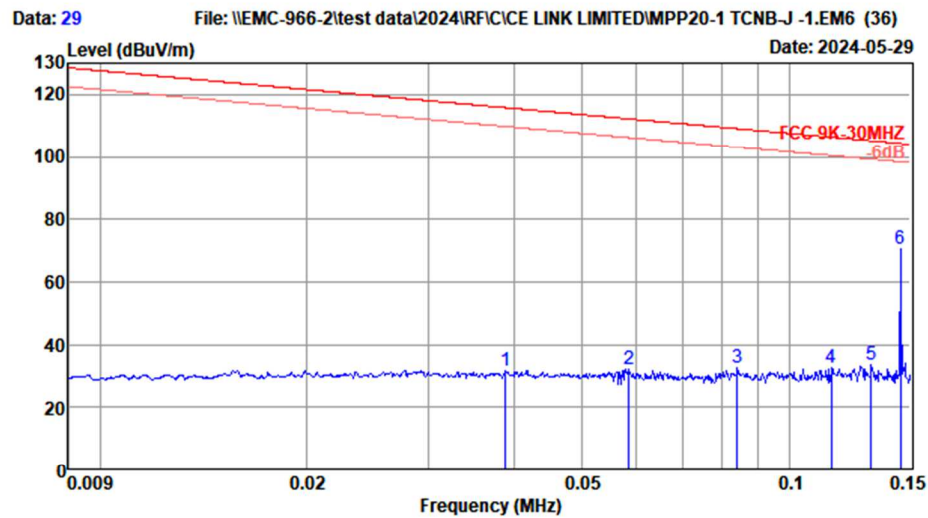
Appendix A.1: Test Results of Radiated Spurious Emission

Wireless Charging

Note: The highest waveform in the figure is Fundamental.

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Site no. : 2# 966 chamber Data no. : 29
Dis. / Ant. : 3m FMZB 1519B Ant. pol. : COAXIAL
Limit : FCC 9K-30MHz
Env. / Ins. : Temp:20.6°C;Humi:48%;Press:101.52kPa
Engineer : LST
EUT : QI2 2-IN-1 WIRELESS CHARGER
Power : DC 9V From Adapter Input AC 120V/60Hz
M/N : MPP20-1 TCNB-J
Test Mode : Wireless Charging
5W+5W

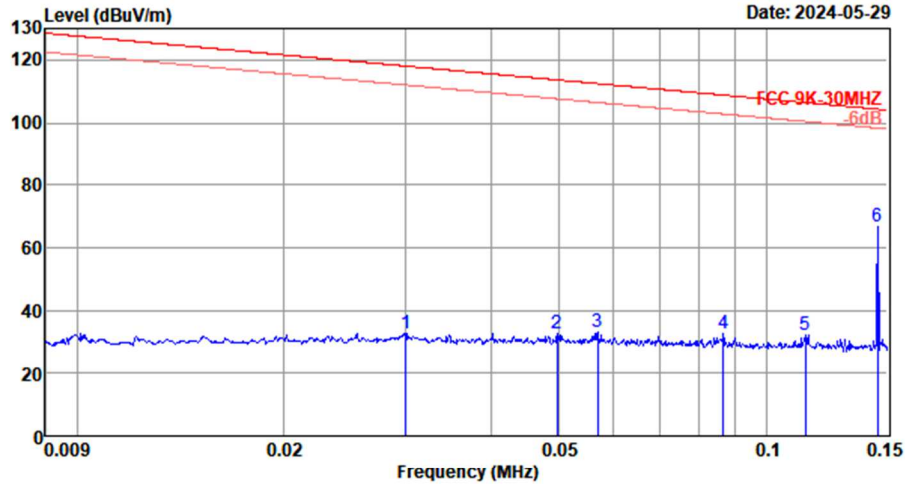
	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.03876	20.60	0.10	11.06	31.76	115.84	84.08	Peak
2	0.05861	20.90	0.10	11.17	32.17	112.24	80.07	Peak
3	0.08402	20.10	0.10	12.45	32.65	109.12	76.47	Peak
4	0.11514	19.80	0.10	12.68	32.58	106.38	73.80	Peak
5	0.13142	19.80	0.10	13.50	33.40	105.23	71.83	Peak
6	0.14500	19.90	0.10	50.69	70.69	104.38	33.69	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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Data: 32 File: \\EMC-966-2\test data\2024\RFIC\ICE LINK LIMITED\MPP20-1 TCNB-J -1.EM6 (36)
Date: 2024-05-29



Site no. : 2# 966 chamber Data no. : 32
Dis. / Ant. : 3m FMZB 1519B Ant. pol. : COPLANAR
Limit : FCC 9K-30MHZ
Env. / Ins. : Temp:20.6°C;Humi:48%;Press:101.52kPa
Engineer : LST
EUT : QI2 2-IN-1 WIRELESS CHARGER
Power : DC 9V From Adapter Input AC 120V/60Hz
M/N : MPP20-1 TCNB-J
Test Mode : Wireless Charging
5W+5W

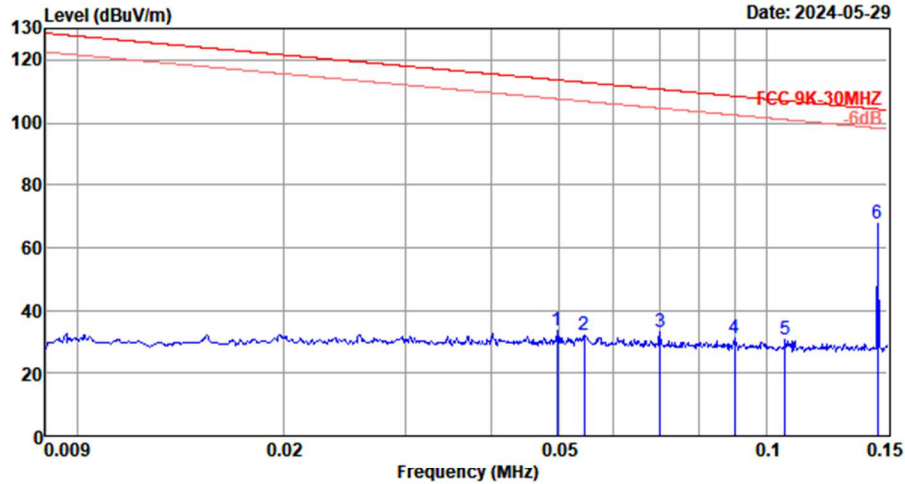
	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.03001	20.60	0.10	11.95	32.65	118.06	85.41	Peak
2	0.04979	20.60	0.10	11.98	32.68	113.66	80.98	Peak
3	0.05699	20.90	0.10	11.92	32.92	112.49	79.57	Peak
4	0.08666	20.10	0.10	12.43	32.63	108.85	76.22	Peak
5	0.11385	20.10	0.10	11.89	32.09	106.48	74.39	Peak
6	0.14502	19.90	0.10	46.86	66.86	104.38	37.52	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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Data: 33 File: \\EMC-966-2\test data\2024\RFIC\ICE LINK LIMITED\MPP20-1 TCNB-J -1.EM6 (36)
Date: 2024-05-29



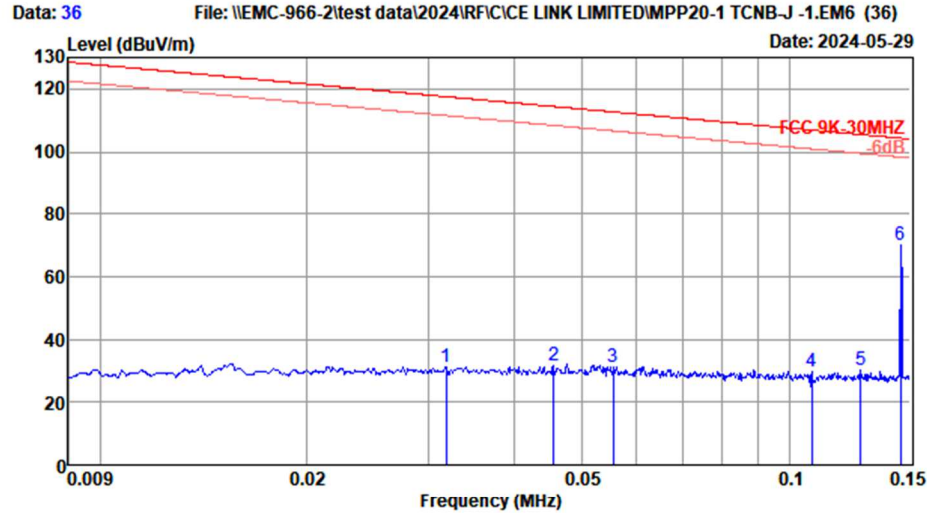
Site no. : 2# 966 chamber Data no. : 33
Dis. / Ant. : 3m FMZB 1519B Ant. pol. : COPLANAR
Limit : FCC 9K-30MHZ
Env. / Ins. : Temp:20.6°C;Humi:48%;Press:101.52kPa
Engineer : LST
EUT : QI2 2-IN-1 WIRELESS CHARGER
Power : DC 9V From Adapter Input AC 120V/60Hz
M/N : MPP20-1 TCNB-J
Test Mode : Wireless Charging
15W+5W

	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.04979	20.60	0.10	12.74	33.44	113.66	80.22	Peak
2	0.05448	20.90	0.10	10.96	31.96	112.88	80.92	Peak
3	0.07018	20.90	0.10	11.91	32.91	110.68	77.77	Peak
4	0.08989	20.10	0.10	11.22	31.42	108.53	77.11	Peak
5	0.10642	20.10	0.10	10.31	30.51	107.06	76.55	Peak
6	0.14502	19.90	0.10	47.85	67.85	104.38	36.53	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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Site no. : 2# 966 chamber Data no. : 36
Dis. / Ant. : 3m FMZB 1519B Ant. pol. : COAXIAL
Limit : FCC 9K-30MHZ
Env. / Ins. : Temp:20.6°C;Humi:48%;Press:101.52kPa
Engineer : LST
EUT : QI2 2-IN-1 WIRELESS CHARGER
Power : DC 9V From Adapter Input AC 120V/60Hz
M/N : MPP20-1 TCNB-J
Test Mode : Wireless Charging
15W+5W

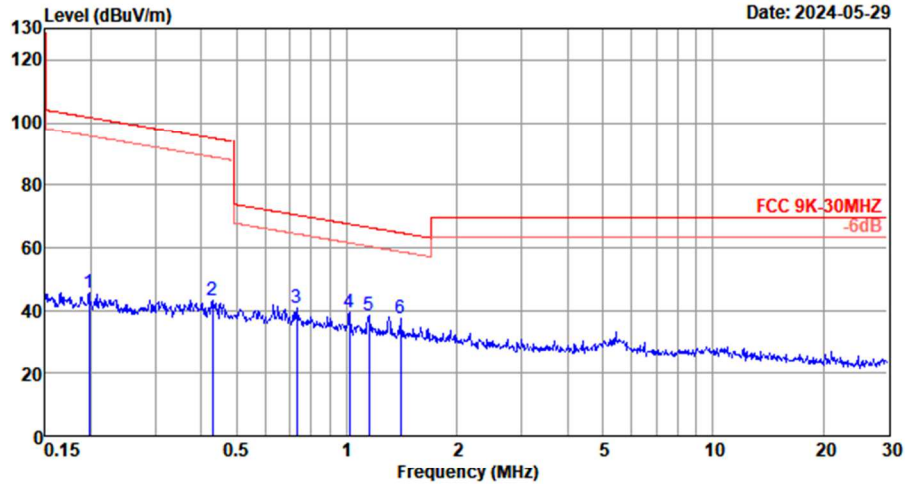
	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.03183	20.60	0.10	10.58	31.28	117.55	86.27	Peak
2	0.04550	20.60	0.10	11.04	31.74	114.44	82.70	Peak
3	0.05556	20.90	0.10	10.16	31.16	112.71	81.55	Peak
4	0.10793	20.10	0.10	9.54	29.74	106.94	77.20	Peak
5	0.12706	19.80	0.10	10.27	30.17	105.52	75.35	Peak
6	0.14502	19.90	0.10	50.27	70.27	104.38	34.11	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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Data: 30 File: \\EMC-966-2\test data\2024\RFIC\ICE LINK LIMITED\MPP20-1 TCNB-J -1.EM6 (36) Date: 2024-05-29



Site no. : 2# 966 chamber Data no. : 30
Dis. / Ant. : 3m FMZB 1519B Ant. pol. : COAXIAL
Limit : FCC 9K-30MHZ
Env. / Ins. : Temp:20.6°C;Humi:48%;Press:101.52kPa
Engineer : LST
EUT : QI2 2-IN-1 WIRELESS CHARGER
Power : DC 9V From Adapter Input AC 120V/60Hz
M/N : MPP20-1 TCNB-J
Test Mode : Wireless Charging
5W+5W

	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.19758	19.99	0.10	25.45	45.54	101.69	56.15	Peak
2	0.43052	20.72	0.10	22.34	43.16	94.92	51.76	Peak
3	0.73131	20.76	0.10	20.05	40.91	70.32	29.41	Peak
4	1.01569	20.60	0.10	18.63	39.33	67.47	28.14	Peak
5	1.14733	20.60	0.10	17.88	38.58	66.41	27.83	Peak
6	1.40322	20.60	0.10	16.96	37.66	64.66	27.00	Peak

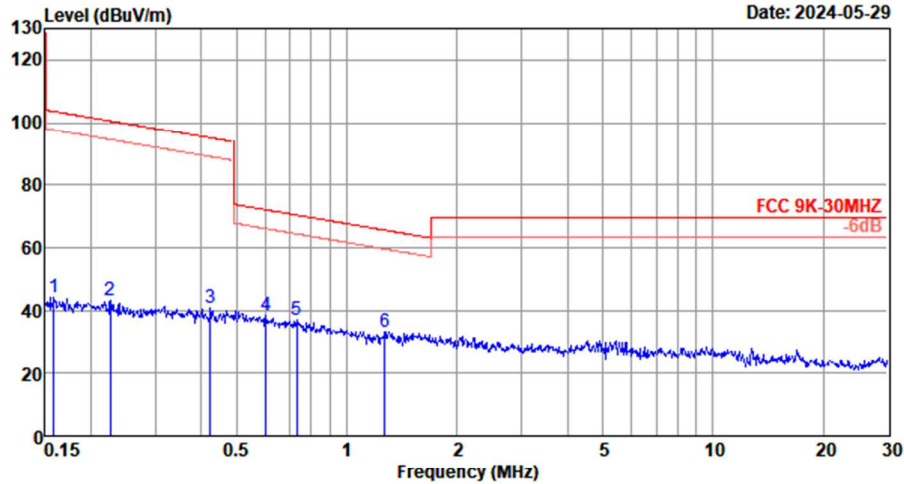
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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Data: 31 File: \\EMC-966-2\test data\2024\RFIC\ICE LINK LIMITED\MPP20-1 TCNB-J -1.EM6 (36)

Date: 2024-05-29



Site no. : 2# 966 chamber Data no. : 31
Dis. / Ant. : 3m FMZB 1519B Ant. pol. : COPLANAR
Limit : FCC 9K-30MHZ
Env. / Ins. : Temp:20.6°C;Humi:48%;Press:101.52kPa
Engineer : LST
EUT : QI2 2-IN-1 WIRELESS CHARGER
Power : DC 9V From Adapter Input AC 120V/60Hz
M/N : MPP20-1 TCNB-J
Test Mode : Wireless Charging
5W+5W

	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.15816	19.90	0.10	23.93	43.93	103.62	59.69	Peak
2	0.22556	20.08	0.10	23.05	43.23	100.54	57.31	Peak
3	0.42373	20.72	0.10	19.87	40.69	95.06	54.37	Peak
4	0.60112	20.83	0.10	17.38	38.31	72.02	33.71	Peak
5	0.73131	20.76	0.10	16.26	37.12	70.32	33.20	Peak
6	1.26884	20.60	0.10	12.52	33.22	65.54	32.32	Peak

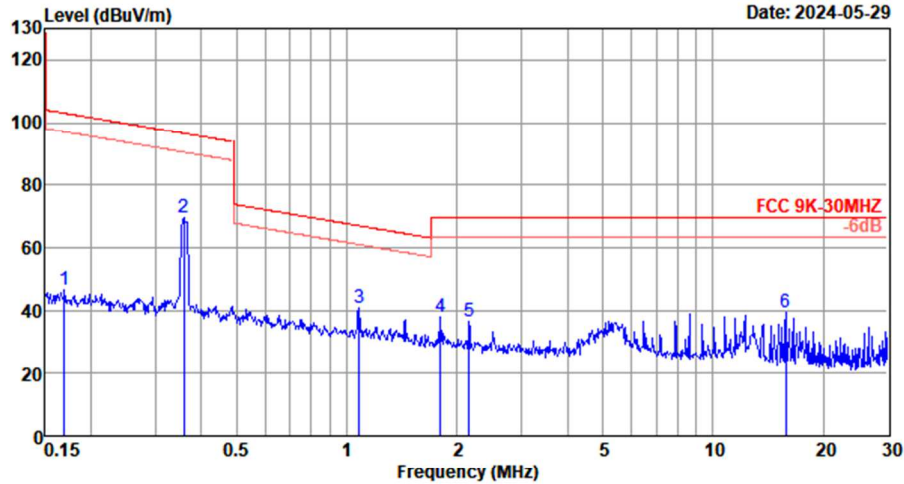
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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Data: 34 File: \\EMC-966-2\test data\2024\RFIC\ICE LINK LIMITED\MPP20-1 TCNB-J -1.EM6 (36)

Date: 2024-05-29



Site no. : 2# 966 chamber Data no. : 34
Dis. / Ant. : 3m FMZB 1519B Ant. pol. : COPLANAR
Limit : FCC 9K-30MHZ
Env. / Ins. : Temp:20.6°C;Humi:48%;Press:101.52kPa
Engineer : LST
EUT : QI2 2-IN-1 WIRELESS CHARGER
Power : DC 9V From Adapter Input AC 120V/60Hz
M/N : MPP20-1 TCNB-J
Test Mode : Wireless Charging
15W+5W

	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.16944	19.90	0.10	26.76	46.76	103.02	56.26	Peak
2	0.35955	20.54	0.10	48.96	69.60	96.49	26.89	Peak
3	1.08237	20.60	0.10	19.94	40.64	66.92	26.28	Peak
4	1.80001	20.60	0.11	17.01	37.72	69.54	31.82	Peak
5	2.15531	20.60	0.11	15.95	36.66	69.54	32.88	Peak
6	15.80144	19.42	0.15	19.87	39.44	69.54	30.10	Peak

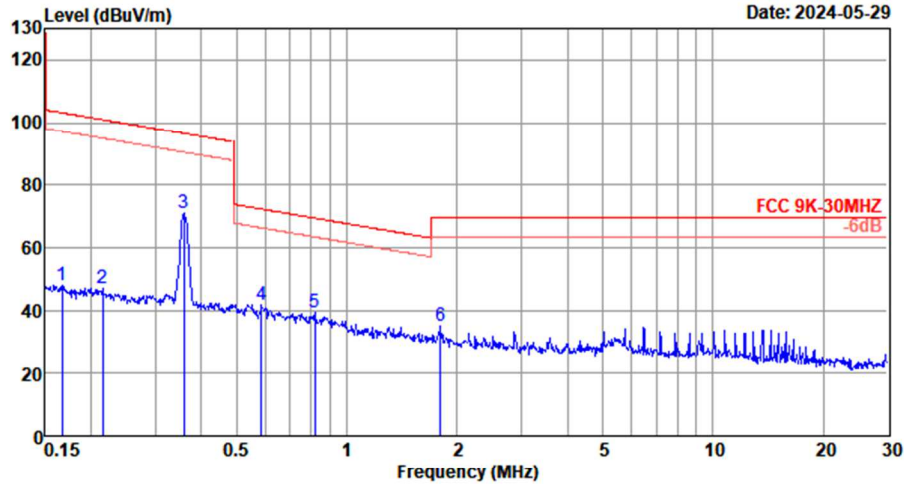
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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Data: 35 File: \\EMC-966-2\test data\2024\RFIC\ICE LINK LIMITED\MPP20-1 TCNB-J -1.EM6 (36)

Date: 2024-05-29



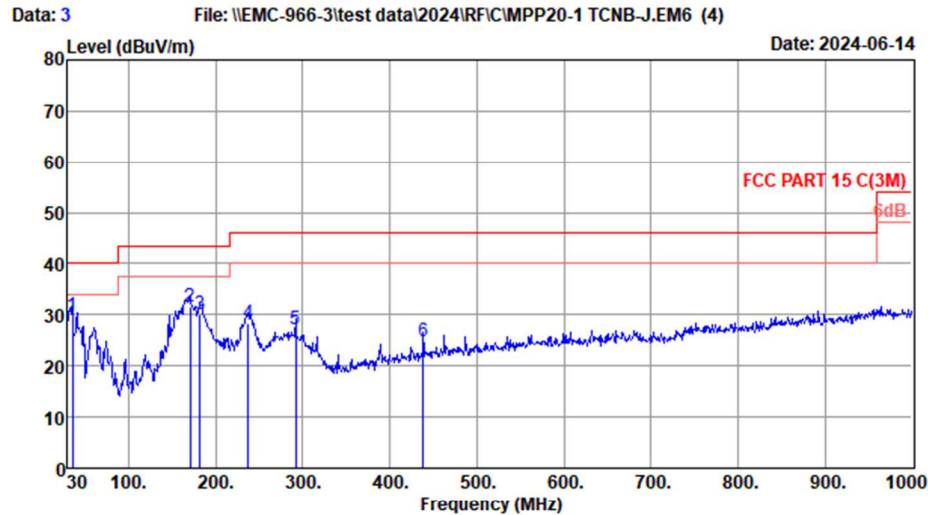
Site no. : 2# 966 chamber Data no. : 35
Dis. / Ant. : 3m FM2B 1519B Ant. pol. : COAXIAL
Limit : FCC 9K-30MHZ
Env. / Ins. : Temp:20.6°C;Humi:48%;Press:101.52kPa
Engineer : LST
EUT : QI2 2-IN-1 WIRELESS CHARGER
Power : DC 9V From Adapter Input AC 120V/60Hz
M/N : MPP20-1 TCNB-J
Test Mode : Wireless Charging
15W+5W

	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.16677	19.90	0.10	28.07	48.07	103.16	55.09	Peak
2	0.21506	20.08	0.10	26.87	47.05	100.95	53.90	Peak
3	0.35955	20.54	0.10	50.12	70.76	96.49	25.73	Peak
4	0.58540	20.85	0.10	20.73	41.68	72.25	30.57	Peak
5	0.81737	20.71	0.10	18.36	39.17	69.36	30.19	Peak
6	1.80001	20.60	0.11	14.11	34.82	69.54	34.72	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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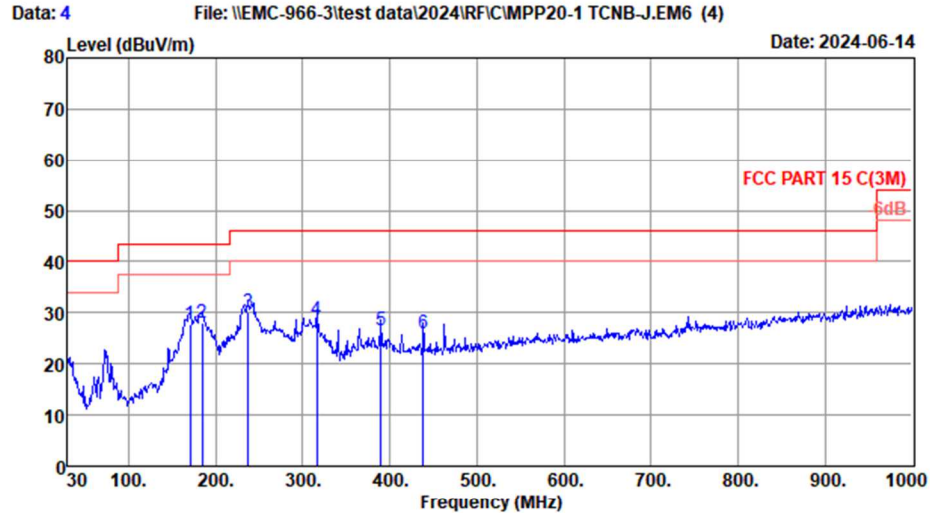
Site no. : 3# 966 Chamber Data no. : 3
Dis. / Ant. : 3m 54681 Ant. pol. : VERTICAL
Limit : FCC PART 15 C(3M)
Env. / Ins. : Temp:23°C;Humi:54%;Prwss:101.1kPa
Engineer : Luke
EUT : QI2 2-IN-1 WIRELESS CHARGER
Power : DC 9V From Adapter Input AC 120V/60Hz
M/N : MPP20-1TCNB-J
Test Mode : Charging
15W+5W

	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	35.82	16.50	0.98	12.39	29.87	40.00	10.13	QP
2	170.65	10.52	2.03	19.08	31.63	43.50	11.87	QP
3	182.29	9.64	2.12	18.29	30.05	43.50	13.45	QP
4	237.58	11.86	2.55	14.02	28.43	46.00	17.57	QP
5	291.90	13.48	2.98	10.65	27.11	46.00	18.89	QP
6	438.37	16.82	3.64	4.23	24.69	46.00	21.31	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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Site no. : 3# 966 Chamber Data no. : 4
Dis. / Ant. : 3m 54681 Ant. pol. : HORIZONTAL
Limit : FCC PART 15 C(3M)
Env. / Ins. : Temp:23°C;Humi:54%;Prwss:101.1kPa
Engineer : Luke
EUT : QI2 2-IN-1 WIRELESS CHARGER
Power : DC 9V From Adapter Input AC 120V/60Hz
M/N : MPP20-1TCNB-J
Test Mode : Charging
15W+5W

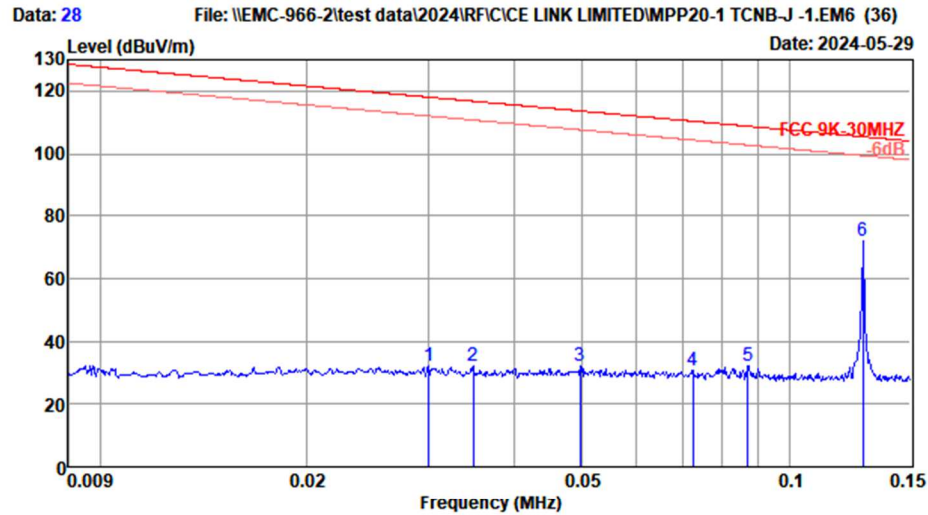
	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	170.65	10.52	2.03	15.27	27.82	43.50	15.68	QP
2	184.23	9.48	2.13	16.57	28.18	43.50	15.32	QP
3	237.58	11.86	2.55	15.83	30.24	46.00	15.76	QP
4	316.15	13.92	3.11	11.55	28.58	46.00	17.42	QP
5	389.87	15.80	3.43	7.41	26.64	46.00	19.36	QP
6	438.37	16.82	3.64	5.64	26.10	46.00	19.90	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

Standby mode

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Site no. : 2# 966 chamber Data no. : 28
Dis. / Ant. : 3m FMZB 1519B Ant. pol. : COPLANAR
Limit : FCC 9K-30MHZ
Env. / Ins. : Temp:20.6°C;Humi:48%;Press:101.52kPa
Engineer : LST
EUT : QI2 2-IN-1 WIRELESS CHARGER
Power : DC 9V From Adapter Input AC 120V/60Hz
M/N : MPP20-1 TCNB-J
Test Mode : Standby Mode

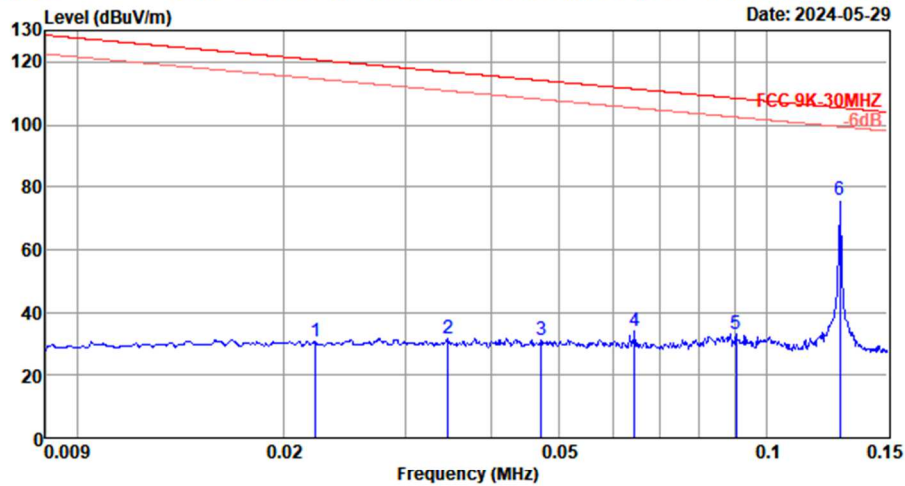
	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.03001	20.60	0.10	11.56	32.26	118.06	85.80	Peak
2	0.03483	20.60	0.10	11.23	31.93	116.77	84.84	Peak
3	0.04979	20.60	0.10	11.35	32.05	113.66	81.61	Peak
4	0.07259	20.90	0.10	9.54	30.54	110.39	79.85	Peak
5	0.08715	20.10	0.10	12.05	32.25	108.80	76.55	Peak
6	0.12778	19.80	0.10	51.93	71.83	105.48	33.65	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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Data: 25 File: \\EMC-966-2\test data\2024\RFIC\ICE LINK LIMITED\MPP20-1 TCNB-J -1.EM6 (36) Date: 2024-05-29



Site no. : 2# 966 chamber Data no. : 25
Dis. / Ant. : 3m FMZB 1519B Ant. pol. : COAXIAL
Limit : FCC 9K-30MHZ
Env. / Ins. : Temp:20.6°C; Humi:48%; Press:101.52kPa
Engineer : LST
EUT : QI2 2-IN-1 WIRELESS CHARGER
Power : DC 9V From Adapter Input AC 120V/60Hz
M/N : MPP20-1 TCNB-J
Test Mode : Standby Mode

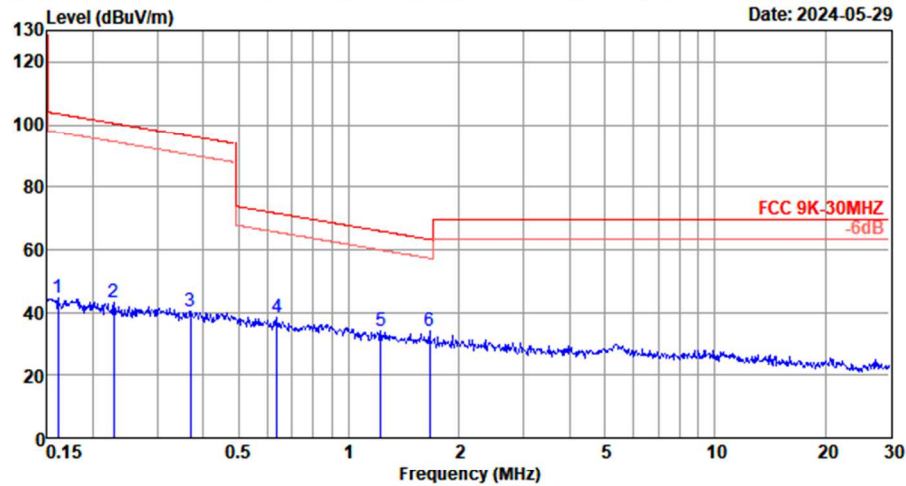
	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.02221	20.10	0.10	10.65	30.85	120.68	89.83	Peak
2	0.03454	20.60	0.10	10.79	31.49	116.84	85.35	Peak
3	0.04720	20.60	0.10	10.39	31.09	114.13	83.04	Peak
4	0.06450	20.90	0.10	13.07	34.07	111.41	77.34	Peak
5	0.09040	20.10	0.10	13.00	33.20	108.48	75.28	Peak
6	0.12780	19.80	0.10	56.02	75.92	105.47	29.55	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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Data: 26 File: \\EMC-966-2\test data\2024\RFIC\ICE LINK LIMITED\MPP20-1 TCNB-J -1.EM6 (36) Date: 2024-05-29



Site no. : 2# 966 chamber Data no. : 26
Dis. / Ant. : 3m FMZB 1519B Ant. pol. : COAXIAL
Limit : FCC 9K-30MHZ
Env. / Ins. : Temp:20.6°C;Humi:48%;Press:101.52kPa
Engineer : LST
EUT : QI2 2-IN-1 WIRELESS CHARGER
Power : DC 9V From Adapter Input AC 120V/60Hz
M/N : MPP20-1 TCNB-J
Test Mode : Standby Mode

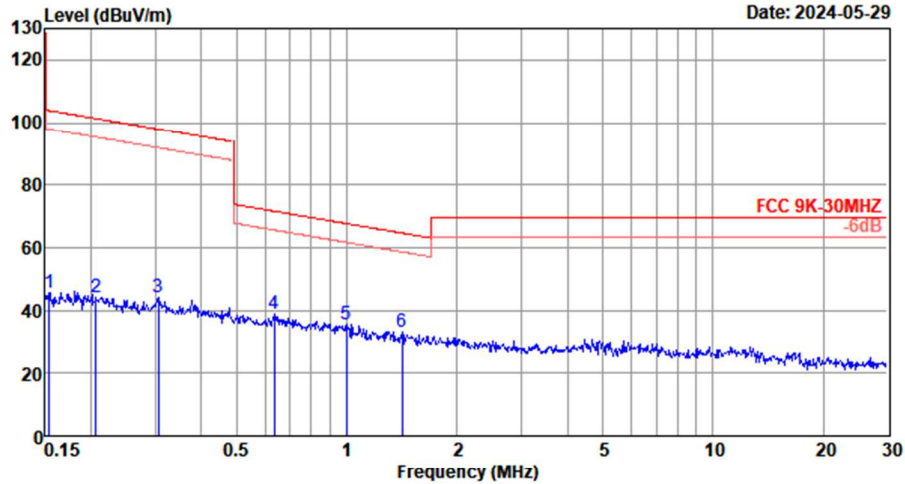
	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.16070	19.90	0.10	24.70	44.70	103.48	58.78	Peak
2	0.22797	20.08	0.10	22.92	43.10	100.45	57.35	Peak
3	0.36920	20.54	0.10	19.73	40.37	96.26	55.89	Peak
4	0.63720	20.81	0.10	17.67	38.58	71.52	32.94	Peak
5	1.22264	20.60	0.10	13.35	34.05	65.86	31.81	Peak
6	1.66249	20.60	0.11	13.27	33.98	63.19	29.21	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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Data: 27 File: \\EMC-966-2\test data\2024\RFIC\ICE LINK LIMITED\MPP20-1 TCNB-J -1.EM6 (36) Date: 2024-05-29



Site no. : 2# 966 chamber Data no. : 27
Dis. / Ant. : 3m FMZB 1519B Ant. pol. : COPLANAR
Limit : FCC 9K-30MHZ
Env. / Ins. : Temp:20.6°C;Humi:48%;Press:101.52kPa
Engineer : LST
EUT : QI2 2-IN-1 WIRELESS CHARGER
Power : DC 9V From Adapter Input AC 120V/60Hz
M/N : MPP20-1 TCNB-J
Test Mode : Standby Mode

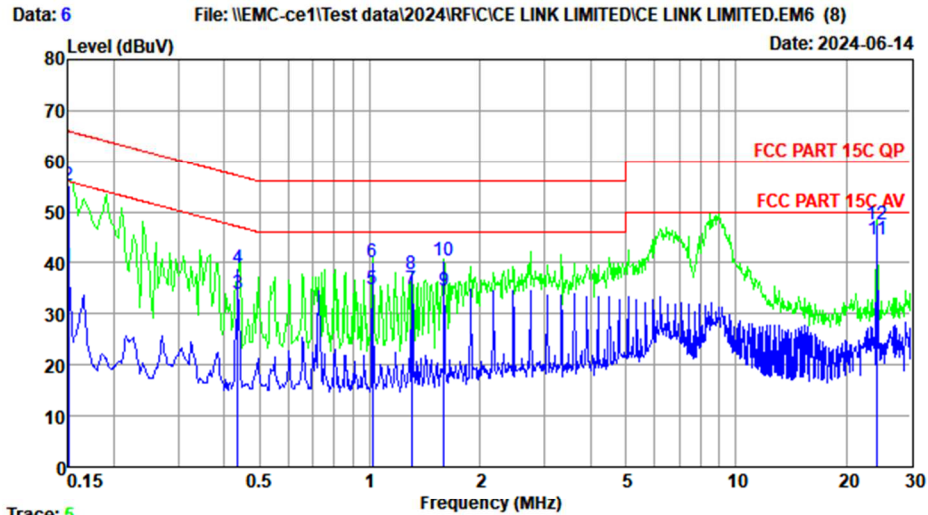
	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.15403	19.90	0.10	25.56	45.56	103.85	58.29	Peak
2	0.20614	20.08	0.10	23.99	44.17	101.32	57.15	Peak
3	0.30509	20.35	0.10	23.64	44.09	97.92	53.83	Peak
4	0.63383	20.81	0.10	18.18	39.09	71.56	32.47	Peak
5	0.99968	20.60	0.10	14.94	35.64	67.61	31.97	Peak
6	1.41817	20.60	0.10	12.58	33.28	64.57	31.29	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

Appendix A.2: Test Results of Conducted Emission on AC Mains

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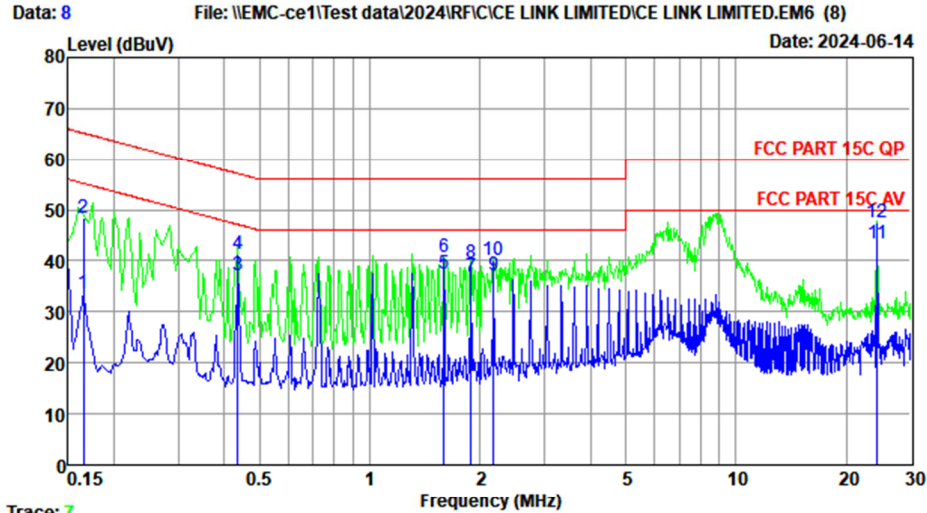
Trace: 5
Site no : 1#CE Shield Room Data no. : 6
Env. / Ins. : Temp:25.1°C;Humi:59%;Press:101.50kPa LINE Phase : LINE
Limit : FCC PART 15C QP
Engineer : Micheal
EUT : QI2 2-IN-1 WIRELESS CHARGER
Power : DC 9V From Adapter Input AC 120V/60Hz
M/N : MPP20-1TCNB-J
Test Mode : Charging

	Freq. (MHz)	LISN Factor (db)	Cable Loss (db)	Reading dBuV	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.150	10.40	9.90	18.83	39.13	56.00	16.87	Average
2	0.150	10.40	9.90	34.87	55.17	66.00	10.83	QP
3	0.435	10.20	9.91	13.82	33.93	47.15	13.22	Average
4	0.435	10.20	9.91	18.88	38.99	57.15	18.16	QP
5	1.016	10.48	9.92	14.57	34.97	46.00	11.03	Average
6	1.016	10.48	9.92	19.66	40.06	56.00	15.94	QP
7	1.303	10.48	9.92	14.50	34.90	46.00	11.10	Average
8	1.303	10.48	9.92	17.37	37.77	56.00	18.23	QP
9	1.593	10.47	9.93	14.24	34.64	46.00	11.36	Average
10	1.593	10.47	9.93	20.11	40.51	56.00	15.49	QP
11	24.271	10.62	10.10	23.75	44.47	50.00	5.53	Average
12	24.271	10.62	10.10	26.71	47.43	60.00	12.57	QP

Remarks: 1. Emission Level= LISN Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. If the average limit is met when using a quasi-peak detector,
the EUT shall be deemed to meet both limits and measurement
with average detector is unnecessary.

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Trace: 7
Site no : 1#CE Shield Room Data no. : 8
Env. / Ins. : Temp:25.1°C;Humi:59%;Press:101.50kPa LINE Phase : NEUTRAL
Limit : FCC PART 15C QP
Engineer : Micheal
EUT : QI2 2-IN-1 WIRELESS CHARGER
Power : DC 9V From Adapter Input AC 120V/60Hz
M/N : MPP20-1TCNB-J
Test Mode : Charging

	Freq. (MHz)	LISN Factor (db)	Cable Loss (db)	Reading dBuV	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.165	10.40	9.90	13.27	33.57	55.21	21.64	Average
2	0.165	10.40	9.90	28.21	48.51	65.21	16.70	QP
3	0.435	10.24	9.91	17.08	37.23	47.15	9.92	Average
4	0.435	10.24	9.91	21.13	41.28	57.15	15.87	QP
5	1.593	10.09	9.93	17.55	37.57	46.00	8.43	Average
6	1.593	10.09	9.93	20.66	40.68	56.00	15.32	QP
7	1.888	10.08	9.93	16.89	36.90	46.00	9.10	Average
8	1.888	10.08	9.93	19.56	39.57	56.00	16.43	QP
9	2.178	10.07	9.93	17.10	37.10	46.00	8.90	Average
10	2.178	10.07	9.93	20.13	40.13	56.00	15.87	QP
11	24.271	10.29	10.10	23.08	43.47	50.00	6.53	Average
12	24.271	10.29	10.10	27.02	47.41	60.00	12.59	QP

Remarks: 1. Emission Level= LISN Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. If the average limit is met when using a quasi-peak detector,
the EUT shall be deemed to meet both limits and measurement
with average detector is unnecessary.