

Test Report



(Declaration of Conformity)

for
Electromagnetic Compatibility
of

Product : **DC/DC Converter**

Trade Name : N/A

Model Number : Refer to section 1.2

Prepared for

TRACO ELECTRONIC AG

SIHLBRUGGSTASSE 111 CH-6340 BAAR, SWITZERLAND

Prepared by

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Remark:

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The test result in this report is only subjected to the test sample.

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Statement of Compliance

Applicant: TRACO ELECTRONIC AG

Manufacturer: TRACO ELECTRONIC AG

Product: DC/DC Converter

Model No.: Refer to section 1.2

Tested Power Voltage: DC 24 V; DC 110 V

Date of Final Test: May 30, 2018

Revision of Report: Rev. 00

Measurement Procedures and Standards Used :

Emission:

☒ EN 55032: 2015+AC: 2016

Immunity:

☒ EN 55024: 2010+A1: 2015

☒ IEC 61000-4-2: 2008

☒ IEC 61000-4-3: 2006+A1: 2007+A2: 2010

☒ IEC 61000-4-4: 2012

☒ IEC 61000-4-5: 2014

☒ IEC 61000-4-6: 2013

☒ IEC 61000-4-8: 2009

☒ IEC 61000-4-11: 2004

The measurement results in this test report were performed at Interocean EMC Technology Corp. The responsibility of measurement result is only subjected to the tested sample. This report shows the EUT is technically compliance with the above official standards. This report shall not be partial reproduced without written approval by Interocean EMC Technology Corporation.

Report Issued: 2018/06/21

Project Engineer: Ceres Cheng
Ceres Cheng

Approved: Roy Chiang
Roy Chiang

1 General Information

1.1 Description of Equipment Under Test

Product	: DC/DC Converter
Model Number	: Refer to section 1.2
Applicant	: TRACO ELECTRONIC AG SIHLBRUGGSTRASSE 111 CH-6340 BAAR, SWITZERLAND
Manufacturer	: TRACO ELECTRONIC AG SIHLBRUGGSTRASSE 111 CH-6340 BAAR, SWITZERLAND
Power Supply	: Please refer to section 1.3
Date of Test	: Dec. 20, 2016 ~ Jan. 11, 2017 (For Test Mode 1 & 2) May 30, 2018 (For Test Mode 3)
Additional Description	: 1) The test models are “ TEQ 40-2415WIR; TEQ 40-7211WIR; TEQ 40-7225WIR ” and included in this report. 2) The differences for all models included in this report, the details please refer to section 1.3. 3) For more detail specification about EUT, please refer to the user’s manual.

1.2 Model Number List

TEQ 40-2411WIR	TEQ 40-2411WIR-A1	TEQ 40-2412WIR
TEQ 40-2412WIR-A1	TEQ 40-2413WIR	TEQ 40-2413WIR-A1
TEQ 40-2415WIR	TEQ 40-2415WIR-A1	TEQ 40-4811WIR
TEQ 40-4811WIR-A1	TEQ 40-4812WIR	TEQ 40-4812WIR-A1
TEQ 40-4813WIR	TEQ 40-4813WIR-A1	TEQ 40-4815WIR
TEQ 40-4815WIR-A1	TEQ 40-7211WIR	TEQ 40-7211WIR-A1
TEQ 40-7212WIR	TEQ 40-7212WIR-A1	TEQ 40-7213WIR
TEQ 40-7213WIR-A1	TEQ 40-7215WIR	TEQ 40-7215WIR-A1
TEQ 40-2422WIR	TEQ 40-2423WIR	TEQ 40-2425WIR
TEQ 40-4822WIR	TEQ 40-4823WIR	TEQ 40-4825WIR
TEQ 40-7222WIR	TEQ 40-7223WIR	TEQ 40-7225WIR
TEQ 40-2422WIR-A1	TEQ 40-2423WIR-A1	TEQ 40-2425WIR-A1
TEQ 40-4822WIR-A1	TEQ 40-4823WIR-A1	TEQ 40-4825WIR-A1
TEQ 40-7222WIR-A1	TEQ 40-7223WIR-A1	TEQ 40-7225WIR-A1

1.3 Specifications Description

Model Name	TP-Standard	Input Range	Output Voltage	DIN-Rail
		VDC	VDC	
TEQ 40-2411WIR	X	9.5 - 36	5	
TEQ 40-2412WIR	X	9.5 - 36	12	
TEQ 40-2413WIR	X	9.5 - 36	15	
TEQ 40-2415WIR	X	9.5 - 36	24	
TEQ 40-4811WIR	X	18 - 75	5	
TEQ 40-4812WIR	X	18 - 75	12	
TEQ 40-4813WIR	X	18 - 75	15	
TEQ 40-4815WIR	X	18 - 75	24	
TEQ 40-7211WIR	X	43 - 160	5	
TEQ 40-7212WIR	X	43 - 160	12	
TEQ 40-7213WIR	X	43 - 160	15	
TEQ 40-7215WIR	X	43 - 160	24	
TEQ 40-2411WIR-A1		9.5 - 36	5	X
TEQ 40-2412WIR-A1		9.5 - 36	12	X
TEQ 40-2413WIR-A1		9.5 - 36	15	X
TEQ 40-2415WIR-A1		9.5 - 36	24	X
TEQ 40-4811WIR-A1		18 - 75	5	X
TEQ 40-4812WIR-A1		18 - 75	12	X
TEQ 40-4813WIR-A1		18 - 75	15	X
TEQ 40-4815WIR-A1		18 - 75	24	X
TEQ 40-7211WIR-A1		43 - 160	5	X
TEQ 40-7212WIR-A1		43 - 160	12	X
TEQ 40-7213WIR-A1		43 - 160	15	X
TEQ 40-7215WIR-A1		43 - 160	24	X
TEQ 40-2422WIR	X	9.5 - 36	± 12	
TEQ 40-2423WIR	X	9.5 - 36	± 15	
TEQ 40-2425WIR	X	9.5 - 36	± 24	
TEQ 40-4822WIR	X	18 - 75	± 12	
TEQ 40-4823WIR	X	18 - 75	± 15	
TEQ 40-4825WIR	X	18 - 75	± 24	
TEQ 40-7222WIR	X	43 - 160	± 12	
TEQ 40-7223WIR	X	43 - 160	± 15	
TEQ 40-7225WIR	X	43 - 160	± 24	
TEQ 40-2422WIR-A1		9.5 - 36	± 12	X
TEQ 40-2423WIR-A1		9.5 - 36	± 15	X
TEQ 40-2425WIR-A1		9.5 - 36	± 24	X
TEQ 40-4822WIR-A1		18 - 75	± 12	X
TEQ 40-4823WIR-A1		18 - 75	± 15	X
TEQ 40-4825WIR-A1		18 - 75	± 24	X
TEQ 40-7222WIR-A1		43 - 160	± 12	X
TEQ 40-7223WIR-A1		43 - 160	± 15	X
TEQ 40-7225WIR-A1		43 - 160	± 24	X

1.4 Details of Tested Supporting System**1.4.1 Load (Model No.: TEQ 40-2415WIR)**

Full Load : 40.08 W (24 V, 1.67 A)

1.4.2 Load (Model No.: TEQ 40-7211WIR)

Full Load : 40 W (5 V, 8 A)

1.4.3 Load (Model No.: TEQ 40-7225WIR)Full Load : 39.9 W (\pm 24 V, 0.833 A)**1.4.4 Test Cable**

Power Cable : Non-shielded, Detachable, 1.8 m, w/o core

1.5 Test Facility

- Site Description** : ☒Conducted 1 ☒OATS 1 ☒EMS Room
- Name of Firm** : Interocean EMC Technology Corp.
- Company web** : <http://www.ietc.com.tw>
- Location** : No. 5-2, Lin 1, Tin-Fu, Lin-Kou Dist., New Taipei City, Taiwan 244, R.O.C.
- Site Filing** :
- Federal Communication Commissions – USA
Designation No.: TW1020 (Test Firm Registration #: 651092)
Designation No.: TW1113 (Test Firm Registration #: 959554)
 - Industry Canada (IC)
OUR FILE: 46405-4437
Registration No. (OATS 1): Site# 4437A-1
Registration No. (OATS 3): Site# 4437A-3
Registration No. (Chamber 3): Site# 4437A-5
Registration No. (OATS 5): Site# 4437A-6
 - Voluntary Control Council for Interference by Information Technology Equipment (VCCI) – Japan
Member No.: 1349
Registration No. (Conducted Room): C-11094
Registration No. (Conducted Room): T-11562
Registration No. (OATS 1): R-11040; G-10274
- Site Accreditation** :
- Bureau of Standards and Metrology and Inspection (BSMI) – Taiwan, R.O.C.
Accreditation No.:
SL2-IN-E-0026 for CNS 13438 / CISPR 22
SL2-R1-E-0026 for CNS 13439 / CISPR 13
SL2-R2-E-0026 for CNS 13439 / CISPR 13
SL2-L1-E-0026 for CNS 14115 / CISPR 15
 - Taiwan Accreditation Foundation (TAF)
Accreditation No.: 1113
 - Vehicle Safety Certification Center (VSCC)
Approval No.: TW16-11
 - TÜV NORD
Certificate No: TNTW0801R

1.6 Measurement Uncertainty

Item	Value
Conduction 1:	
Conducted Emission - AMN (9 kHz to 30 MHz)	2.98 dB
Conducted Emission - AAN (ISN-T4) (150 kHz to 30 MHz)	3.70 dB
Conducted Emission - AAN (ISN-T8) (150 kHz to 30 MHz)	3.70 dB
Conducted Emission - CP (9 kHz to 30 MHz)	3.06 dB
Conducted Emission - VP (9 kHz to 30 MHz)	2.42 dB
Radiated Emission - LAS (2 m Loop) (9 kHz to 30 MHz)	3.26 dB
Disturbance Power (30 MHz to 300 MHz)	4.04 dB
OATS 1:	
Radiated Emission Test (30 MHz to 1 GHz)	4.84 dB
Radiated Emission Test (1 GHz to 6 GHz)	4.84 dB
OATS 3:	
Radiated Emission Test (30 MHz to 1 GHz)	4.70 dB
OATS 5:	
Radiated Emission Test (30 MHz to 1 GHz)	4.70 dB
Chamber 3:	
Radiated Emission Test (9 kHz to 30 MHz)	3.12 dB
Radiated Emission Test (30 MHz to 1 GHz)	4.86 dB
Radiated Emission Test (1 GHz to 6 GHz)	4.78 dB
Induced Current Density (20 kHz to 10 MHz)	1.82 dB
Conducted Immunity Room:	
Conducted Immunity Test / CDN-M2	1.30 dB
Conducted Immunity Test / CDN-M3	1.30 dB
Conducted Immunity Test / EM Clamp	3.16 dB

1.7 Summary of Test Results

1.7.1 Test program according EN 55032

Emission test equipment intended	
<input type="checkbox"/>	Class A
<input checked="" type="checkbox"/>	Class B

Report Clause	Phenomenon	Application	Reference Clause(s)	Reference Standard	Result
2	Power Line Conducted Emission	DC Mains Power Port	Annex A.3	CISPR 16-2-1	PASS
	Asymmetric Mode Conducted Emissions	Wired Network Ports	Annex A.3	CISPR 16-2-1	Not Applicable
	Asymmetric Mode Conducted Emissions	Optical Fibre Ports	Annex A.3	--	Not Applicable
	Asymmetric Mode Conducted Emissions	Broadcast Receiver Tuner Ports	Annex A.3	--	Not Applicable
	Asymmetric Mode Conducted Emissions	Antenna Ports	Annex A.3	--	Not Applicable
	Conducted Differential Voltage Emissions	TV Broadcast Receiver Tuner Ports	Annex A.3	--	Not Applicable
	Conducted Differential Voltage Emissions	RF Modulator Output Ports	Annex A.3	--	Not Applicable
	Conducted Differential Voltage Emissions	FM Broadcast Receiver Tuner Ports	Annex A.3	--	Not Applicable
3	Radiated Emission (Below 1 GHz)	Enclosure Port	Annex A.2	CISPR 16-1-4	PASS
	Radiated Emission (Above 1 GHz)	Enclosure Port	Annex A.2	CISPR 16-1-4	Not Applicable ^a
	Radiated Emissions (FM Receivers)	Enclosure Port	Annex A.2	CISPR 16-1-4	Not Applicable

Note: ^a The highest frequency of the internal sources of the EUT is less than 108 MHz and therefore the measurement is not required.

1.7.2 Test program according EN 61000-3-2

Report Clause	Phenomenon	Application	Reference Clause	Reference Standard	Result
	Harmonic Current Emissions	AC Power Port	5	--	Not Applicable

1.7.3 Test program according EN 61000-3-3

Report Clause	Phenomenon	Application	Reference Clause	Reference Standard	Result
	Voltage Changes, Voltage Fluctuations and Flicker	AC Power Port	5	--	Not Applicable

1.7.4 Test program according EN 55024

Report Clause	Phenomenon	Application	Reference Clause(s)	Reference Standard	Result
5	Electrostatic Discharge (ESD)	Enclosure Port	4.2.1	IEC 61000-4-2	PASS
6	Radio-Frequency Electromagnetic Field	Enclosure Port	4.2.3.1	IEC 61000-4-3	PASS
7	Fast Transients	DC Power Port	4.2.2	IEC 61000-4-4	PASS
8	Surges	DC Power Port	4.2.5	IEC 61000-4-5	PASS
9	Radio-Frequency Continuous Conducted	DC Power Port	4.2.3.2	IEC 61000-4-6	PASS
10	Power-Frequency Magnetic Field	Enclosure Port	4.2.4	IEC 61000-4-8	PASS
	Voltage Dips and Interruptions	AC Power Port	4.2.6	IEC 61000-4-11	Not Applicable

1.8 Measured Mode

1.8.1 The test modes for preliminary test are as following:

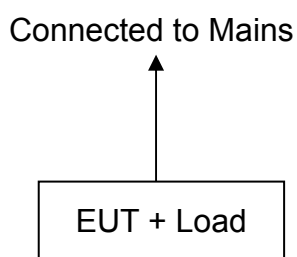
- Mode 1: Full Load (Model No.: TEQ 40-7211WIR)
- Mode 2: Full Load (Model No.: TEQ 40-2415WIR)
- Mode 3: Full Load (Model No.: TEQ 40-7225WIR)

1.8.2 After preliminary test, EUT was selected the worst-case for the final testing.

The test modes are:

- For Emission: Mode 1 ~ 3
- For Immunity: Mode 1

1.9 Configuration of EUT Setup



1.10 Test Step of EUT

- 1.10.1 Set the EUT and peripheral as above.
- 1.10.2 Turn on the power of all equipments.
- 1.10.3 Confirm all functions are normal.
- 1.10.4 Execute the test.

2.3 Conducted Limits

Frequency (MHz)	<input type="checkbox"/> Class A (dB μ V)		<input checked="" type="checkbox"/> Class B (dB μ V)	
	Q.P. (Quasi-Peak)	A.V. (Average)	Q.P. (Quasi-Peak)	A.V. (Average)
0.15 to 0.50	79	66	66 to 56	56 to 46
0.50 to 5.0	73	60	56	46
5.0 to 30	73	60	60	50

2.4 Instrument Configuration

- 2.4.1 Set the EMI test receiver frequency range from 150 kHz to 30 MHz.
- 2.4.2 Set the EMI test receiver bandwidth at 9 kHz.
- 2.4.3 Set the EMI test receiver detector as Quasi-Peak (Q.P.) and Average (AV).

2.5 Configuration of Measurement

- 2.5.1 The EUT was placed on a non-conductive table whose total height equaled 80 cm and vertical conducting plane located 40 cm to the rear of the EUT.
- 2.5.2 The EUT was connected to the main power through Line Impedance Stabilization Networks (LISN). This setup provided a 50 ohm / 50 μ H coupling impedance for the measuring equipment. The auxiliary equipment was also connected to the main power through a LISN that provided a 50 ohm/50 μ H coupling impedance with 50 ohm termination. (Refer to the block diagram of the test setup and photographs.)
- 2.5.3 The conducted disturbance was measured between the phase lead and the reference ground, and between the neutral lead and reference ground. The initial testing identified the frequency that has the highest disturbance relative to the limit while operating the EUT in typical modes of operation and cable positions in a test setup representative of typical system configuration.
- 2.5.4 The identification of the frequency of highest disturbance with respect to the limit was found by investigating disturbances at a number of significant frequencies. The probable frequency of maximum disturbance had been found and that the associated cable and EUT configuration and mode of operation had been identified.

2.6 Test Result

PASS.

The final test data is shown as following pages.

Factor = Insertion Loss + Cable Loss

Level = Reading + Factor

Margin = Level - Limit

Power Line Conducted Test Data

CLIENT: TRACO ELECTRONIC AG

OPERATOR: Mark

EUT: DC/DC Converter

TEST SITE: Conducted 1

MODEL: TEQ 40-7211WIR

POLARIZATION: Line

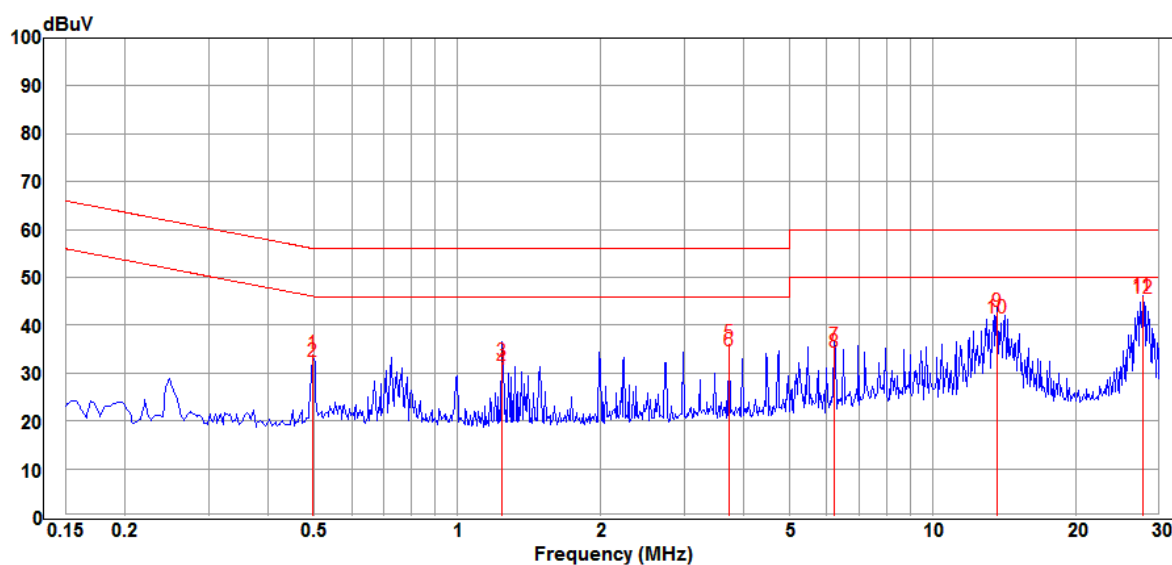
RATING: DC 110 V

TEMP/HUM: 23.9°C / 64%

COMMENT: Test Mode: Mode 1: Full Load (Model No.: TEQ 40-7211WIR)

Data:36

2016-12-20



Item Mark	Freq. MHz	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Remark
1	0.497	33.78	0.20	33.98	56.05	-22.07	QP
2	0.497	32.12	0.20	32.32	46.05	-13.73	Average
3	1.242	32.21	0.26	32.47	56.00	-23.53	QP
4	1.242	30.51	0.26	30.77	46.00	-15.23	Average
5	3.740	35.83	0.37	36.20	56.00	-19.80	QP
6	3.740	34.39	0.37	34.76	46.00	-11.24	Average
7	6.219	35.16	0.44	35.60	60.00	-24.40	QP
8	6.219	34.00	0.44	34.44	50.00	-15.56	Average
9	13.695	41.93	0.82	42.75	60.00	-17.25	QP
10	13.695	40.60	0.82	41.42	50.00	-8.58	Average
11	27.708	44.58	1.52	46.10	60.00	-13.90	QP
12	27.708	43.99	1.52	45.51	50.00	-4.49	Average

Power Line Conducted Test Data

CLIENT: TRACO ELECTRONIC AG

OPERATOR: Mark

EUT: DC/DC Converter

TEST SITE: Conducted 1

MODEL: TEQ 40-7211WIR

POLARIZATION: Neutral

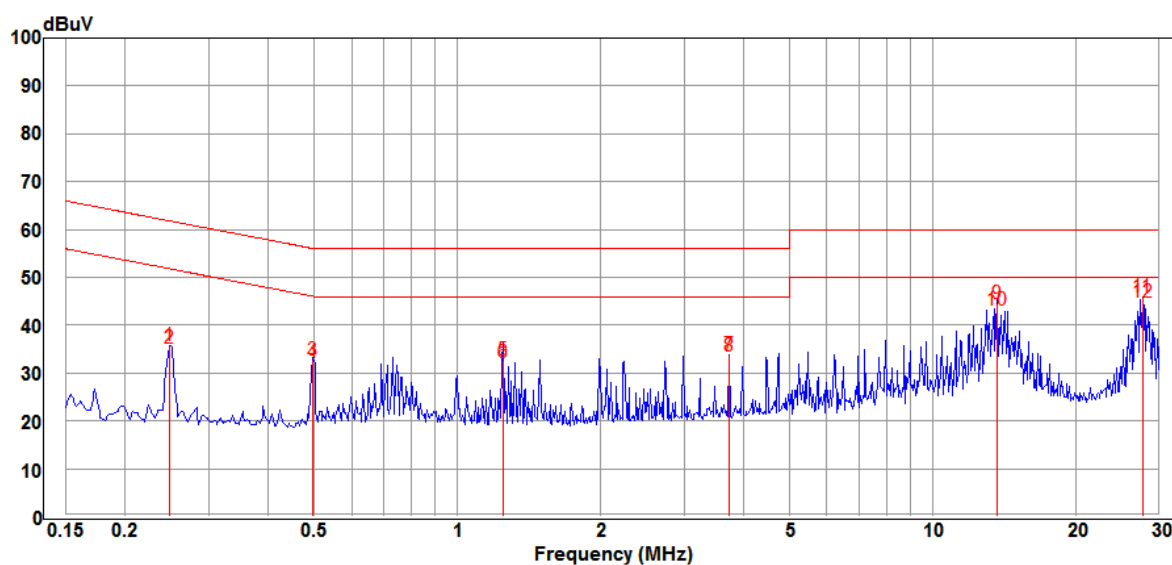
RATING: DC 110 V

TEMP/HUM: 23.9°C / 64%

COMMENT: Test Mode: Mode 1: Full Load (Model No.: TEQ 40-7211WIR)

Data:35

2016-12-20



Item Mark	Freq. MHz	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Remark
1	0.248	35.54	0.16	35.70	61.82	-26.12	QP
2	0.248	34.98	0.16	35.14	51.82	-16.68	Average
3	0.497	32.51	0.19	32.70	56.05	-23.35	QP
4	0.497	32.03	0.19	32.22	46.05	-13.83	Average
5	1.249	32.55	0.25	32.80	56.00	-23.20	QP
6	1.249	31.90	0.25	32.15	46.00	-13.85	Average
7	3.740	33.50	0.37	33.87	56.00	-22.13	QP
8	3.740	33.16	0.37	33.53	46.00	-12.47	Average
9	13.695	43.44	0.94	44.38	60.00	-15.62	QP
10	13.695	42.12	0.94	43.06	50.00	-6.94	Average
11	27.708	44.32	1.54	45.86	60.00	-14.14	QP
12	27.708	43.21	1.54	44.75	50.00	-5.25	Average

Power Line Conducted Test Data

CLIENT: TRACO ELECTRONIC AG

OPERATOR: Vic

EUT: DC/DC Converter

TEST SITE: Conducted 1

MODEL: TEQ 40-2415WIR

POLARIZATION: Line

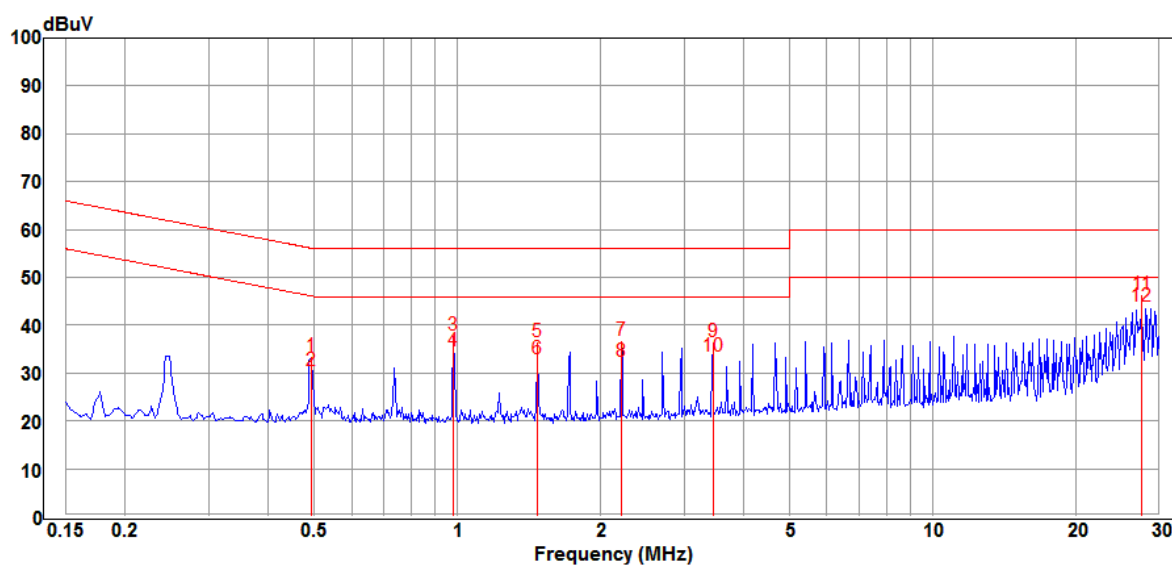
RATING: DC 24 V

TEMP/HUM: 26.3°C / 60%

COMMENT: Test Mode: Mode 2: Full Load (Model No.: TEQ 40-2415WIR)

Data:2

2017-01-11



Item Mark	Freq. MHz	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Remark
1	0.494	33.30	0.20	33.50	56.10	-22.60	QP
2	0.494	30.23	0.20	30.43	46.10	-15.67	Average
3	0.984	37.57	0.23	37.80	56.00	-18.20	QP
4	0.984	34.34	0.23	34.57	46.00	-11.43	Average
5	1.480	36.36	0.27	36.63	56.00	-19.37	QP
6	1.480	32.82	0.27	33.09	46.00	-12.91	Average
7	2.213	36.55	0.31	36.86	56.00	-19.14	QP
8	2.213	32.09	0.31	32.40	46.00	-13.60	Average
9	3.454	36.21	0.36	36.57	56.00	-19.43	QP
10	3.454	33.05	0.36	33.41	46.00	-12.59	Average
11	27.562	44.82	1.51	46.33	60.00	-13.67	QP
12	27.562	42.33	1.51	43.84	50.00	-6.16	Average

Power Line Conducted Test Data

CLIENT: TRACO ELECTRONIC AG

OPERATOR: Vic

EUT: DC/DC Converter

TEST SITE: Conducted 1

MODEL: TEQ 40-2415WIR

POLARIZATION: Neutral

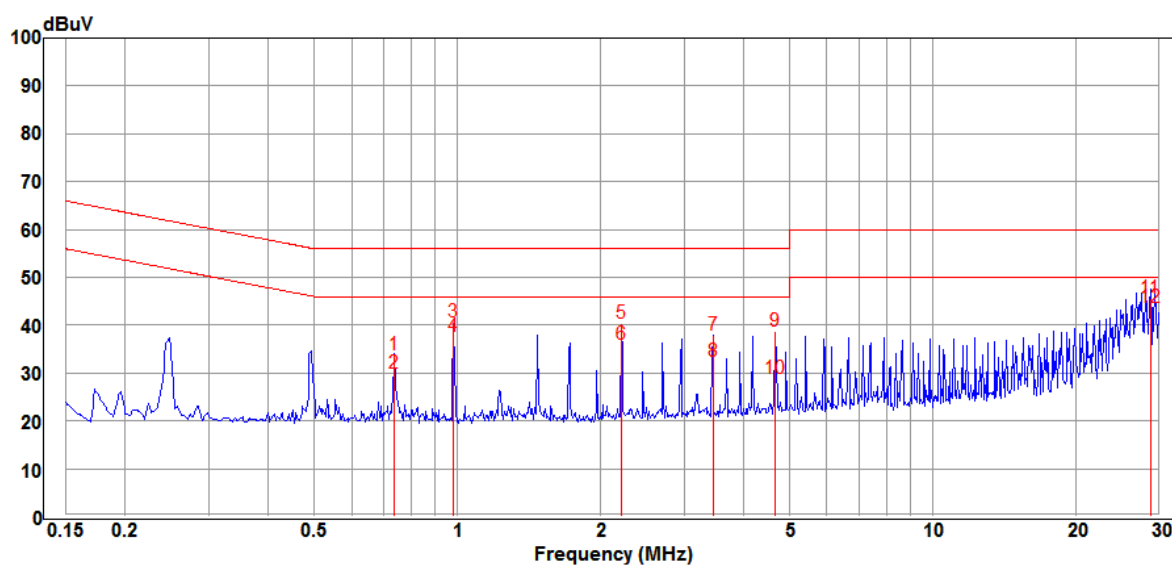
RATING: DC 24 V

TEMP/HUM: 26.3°C / 60%

COMMENT: Test Mode: Mode 2: Full Load (Model No.: TEQ 40-2415WIR)

Data:1

2017-01-11



Item Mark	Freq. MHz	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Remark
1	0.735	33.55	0.21	33.76	56.00	-22.24	QP
2	0.735	29.64	0.21	29.85	46.00	-16.15	Average
3	0.984	40.46	0.22	40.68	56.00	-15.32	QP
4	0.984	37.46	0.22	37.68	46.00	-8.32	Average
5	2.213	39.99	0.31	40.30	56.00	-15.70	QP
6	2.213	35.57	0.31	35.88	46.00	-10.12	Average
7	3.454	37.57	0.36	37.93	56.00	-18.07	QP
8	3.454	32.16	0.36	32.52	46.00	-13.48	Average
9	4.672	38.20	0.42	38.62	56.00	-17.38	QP
10	4.672	28.30	0.42	28.72	46.00	-17.28	Average
11	28.755	44.05	1.56	45.61	60.00	-14.39	QP
12	28.755	42.09	1.56	43.65	50.00	-6.35	Average

Power Line Conducted Test Data

CLIENT: TRACO ELECTRONIC AG

OPERATOR: Ceres

EUT: DC/DC Converter

TEST SITE: Conducted 1

MODEL: TEQ 40-7225WIR

POLARIZATION: Line

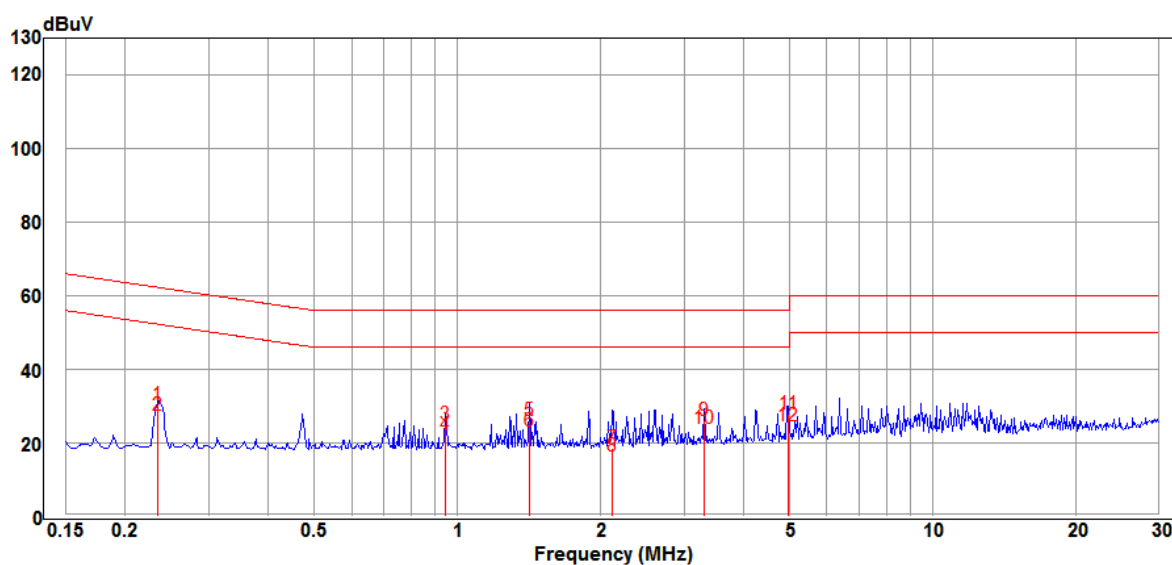
RATING: DC 110 V

TEMP/HUM: 26.3°C / 60%

COMMENT: Test Mode: Mode 3: Full Load (Model No.: TEQ 40-7225WIR)

Data:10

2018-05-30



Item Mark	Freq. MHz	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Remark
1	0.2353	20.12	10.22	30.34	62.26	-31.92	QP
2	0.2353	17.12	10.22	27.34	52.26	-24.92	Average
3	0.9481	14.81	10.29	25.10	56.00	-30.90	QP
4	0.9481	11.81	10.29	22.10	46.00	-23.90	Average
5	1.4180	15.91	10.35	26.26	56.00	-29.74	QP
6	1.4180	12.91	10.35	23.26	46.00	-22.74	Average
7	2.1210	8.08	10.41	18.49	56.00	-37.51	QP
8	2.1210	6.08	10.41	16.49	46.00	-29.51	Average
9	3.3100	15.61	10.47	26.08	56.00	-29.92	QP
10	3.3100	13.61	10.47	24.08	46.00	-21.92	Average
11	4.9780	17.25	10.52	27.77	56.00	-28.23	QP
12	4.9780	14.25	10.52	24.77	46.00	-21.23	Average

Power Line Conducted Test Data

CLIENT: TRACO ELECTRONIC AG

OPERATOR: Ceres

EUT: DC/DC Converter

TEST SITE: Conducted 1

MODEL: TEQ 40-7225WIR

POLARIZATION: Neutral

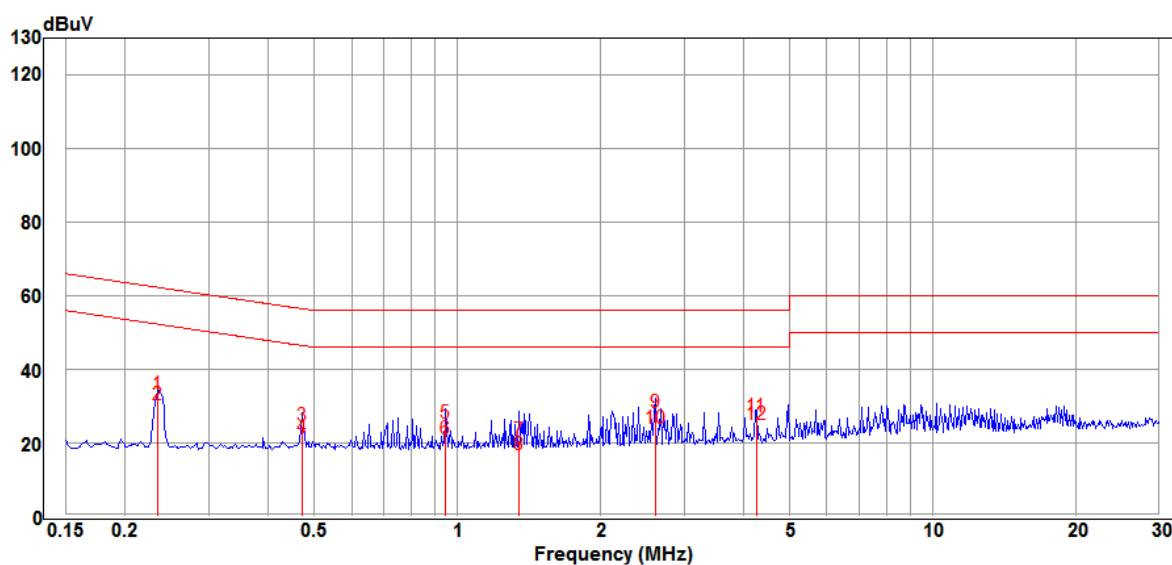
RATING: DC 110 V

TEMP/HUM: 26.3°C / 60%

COMMENT: Test Mode: Mode 3: Full Load (Model No.: TEQ 40-7225WIR)

Data:9

2018-05-30



Item Mark	Freq. MHz	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Remark
1	0.2353	23.02	10.26	33.28	62.26	-28.98	QP
2	0.2353	20.02	10.26	30.28	52.26	-21.98	Average
3	0.4711	14.32	10.26	24.58	56.49	-31.91	QP
4	0.4711	11.32	10.26	21.58	46.49	-24.91	Average
5	0.9481	14.93	10.31	25.24	56.00	-30.76	QP
6	0.9481	10.93	10.31	21.24	46.00	-24.76	Average
7	1.3520	10.30	10.36	20.66	56.00	-35.34	QP
8	1.3520	6.30	10.36	16.66	46.00	-29.34	Average
9	2.6080	17.57	10.49	28.06	56.00	-27.94	QP
10	2.6080	13.57	10.49	24.06	46.00	-21.94	Average
11	4.2690	16.62	10.55	27.17	56.00	-28.83	QP
12	4.2690	14.62	10.55	25.17	46.00	-20.83	Average

3 Radiated Emission (Below 1 GHz)

3.1 Instrument

(For Mode 1 & 2)

Instrument	Manufacturer	Model	Serial No.	Next Cal. Date
EMI Test Receiver	Rohde & Schwarz	ESVS10	826148/011	2017/10/19
Biconical Antenna	Schwarzbeck	VHA 9103 & BBA 9106	VHA 9103-2418	2017/07/13
Log Antenna	Schwarzbeck	UHALP 9108-A	9108-A 0739	2017/07/13
Pre-Amplifier	Agilent	8447D	2944A09703	2017/08/02
RF Cable	EMCI	EMC8D-NM-NM-25000	140105	2017/08/02
RF Cable	Mini-Circuits	CBL-3FL-NMNM	CBL56	2017/08/02
Measurement Software	AUDIX-e3			

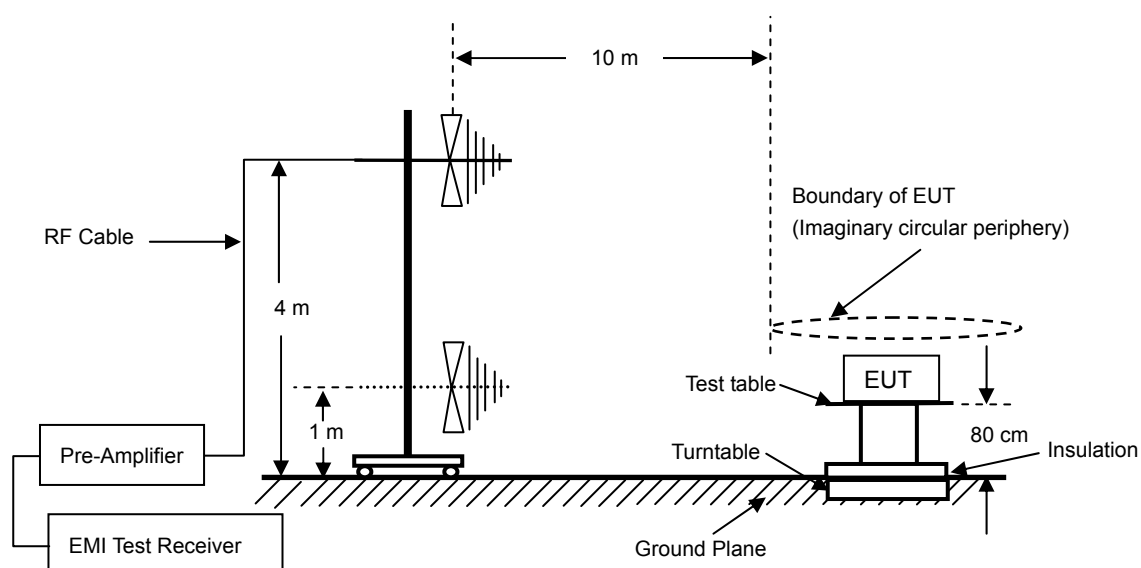
Note: The above equipments are within the valid calibration period.

(For Mode 3)

Instrument	Manufacturer	Model	Serial No.	Next Cal. Date
EMI Test Receiver	Rohde & Schwarz	ESCI	101116	2019/03/25
Biconical Antenna	Schwarzbeck	VHA 9103 & BBA 9106	VHA 9103-2418	2018/08/10
Log Antenna	Schwarzbeck	UHALP 9108-A	9108-A 0739	2018/08/10
Pre-Amplifier	Agilent	8447D	2944A09703	2018/07/31
RF Cable	EMCI	EMC8D-NM-NM-25000	140105	2018/07/31
RF Cable	Mini-Circuits	CBL-3FL-NMNM	CBL56	2018/07/31
Measurement Software	AUDIX-e3			

Note: The above equipments are within the valid calibration period.

3.2 Block Diagram of Test Configuration



3.3 Radiated Limits

Frequency (MHz)	<input type="checkbox"/> Class A	<input checked="" type="checkbox"/> Class B
	Quasi-Peak dB(μ V/m)	Quasi-Peak dB(μ V/m)
30 to 230	40.0	30.0
230 to 1000	47.0	37.0

3.4 Instrument Configuration

- 3.4.1 Set the EMI test receiver frequency range from 30 MHz to 1000 MHz.
- 3.4.2 Set the EMI test receiver bandwidth at 120 kHz.
- 3.4.3 Set the EMI test receiver detector as Quasi-Peak (Q.P.).

3.5 Configuration of Measurement

- 3.5.1 The EUT was placed on a non-conductive table whose total height equaled 80 cm. The turntable can rotate 360 degree to determine the position of the maximum emission level.
- 3.5.2 The EUT was set 10 meters away from the receiving antenna that was mounted on a non-conductive mast. The antenna can move up and down between 1 to 4 meters to find out the maximum emission level.
- 3.5.3 The initial testing identified the frequency that has the highest disturbance relative to the limit while operating the EUT in typical modes of operation and cable positions in a test setup representative of typical system configuration.
- 3.5.4 The identification of the frequency of highest emission with respect to the limit was found by investigating emissions at a number of significant frequencies. The probable frequency of maximum emission had been found and that the associated cable and EUT configuration and mode of operation had been identified.

3.6 Test Result

PASS.

The final test data is shown as following pages.

Factor = Antenna Factor + Cable Loss - Preamplifier Gain

Level = Reading + Factor

Margin = Level - Limit

Radiated Emission Measurement Data

CLIENT: TRACO ELECTRONIC AG

OPERATOR : Ceres

EUT: DC/DC Converter

TEST SITE : OATS 1

MODEL: TEQ 40-7211WIR

TEST DISTANCE : 10 m

RATING: DC 110 V

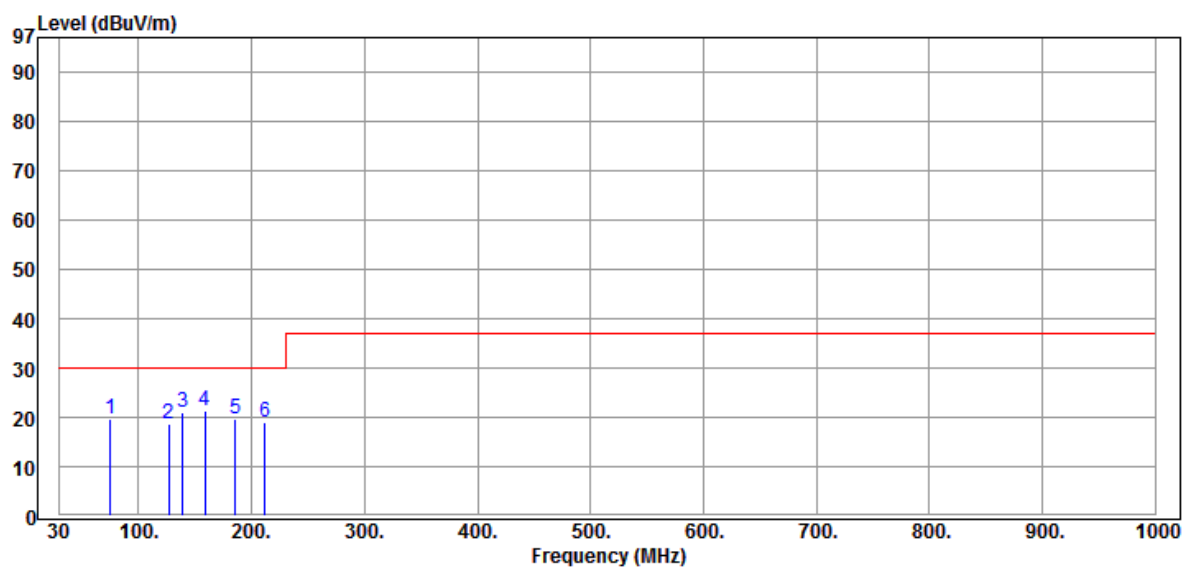
POLARIZATION : HORIZONTAL

COMMENT: Test Mode: Mode 1: Full Load (Model No.: TEQ 40-7211WIR)

TEMP/HUM : 27.9°C/51%

Data:41

2016-12-20



Item Mark	Freq. MHz	Reading dBUV	Factor dB/m	Level dBUV/m	Limit dBUV/m	Margin dB	Remark
1	74.880	42.90	-23.39	19.51	30.00	-10.49	QP
2	126.490	34.80	-16.04	18.76	30.00	-11.24	QP
3	138.960	36.50	-15.34	21.16	30.00	-8.84	QP
4	158.850	35.80	-14.31	21.49	30.00	-8.51	QP
5	185.960	32.49	-12.98	19.51	30.00	-10.49	QP
6	211.540	31.40	-12.32	19.08	30.00	-10.92	QP

Radiated Emission Measurement Data

CLIENT: TRACO ELECTRONIC AG

OPERATOR : Ceres

EUT: DC/DC Converter

TEST SITE : OATS 1

MODEL: TEQ 40-7211WIR

TEST DISTANCE : 10 m

RATING: DC 110 V

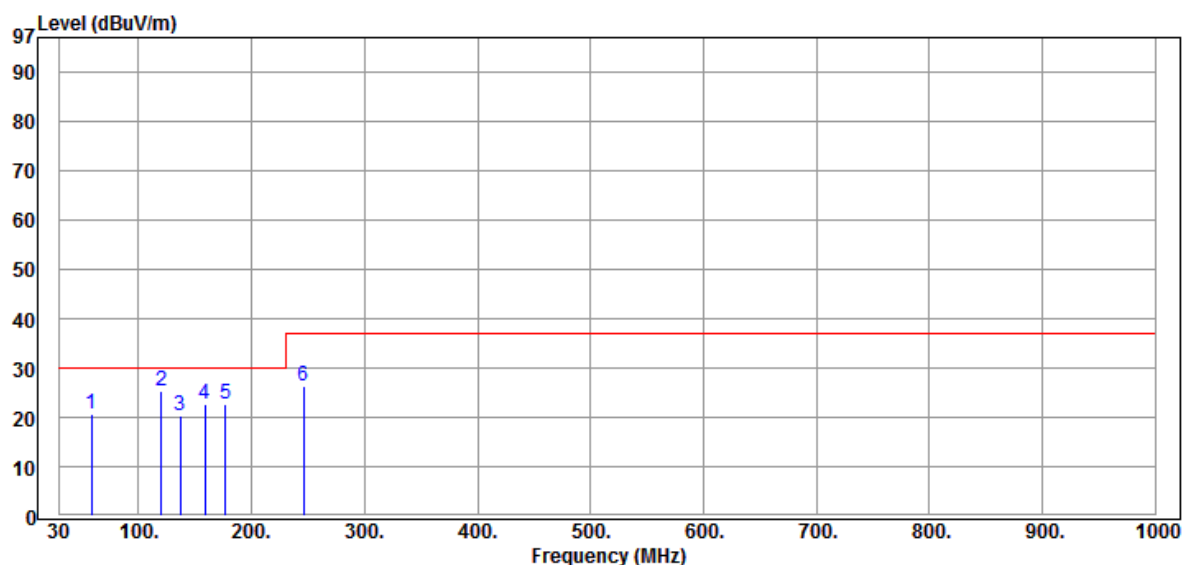
POLARIZATION : VERTICAL

COMMENT: Test Mode: Mode 1: Full Load (Model No.: TEQ 40-7211WIR)

TEMP/HUM : 27.9°C/51%

Data:39

2016-12-20



Item Mark	Freq. MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark
1	58.390	41.99	-21.42	20.57	30.00	-9.43	QP
2	119.960	42.00	-16.51	25.49	30.00	-4.51	QP
3	136.960	35.80	-15.44	20.36	30.00	-9.64	QP
4	158.990	36.90	-14.30	22.60	30.00	-7.40	QP
5	176.960	35.80	-13.11	22.69	30.00	-7.31	QP
6	245.800	37.70	-11.26	26.44	37.00	-10.56	QP

Radiated Emission Measurement Data

CLIENT: TRACO ELECTRONIC AG

OPERATOR : Ceres

EUT: DC/DC Converter

TEST SITE : OATS 1

MODEL: TEQ 40-2415WIR

TEST DISTANCE : 10 m

RATING: DC 24 V

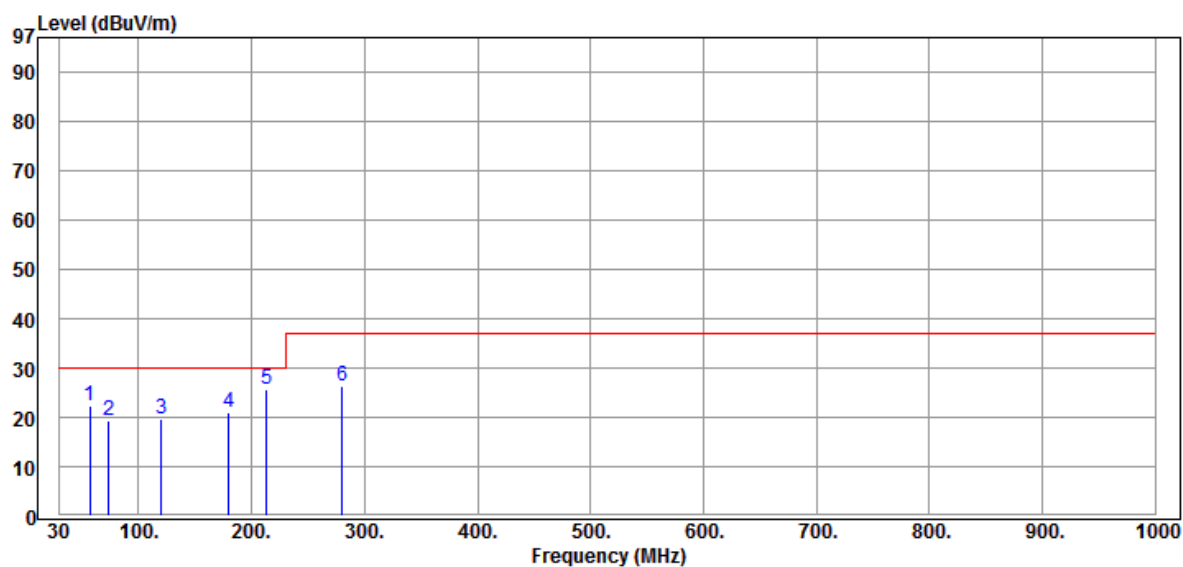
POLARIZATION : HORIZONTAL

COMMENT: Test Mode: Mode 2: Full Load (Model No.: TEQ 40-2415WIR)

TEMP/HUM : 22.3°C/57%

Data:2

2017-01-11



Item Mark	Freq. MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark
1	57.100	43.25	-21.08	22.17	30.00	-7.83	QP
2	73.780	42.70	-23.35	19.35	30.00	-10.65	QP
3	120.000	36.25	-16.51	19.74	30.00	-10.26	QP
4	180.000	34.13	-13.07	21.06	30.00	-8.94	QP
5	213.600	37.89	-12.26	25.63	30.00	-4.37	QP
6	280.000	36.41	-9.91	26.50	37.00	-10.50	QP

Radiated Emission Measurement Data

CLIENT: TRACO ELECTRONIC AG

OPERATOR : Ceres

EUT: DC/DC Converter

TEST SITE : OATS 1

MODEL: TEQ 40-2415WIR

TEST DISTANCE : 10 m

RATING: DC 24 V

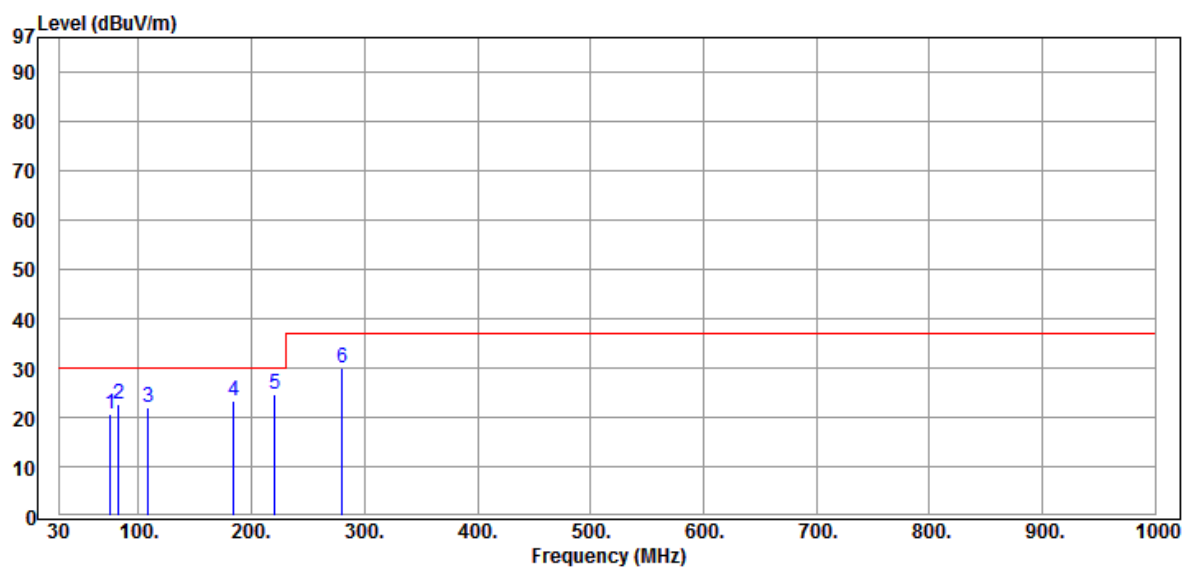
POLARIZATION : VERTICAL

COMMENT: Test Mode: Mode 2: Full Load (Model No.: TEQ 40-2415WIR)

TEMP/HUM : 22.3°C/57%

Data:1

2017-01-11



Item Mark	Freq. MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark
1	75.030	44.00	-23.39	20.61	30.00	-9.39	QP
2	82.269	46.01	-23.27	22.74	30.00	-7.26	QP
3	108.370	40.00	-18.02	21.98	30.00	-8.02	QP
4	184.550	36.19	-13.00	23.19	30.00	-6.81	QP
5	220.600	36.60	-12.08	24.52	30.00	-5.48	QP
6	280.000	40.00	-9.91	30.09	37.00	-6.91	QP

Radiated Emission Measurement Data

CLIENT: TRACO ELECTRONIC AG

OPERATOR : Ceres

EUT: DC/DC Converter

TEST SITE : OATS 1

MODEL: TEQ 40-7225WIR

TEST DISTANCE : 10 m

RATING: DC 110 V

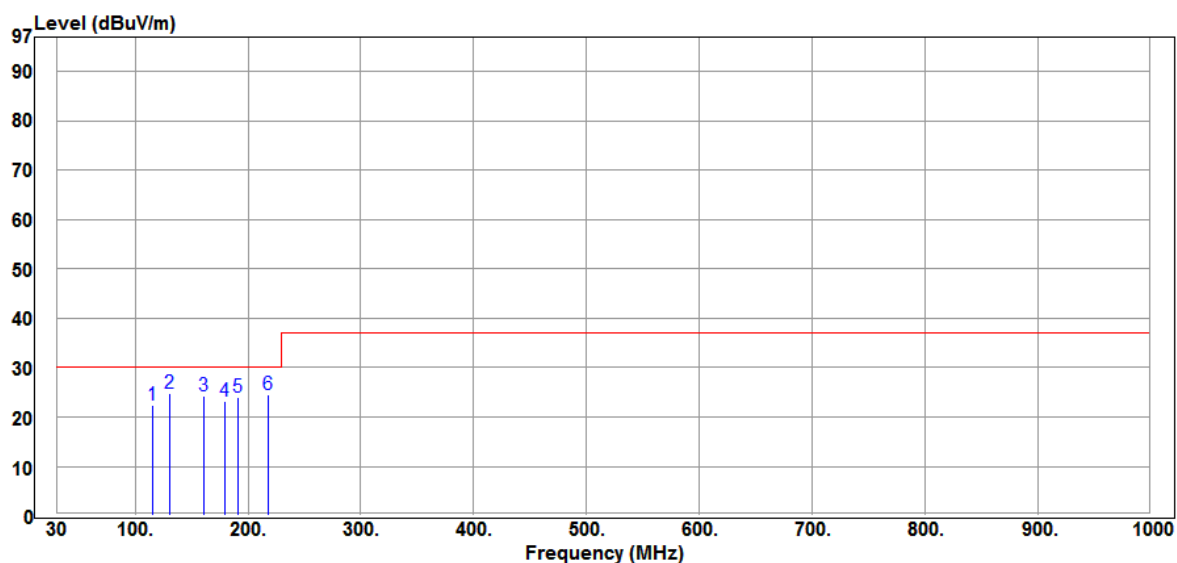
POLARIZATION : HORIZONTAL

COMMENT: Test Mode: Mode 3: Full Load (Model No.: TEQ 40-7225WIR)

TEMP/HUM : 25.2°C / 45%

Data:8

2018-05-30



Item Mark	Freq. MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark
1	115.960	35.21	-12.84	22.37	30.00	-7.63	QP
2	130.520	36.10	-11.19	24.91	30.00	-5.09	QP
3	160.550	33.91	-9.70	24.21	30.00	-5.79	QP
4	178.880	31.81	-8.63	23.18	30.00	-6.82	QP
5	191.540	31.39	-7.51	23.88	30.00	-6.12	QP
6	217.890	31.90	-7.30	24.60	30.00	-5.40	QP

Radiated Emission Measurement Data

CLIENT: TRACO ELECTRONIC AG

OPERATOR : Ceres

EUT: DC/DC Converter

TEST SITE : OATS 1

MODEL: TEQ 40-7225WIR

TEST DISTANCE : 10 m

RATING: DC 110 V

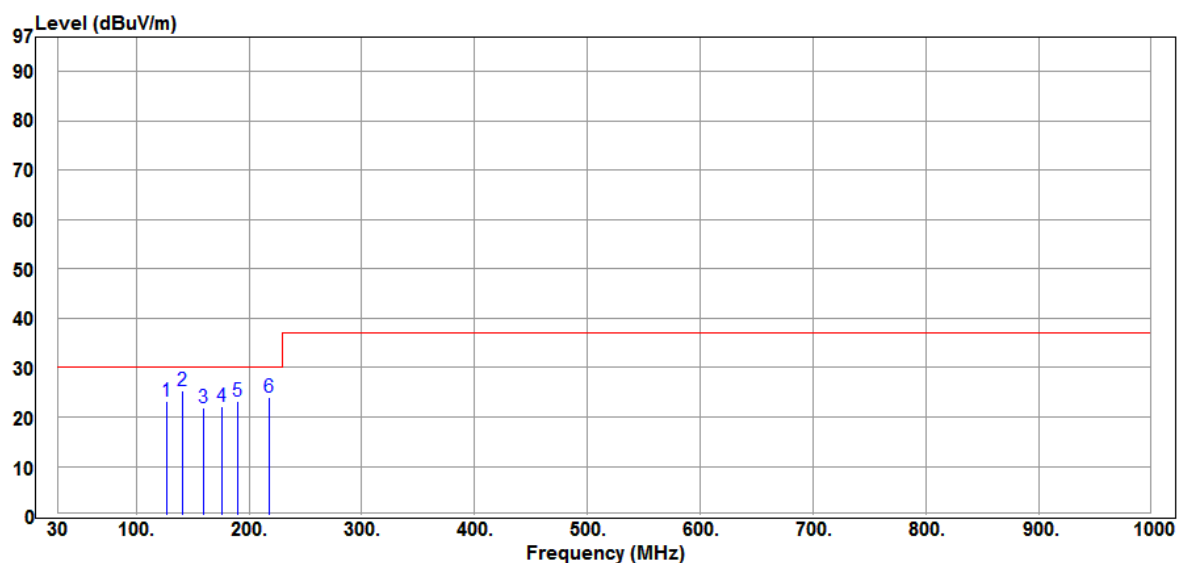
POLARIZATION : VERTICAL

COMMENT: Test Mode: Mode 3: Full Load (Model No.: TEQ 40-7225WIR)

TEMP/HUM : 25.2°C / 45%

Data:7

2018-05-30



Item Mark	Freq. MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark
1	126.960	34.90	-11.58	23.32	30.00	-6.68	QP
2	140.520	35.59	-10.19	25.40	30.00	-4.60	QP
3	159.970	31.60	-9.71	21.89	30.00	-8.11	QP
4	175.850	30.90	-8.90	22.00	30.00	-8.00	QP
5	189.970	30.80	-7.57	23.23	30.00	-6.77	QP
6	217.410	31.30	-7.30	24.00	30.00	-6.00	QP

4 Performance Criterion of Immunity Test

4.1 EN 55024

General performance criteria	
Criterion	Description
A	During and after the test the EUT shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a minimum performance level specified by the manufacturer when the EUT is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the EUT if used as intended.
B	After the test, the EUT shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed, after the application of the phenomena below a performance level specified by the manufacturer, when the EUT is used as intended. The performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is allowed. However, no change of operating state or stored data is allowed to persist after the test. If the minimum performance level (or the permissible performance loss) is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the EUT if used as intended.
C	During and after testing, a temporary loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls or cycling of the power to the EUT by the user in accordance with the manufacturer's instructions.

Particular performance criteria

The particular performance criteria which are specified in the normative annexes B~H take precedence over the corresponding parts of the general performance criteria.
Where particular performance criteria for specific functions are not given, then the general performance criteria shall apply.

Annex B Data processing equipment:

(Read, write and storage of data; Data display; Data input; Data printing; Data processing)

Annex C Local area networks (LAN)

Annex D Printers and plotters

Annex E Copying machines

Annex F Automatic teller machines (ATM)

Annex G Point of sale terminals (POST)

Annex H xDSL Terminal equipment

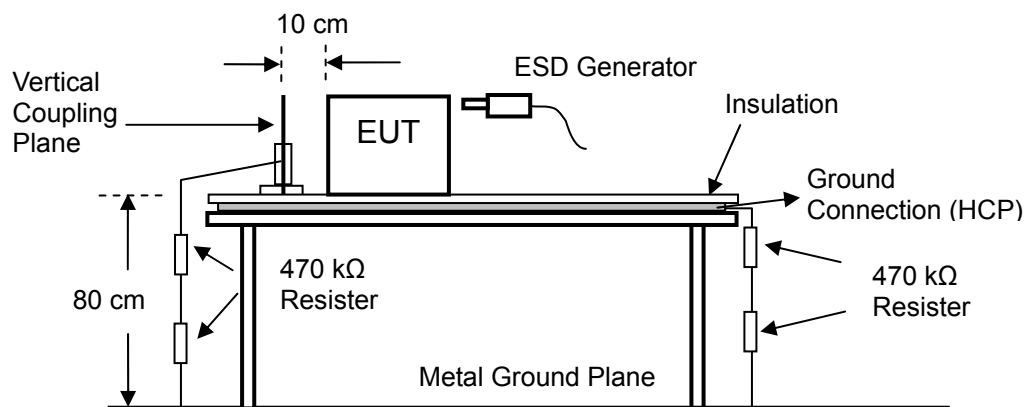
5 Electrostatic Discharge Immunity Test (IEC 61000-4-2)

5.1 Instrument

Instrument	Manufacturer	Model	Serial No.	Next Cal. Date
ESD Simulator	EMC PARTNER	ESD3000	276	2017/04/21

Note: The above equipments are within the valid calibration period.

5.2 Block Diagram of Test Configuration



5.3 Test Requirement

IEC 61000-4-2 (EN 55024) require:

Air discharge: ± 8 kV

Contact discharge: ± 4 kV

Performance criterion: **B**

According to special request by client:

Air discharge: ± 8 kV

Contact discharge: ± 6 kV

Performance criterion: **A**

5.4 Configuration of Measurement

- 5.4.1 The test setup consists of the test generator, EUT and auxiliary instrumentation necessary to perform direct and indirect application of discharges to the EUT in the following manner:
- contact discharge to the conductive surfaces and to coupling planes;
 - air discharge at insulating surfaces.
- 5.4.2 The EUT shall be arranged in accordance with the manufacturer's instructions for installation.

5.5 Test Result

PASS.

The performance criterion after tested EN 55024:

Temperature: 21.0 °C ; Humidity: 53 % ; Atmospheric: 986 hPa ; Test Engineer: Vic

Mode 1: Full Load (Model No.: TEQ 40-7211WIR)

Air discharge ± 2 kV, ± 4 kV, ± 8 kV: ☒ A ☐ B ☐ C

Contact discharge ± 2 kV, ± 4 kV, ± 6 kV: ☒ A ☐ B ☐ C

Indirect discharge (HCP) ± 2 kV, ± 4 kV, ± 6 kV: ☒ A ☐ B ☐ C

Indirect discharge (VCP) ± 2 kV, ± 4 kV, ± 6 kV: ☒ A ☐ B ☐ C

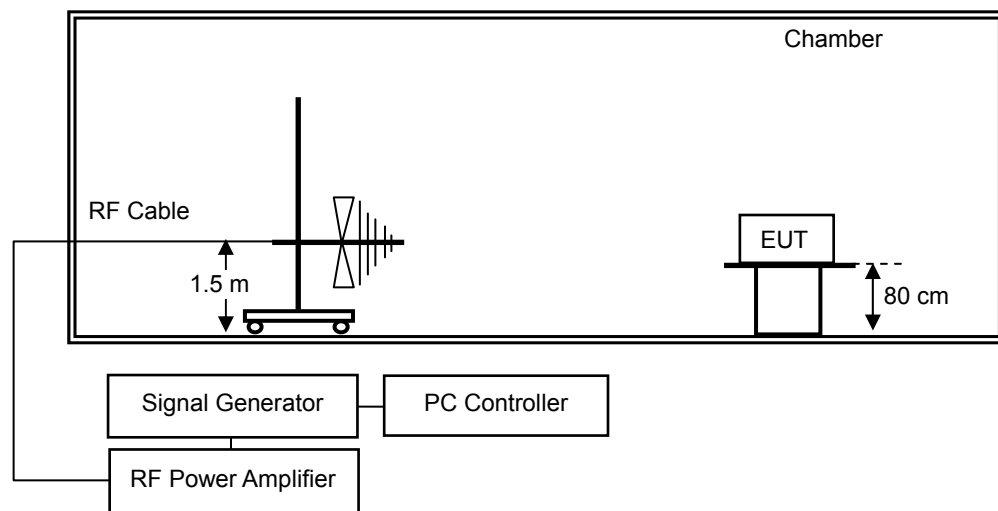
6 Radio- Frequency, Electromagnetic Field Immunity Test (IEC 61000-4-3)

6.1 Instrument

Instrument	Manufacturer	Model	Serial No.	Next Cal. Date
Signal Generator	KEYSIGHT	N5171B	MY53051802	2017/03/09
Power Amplifier	R&K	A080M102-5555R	B30850	2017/04/28
Log Antenna	Schwarzbeck	VULP 9118 G Special	9118GS912	2017/04/28

Note: The above equipments are within the valid calibration period.

6.2 Block Diagram of Test Configuration



6.3 Test Requirement

IEC 61000-4-3 (EN 55024) require:

The frequency steps: 1 %, Log sweep, Dwell time: 3.0 sec.

☒ Frequency range: **80 to 1000** MHz, Field strength: **3** V/m, 80 %AM (1 kHz),
Performance criterion: **A**

According to special request by client:

The frequency steps: 1 %, Log sweep, Dwell time: 3.0 sec.

☒ Frequency range: **80 to 1000** MHz, Field strength: **20** V/m, 80 %AM (1 kHz),
Performance criterion: **A**

6.4 Configuration of Measurement

- 6.4.1 Before testing, the intensity of the established field strength was checked by placing the field sensor at a calibration grid point, and with the field generating antenna and cables in the same positions as used for the calibration, the forward and reverse power were measured. The forward power needed to give the calibrated field was evaluated.
- 6.4.2 The EUT was placed on a non-metallic table 0.8m above the reference ground plane (RGP) and was operated according to its specified operating mode.
- 6.4.3 Ferrite tiles/ absorbers were placed on the RGP between the EUT and the antenna to reduce the reflections from the RGP.
- 6.4.4 The distance between antenna and EUT is 1 meter.

6.5 Test Result

PASS.

The performance criterion after tested EN 55024:

Temperature: 24.0 °C ; Humidity: 51 % ; Atmospheric: 986 hPa ; Test Engineer: Mark

Mode 1: Full Load (Model No.: TEQ 40-7211WIR)

☒ Frequency range: 80 to 1000 MHz, Field strength: 20 V/m, 80 % AM (1 kHz),
Performance criterion: ☒ A ☐ B ☐ C

7 Electrical Fast Transient/Burst Immunity Test (IEC 61000-4-4)

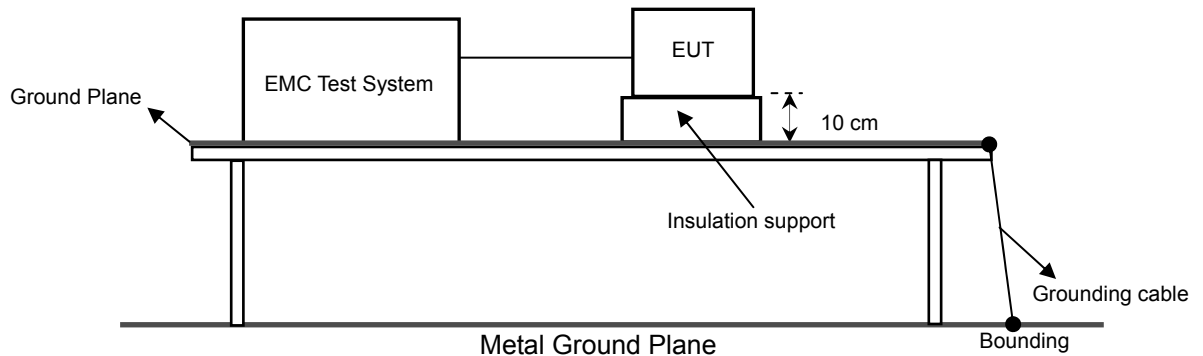
7.1 Instrument

Instrument	Manufacturer	Model	Serial No.	Next Cal. Date
EMC Test System	EMC PARTNER	TRANSIENT-2000	812	2017/03/06

Note: The above equipments are within the valid calibration period.

7.2 Block Diagram of Test Configuration

For Power Ports.



7.3 Test Requirement

IEC 61000-4-4 (EN 55024) require:

5 kHz Repetition frequency

☐ ± 1.0 kV input AC power ports.

☒ ± 0.5 kV input DC power ports.

☐ ± 0.5 kV Signal ports.

☐ ± 0.5 kV for Telecommunication ports.

Performance criterion: **B**

According to special request by client:

5 kHz Repetition frequency

☒ ± 2.0 kV input DC power ports.

Performance criterion: **A**

7.4 Configuration of Measurement

7.4.1 The EUT and the auxiliary equipment were placed on a wooden table of 0.8 meters height. The size of ground plane is greater than 1 m×1 m and project beyond the EUT by at least 0.1 m on all sides. The ground plane is connected to the protective earth.

7.4.2 The EUT was connected to the power mains through a coupling device that directly couples the EFT interference signal. Each of the Line, Neutral and Protective Earth (PE) conductors was impressed with burst noise for 1 minute. Both the voltage polarities were applied for each test level. The length of power cord between the coupling device and the EUT was less than 1 meter.

7.5 Test Result

PASS.

The performance criterion after tested EN 55024:

Temperature: 22.0 °C ; Humidity: 56 % ; Atmospheric: 986 hPa ; Test Engineer: Mark

Mode 1: Full Load (Model No.: TEQ 40-7211WIR)

- ☒ ± 2.0 kV input DC power port: Line
Performance criterion: ☒ A ☐ B ☐ C
- ☒ ± 2.0 kV input DC power port: Neutral
Performance criterion: ☒ A ☐ B ☐ C
- ☒ ± 2.0 kV input DC power port: PE
Performance criterion: ☒ A ☐ B ☐ C
- ☒ ± 2.0 kV input DC power port: Line + Neutral
Performance criterion: ☒ A ☐ B ☐ C
- ☒ ± 2.0 kV input DC power port: Line + PE
Performance criterion: ☒ A ☐ B ☐ C
- ☒ ± 2.0 kV input DC power port: Neutral + PE
Performance criterion: ☒ A ☐ B ☐ C
- ☒ ± 2.0 kV input DC power port: Line + Neutral + PE
Performance criterion: ☒ A ☐ B ☐ C

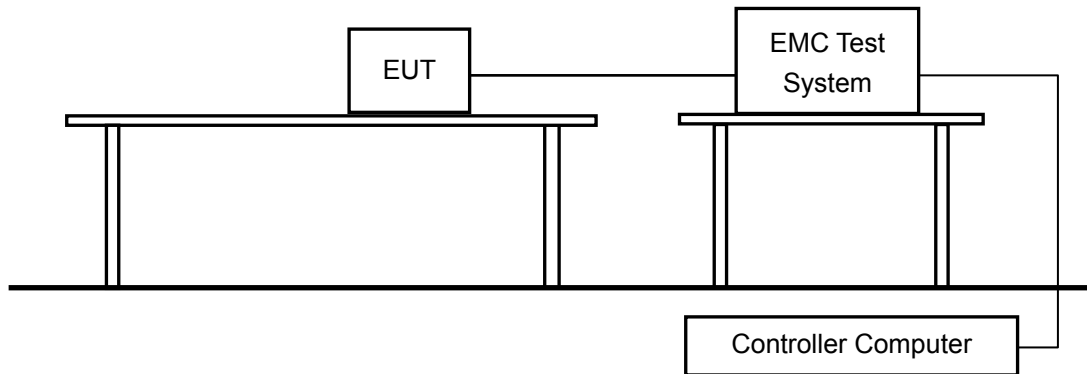
8 Surge Immunity Test (IEC 61000-4-5)

8.1 Instrument

Instrument	Manufacturer	Model	Serial No.	Next Cal. Date
EMC Pro Systems	KeyTek	EMC Pro	0003234	2017/02/26

Note: The above equipments are within the valid calibration period.

8.2 Block Diagram of Test Configuration



8.3 Test Requirement

IEC 61000-4-5 (EN 55024) require:

- ☐ Input AC power ports: ☐ Line to line: ± 1.0 kV (peak), 1.2/50 (8/20) Tr/Th μ s
☐ Line to earth (ground): ± 2.0 kV (peak), 1.2/50 (8/20) Tr/Th μ s

☒ Input DC power ports: ± 0.5 kV (peak): Line to earth, 1.2/50 (8/20) Tr/Th μ s

Performance criterion: **B**

- ☐ Signal ports: ☐ without primary protections: ± 1.0 kV (peak): 10/700 Tr/Th μ s
☐ Primary protectors: ± 4.0 kV (peak): 10/700 Tr/Th μ s

- ☐ Telecommunication ports: ☐ without primary protections: ± 1.0 kV (peak): 10/700 Tr/Th μ s
☐ Primary protectors: ± 4.0 kV (peak): 10/700 Tr/Th μ s

Performance criterion: **C**

According to special request by client:

- ☒ Input DC power ports: ± 1.0 kV (peak): Line to earth, 1.2/50 (8/20) Tr/Th μ s

Performance criterion: **A**

8.4 Configuration of Measurement

- 8.4.1 The EUT and support units were located on a wooden table 0.8 m away from ground floor.
- 8.4.2 The EUT was connected to the power mains through a coupling device that directly couples the Surge interference signal.
- 8.4.3 The surges were applied line to line and line(s) to earth. When testing line to earth the test voltage was applied successively between each of the lines and earth. Steps up to the test level specified increased the test voltage. All lower levels including the selected test level were tested. The polarity of each surge level included positive and negative test pulses.

8.5 Test Result

PASS.

The performance criterion after tested EN 55024:

Temperature: 21.0 °C ; Humidity: 41 % ; Atmospheric: 986 hPa ; Test Engineer: Vic

Mode 1: Full Load (Model No.: TEQ 40-7211WIR)

☒ ± 0.5 kV (peak) Input DC power port: Line to earth

Performance criterion: ☒ A ☐ B ☐ C

☒ ± 1.0 kV (peak) Input DC power port: Line to earth

Performance criterion: ☒ A ☐ B ☐ C

9 Radio- Frequency, Conducted Disturbances Immunity Test (IEC 61000-4-6)

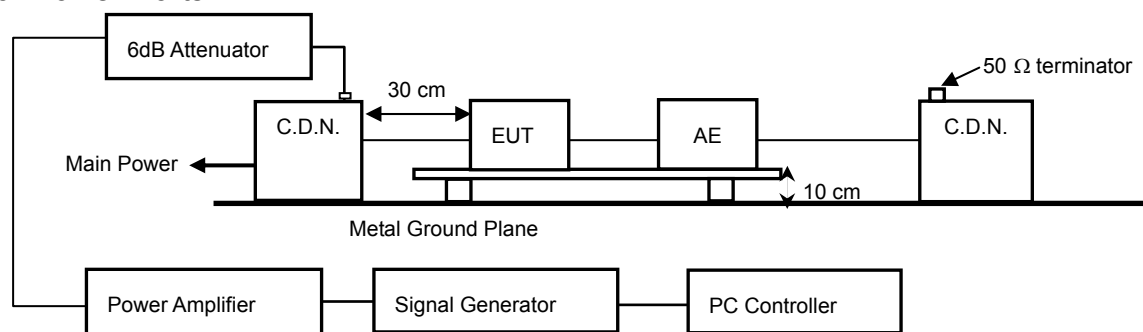
9.1 Instrument

Instrument	Manufacturer	Model	Serial No.	Next Cal. Date
Signal Generator	Marconi Instruments	2024	112246/087	2017/04/21
RF Power Amplifier	R&K	A009K101-5050R	B30850	2017/02/05
Attenuator	Microwave Device Inc.	MA-5250/6N	001052	2017/02/05
C.D.N	FCC	FCC-801-M3-25A	2045	2017/02/05
C.D.N	SCHAFFNER	M216	16394	2017/02/05

Note: The above equipments are within the valid calibration period.

9.2 Block Diagram of Test Configuration

For Power Ports.



9.3 Test Requirement

IEC 61000-4-6 (EN 55024) require:

The frequency steps: 1 %, Log sweep, Dwell time: 3.0 sec.

Frequency Range is from 0.15 to 80 MHz.

Field strength: **3 V**, 80 % AM (1 kHz)

☐ Input AC power ports.

☒ Input DC power ports.

☐ Signal ports.

☐ Telecommunication ports.

Performance criterion: **A**

According to special request by client:

The frequency steps: 1 %, Log sweep, Dwell time: 3.0 sec.

Frequency Range is from 0.15 to 80 MHz.

Field strength: **10 V**, 80 % AM (1 kHz)

☒ Input DC power ports.

Performance criterion: **A**

9.4 Configuration of Measurement

- 9.4.1 The EUT was placed on a table of is 0.1 m height. In Semi-Anechoic chamber A Ground reference plane was placed on the table and a 0.1 meter insulating support was inserted between the EUT and Ground reference plane.
- 9.4.2 The EUT was connected to the power mains through a Coupling and Decoupling Networks (CDN).
- 9.4.3 The test was performed with the test generator connected to each of the coupling and decoupling devices in turn while the other non-excited RF input ports of the coupling devices were terminated by a 50 Ω terminator.
- 9.4.4 The frequency range was swept from 150 kHz to 80 MHz.using the signal levels established during the setting process, and without the disturbance signal 80 % amplitude modulated with a 1 kHz sine wave, pausing to adjust the RF signal level or to switch coupling devices as necessary. The rate of sweep was less than 1.5×10^{-3} decades/s. And the step size of the frequency sweep was also less than 1 % of the start and thereafter 1 % of the preceding frequency value. The dwell time at each frequency was more than the time necessary for the EUT to be excited, and able to respond.
- 9.4.5 The EUT was fully excised during the testing and all the selected excise modes were fully interrogated for susceptibility.

9.5 Test Result

PASS.

The performance criterion after tested EN 55024:

Temperature: 21.0 °C ; Humidity: 41 % ; Atmospheric: 986 hPa ; Test Engineer: Vic

Mode 1: Full Load (Model No.: TEQ 40-7211WIR)

Frequency range: 0.15 to 80 MHz, Field strength: 10 V, 80 % AM (1 kHz),

☒ Input DC power port.

Performance criterion: ☒ A ☐ B ☐ C

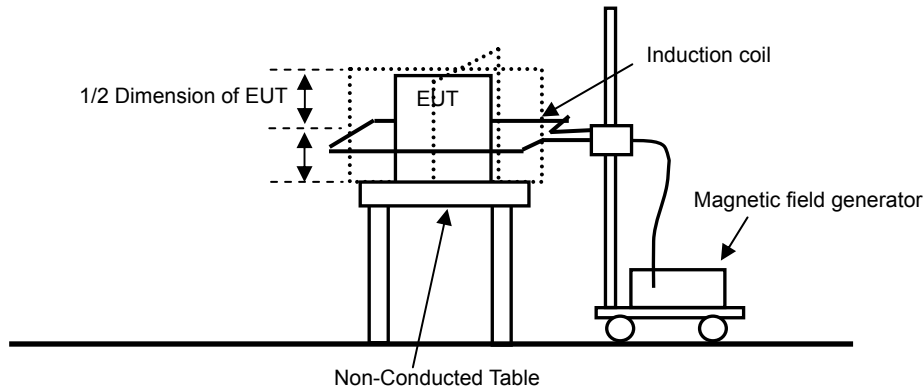
10 Power Frequency Magnetic Field Immunity Test (IEC 61000-4-8)

10.1 Instrument

Instrument	Manufacturer	Model	Serial No.	Next Cal. Date
Magnetic field generator	PMM	PMM1008	0000J00301	2017/06/19

Note: The above equipments are within the valid calibration period.

10.2 Block Diagram of Test Configuration



10.3 Test Requirement

IEC 61000-4-8 (EN 55024) require:

Power Frequency is **50** Hz.

Magnetic field strength: **1** A/m

Performance criterion: **A**

According to special request by client:

Power Frequency is **50** Hz.

Magnetic field strength: **100** A/m

Magnetic field strength: **1000** A/m (1 sec)

Performance criterion: **A**

10.4 Configuration of Measurement

10.4.1 The equipment is configured and connected to satisfy its functional requirements.

10.4.2 All cables shall be exposed to the magnetic field for 1 m of their length.

10.4.3 Different induction coils may be selected for testing in the different orthogonal directions.

10.5 Test Result

PASS.

The performance criterion after tested EN 55024:

Temperature: 21.0 °C ; Humidity: 53 % ; Atmospheric: 986 hPa ; Test Engineer: Vic

Mode 1: Full Load (Model No.: TEQ 40-7211WIR)

☒ Power Frequency is 50 Hz, Magnetic field strength: **100** A/m

Performance criterion: ☒ **A** ☐ **B** ☐ **C**

☒ Power Frequency is 50 Hz, Magnetic field strength: **1000** A/m (1 sec)

Performance criterion: ☒ **A** ☐ **B** ☐ **C**

11 Photographs of Test

11.1 Conducted Emission Measurement



Front View



Rear View

11.2 Radiated Emission Measurement

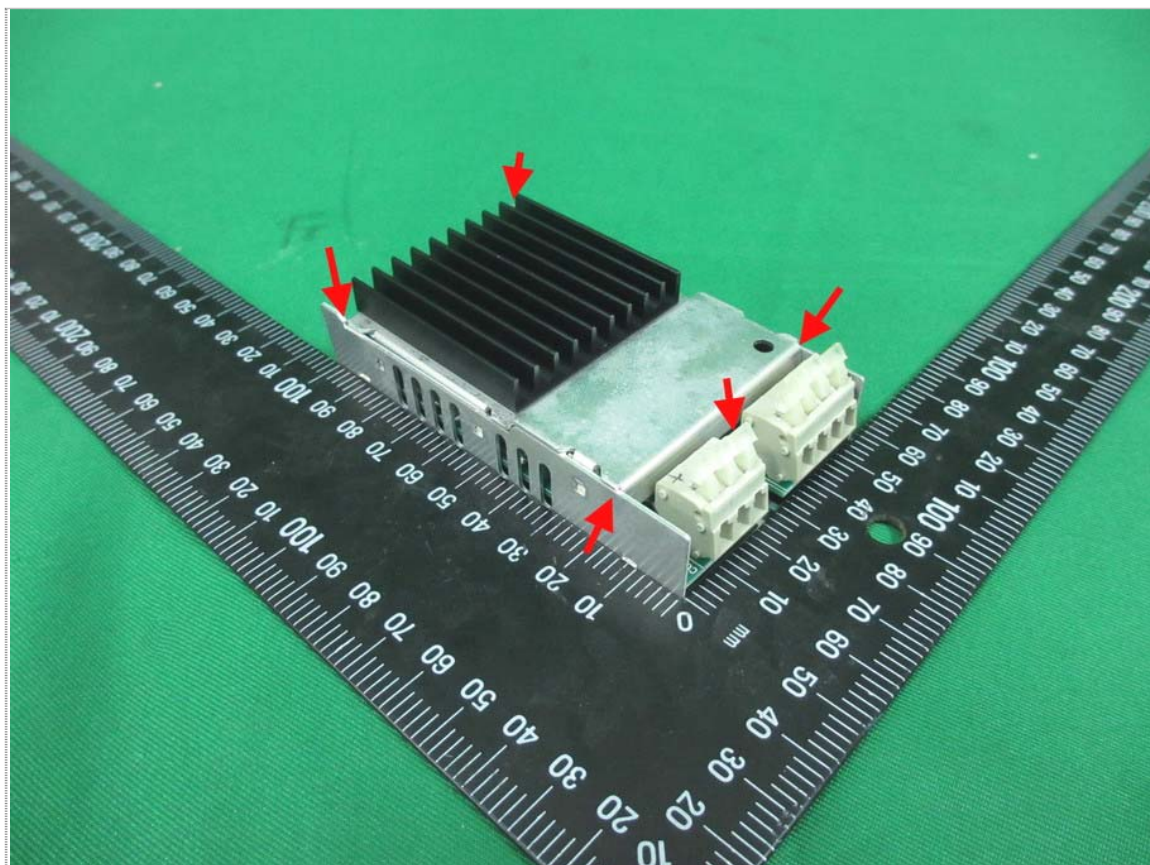


Front View

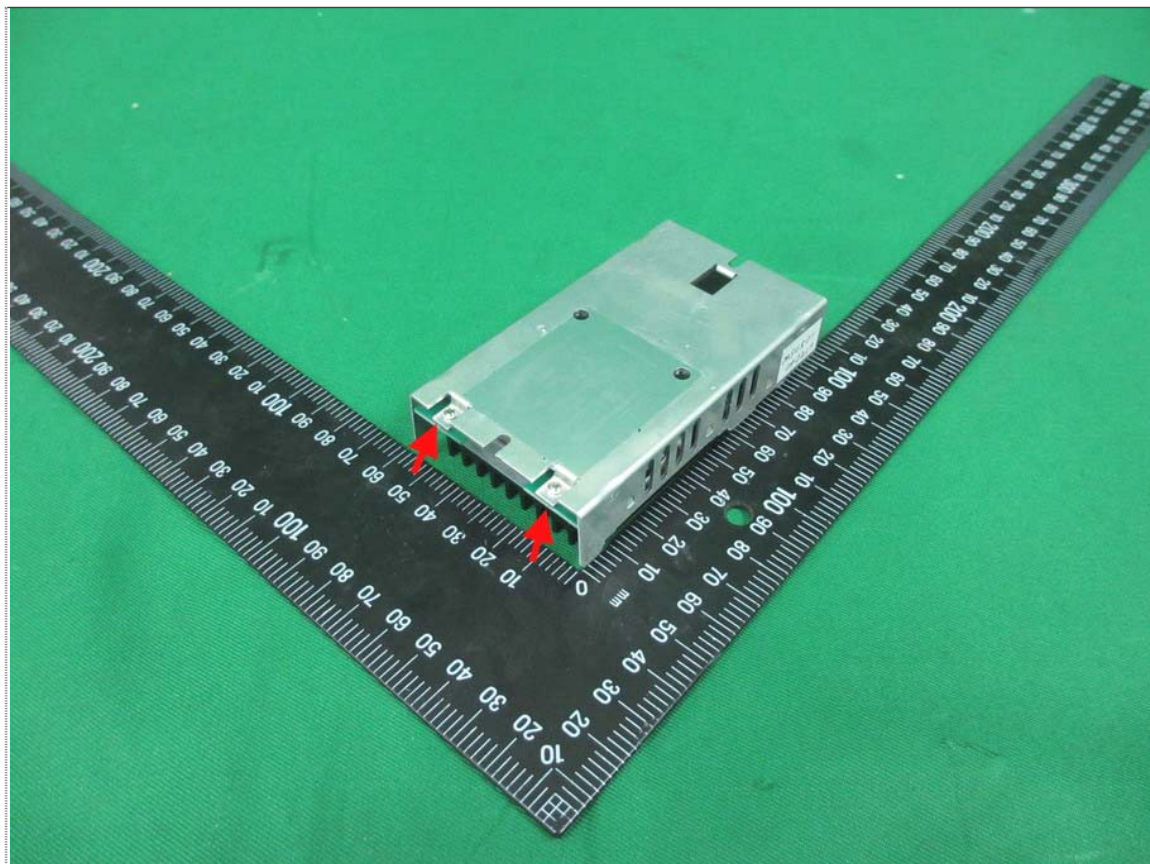


Rear View

11.3 Electrostatic Discharge Test Point

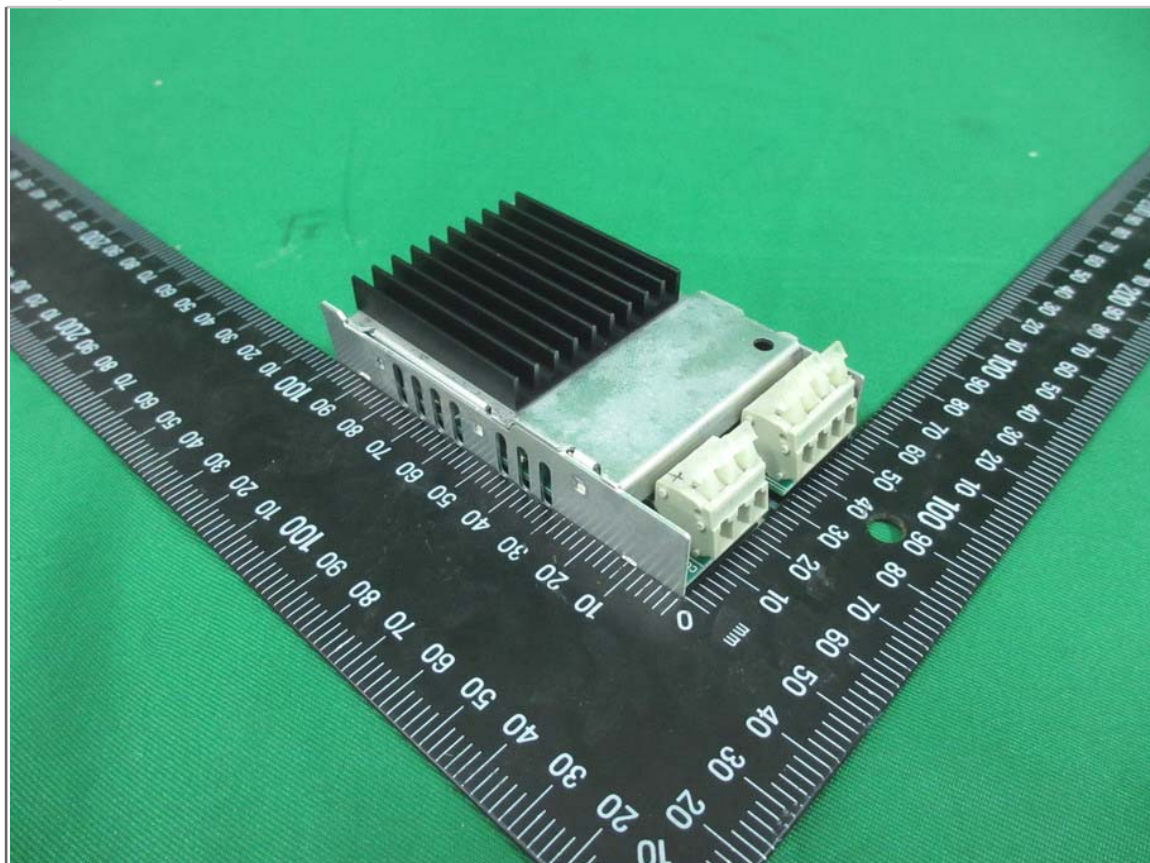


Discharge Point-1 (Red: Contact Discharge)

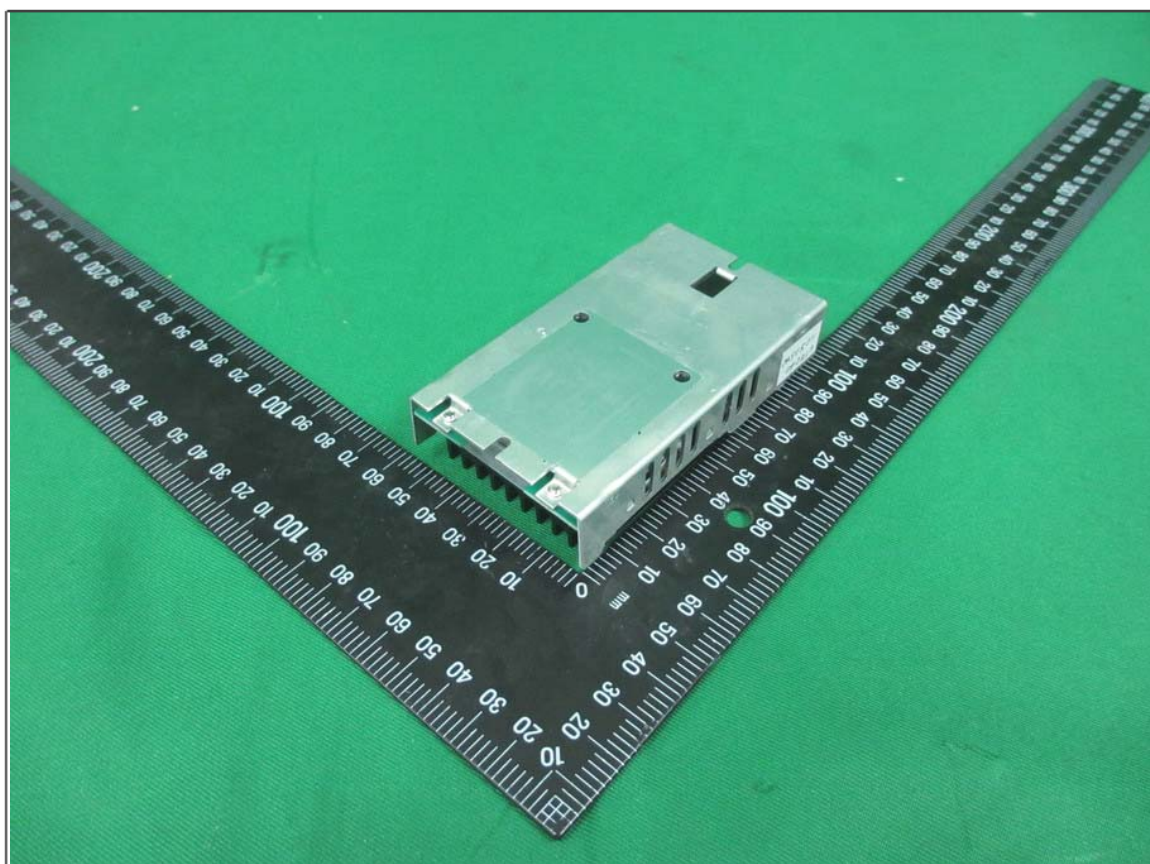


Discharge Point-2 (Red: Contact Discharge)

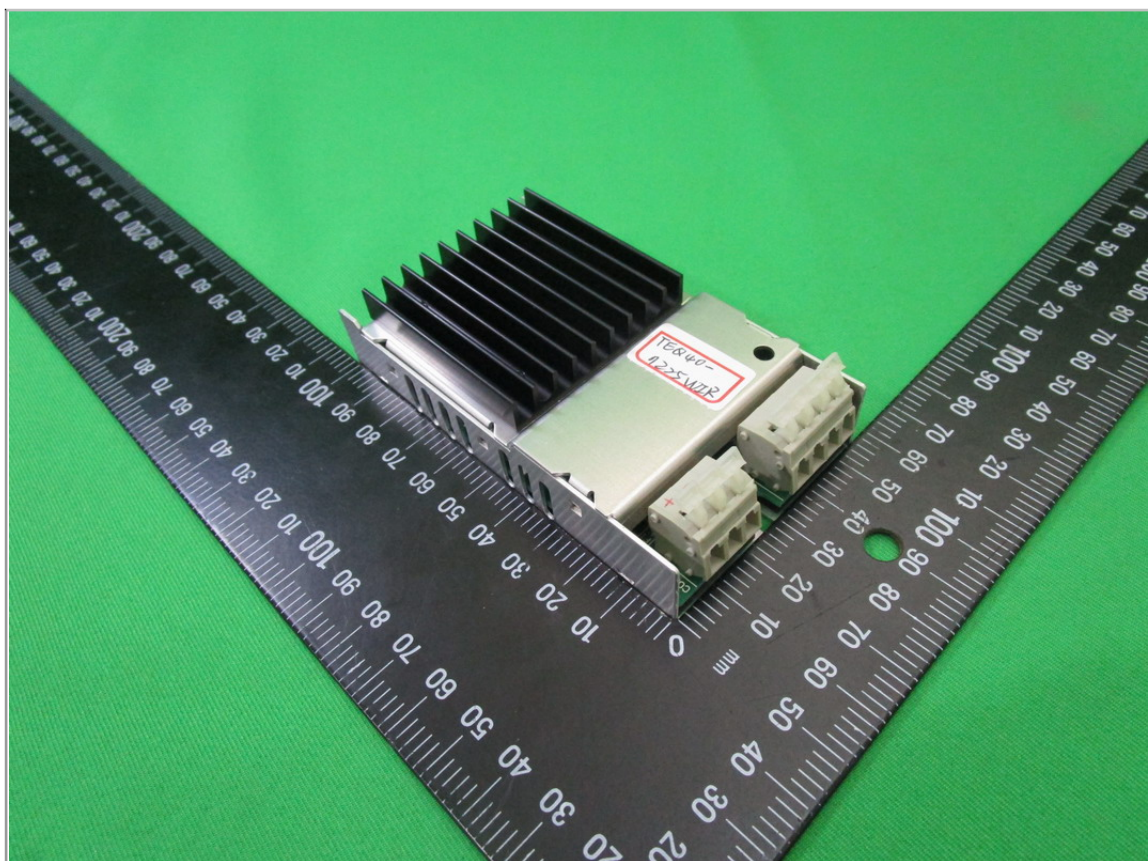
12 Photographs of EUT



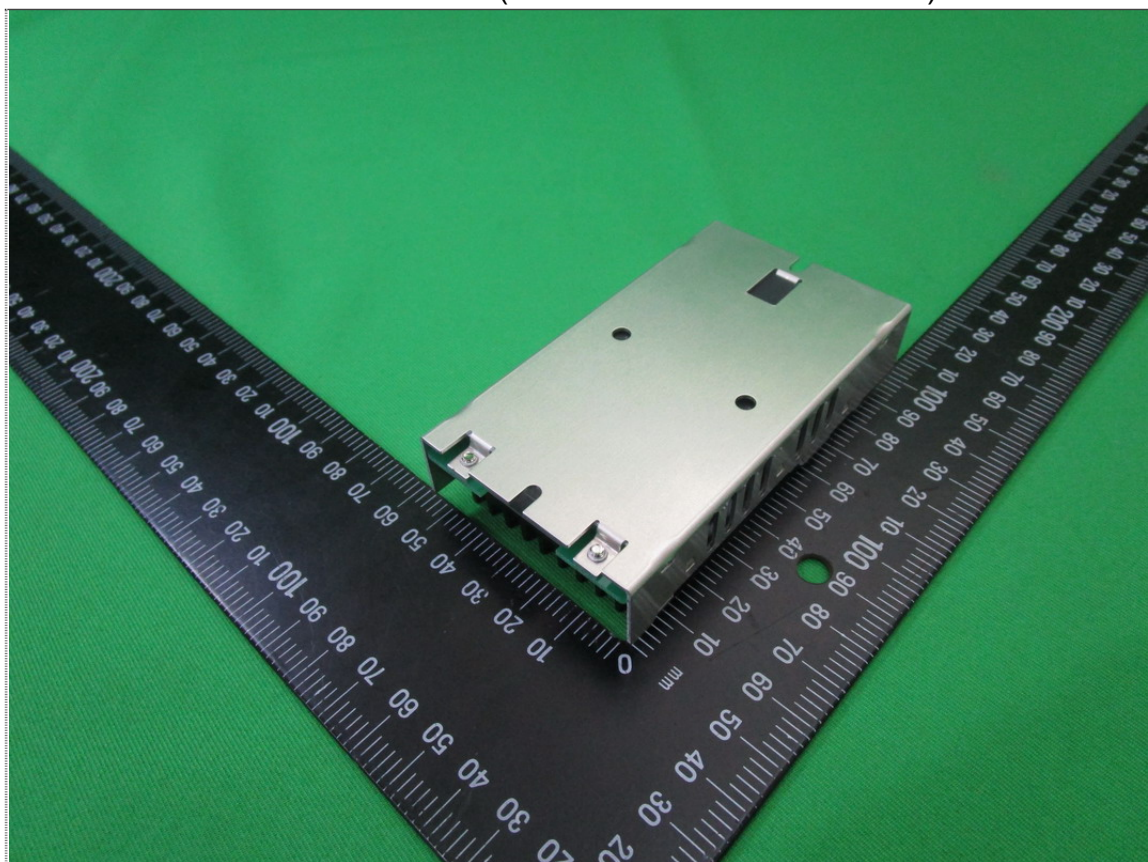
Front View of EUT



Rear View of EUT



Front View of EUT (Model No.: TEQ 40-7225WIR)



Rear View of EUT (Model No.: TEQ 40-7225WIR)