

Annex 1: Measurement diagrams 21-1-0062601T04a-C03-Annex1

Number of pages:	7	Date of Report:	2022-Nov-02
Testing company:	CETECOM GmbH Im Teelbruch 116 45219 Essen Germany Tel. + 49 (0) 20 54 / 95 19-0 Fax: + 49 (0) 20 54 / 95 19-150	Applicant:	KOSTAL Industrie Elektrik GmbH
Product: Model:	Frequency inverter Inveor MD / IV01 PW15 LP04 AP01 GH09 DK05 CO00		
FCC ID:	SX4INVEOR-M-BG-D	IC:	--
Testing has been carried out in accordance with:	FCC Regulations Title 47 CFR, Chapter I FCC Regulations, Subchapter A Subpart B: §15.107 & §15.109 (Class A limits) Conducted emissions in the frequency range 0.15 to 30 MHz Radiated emissions in the frequency range 30 to 1000 MHz		



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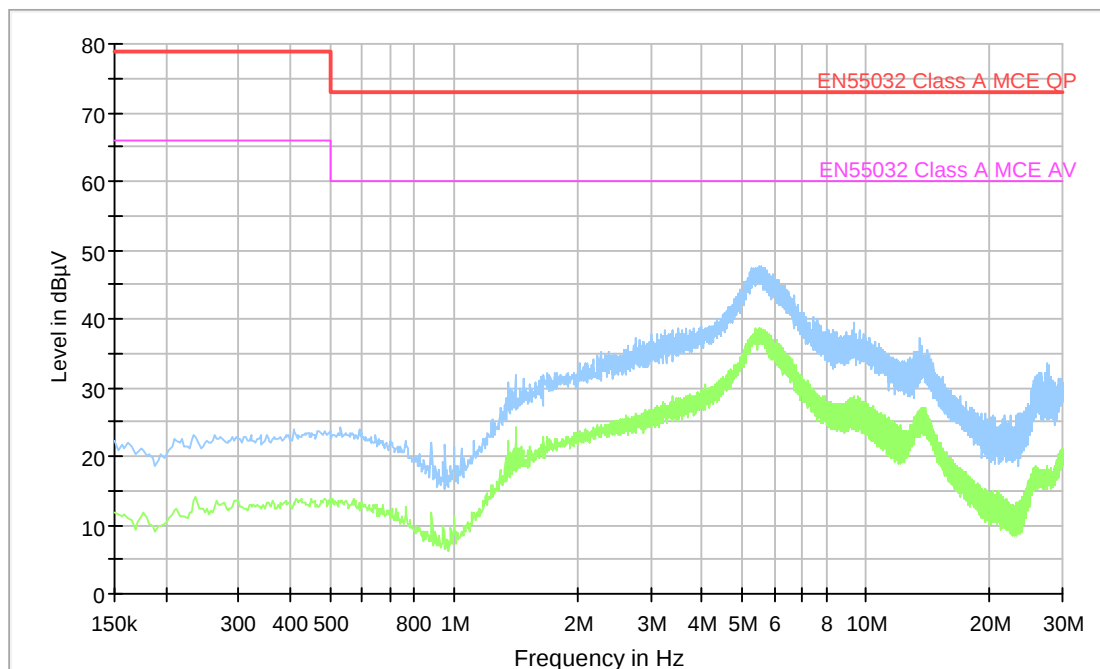
1 Measurement diagrams

1.01

Common Information

Test Description: Mains conducted emission
Test Site & Location: Shielded Room 1 (Lab 1); CETECOM GmbH Düsseldorf
Version of Testsoftware: EMC32 V10.50.40
Test Specification: FCC 15B, Class A
Environmental Conditions: Humidity: 36 %rH; Temperature: 23.2 °C; Pressure: 1018 hPa
Operating Mode: 10 Hz
Operator: GWe
Comment: N

Full Spectrum



Preview Result 2-AVG
Critical_Freqs PK+
Final_Result QPK

Preview Result 1-PK+
EN55032 Class A MCE QP
Final_Result AVG

Critical_Freqs AVG
EN55032 Class A MCE AV

Critical_Frequency

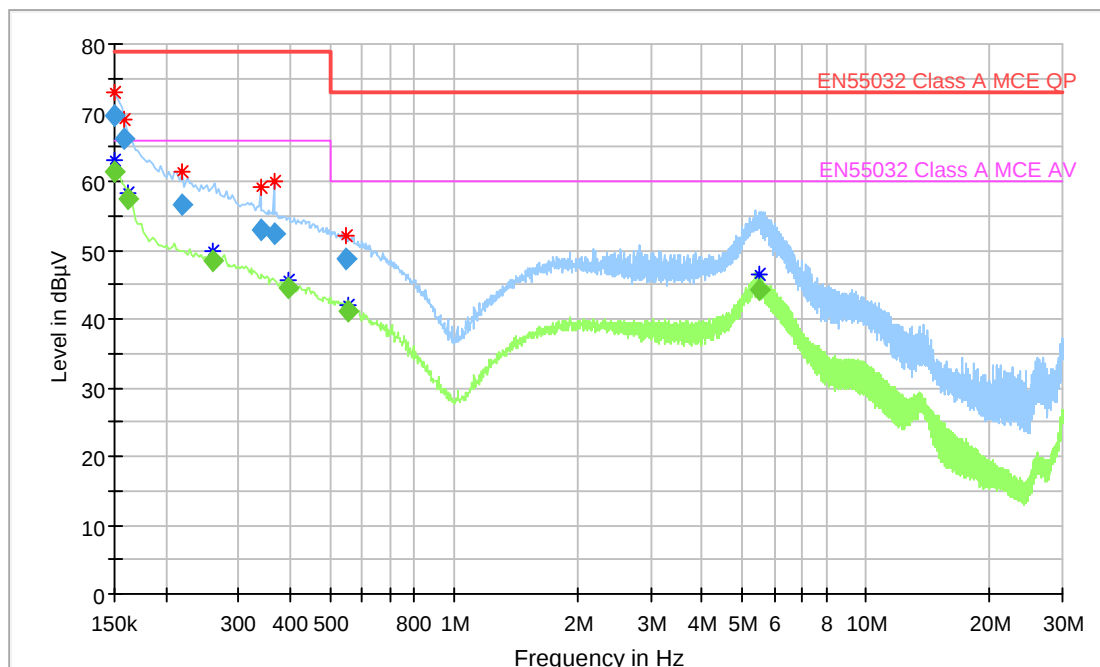
Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
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1.02_L1

Common Information

Test Description:	Mains conducted emission
Test Site & Location:	Shielded Room 1 (Lab 1); CETECOM GmbH Düsseldorf
Version of Testsoftware:	EMC32 V10.50.40
Test Specification:	FCC 15B, Class A
Environmental Conditions:	Humidity: 36 %rH; Temperature: 23.2 °C; Pressure: 1018 hPa
Operating Mode:	10 Hz
Operator:	GWe
Comment:	L1

Full Spectrum



— Preview Result 2-AVG	— Preview Result 1-PK+	* Critical_Freqs AVG
* Critical_Freqs PK+	— EN55032 Class A MCE QP	— EN55032 Class A MCE AV
◆ Final_Result QPK	◆ Final_Result AVG	

Final_Result

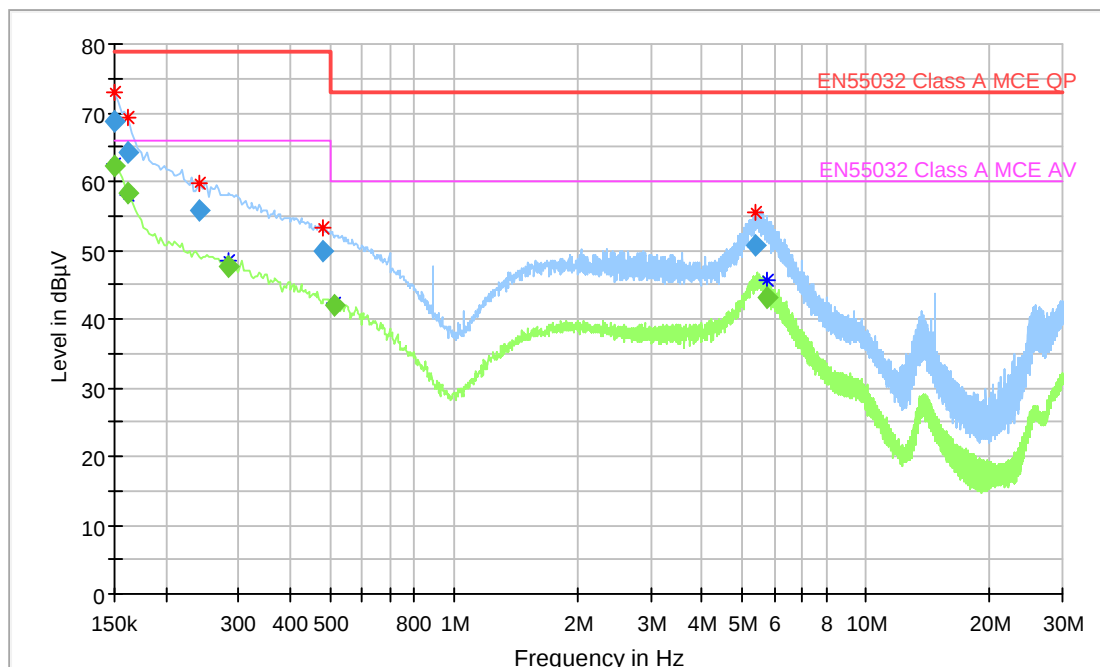
Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr (dB)
0.150000	---	61.49	66.00	4.52	1000.0	9.000	L1	0.1
0.150000	69.46	---	79.00	9.54	1000.0	9.000	L1	0.1
0.159000	66.07	---	79.00	12.93	1000.0	9.000	L1	0.1
0.162000	---	57.36	66.00	8.64	1000.0	9.000	L1	0.1
0.219000	56.59	---	79.00	22.41	1000.0	9.000	L1	0.1
0.261000	---	48.49	66.00	17.51	1000.0	9.000	L1	0.1
0.339000	52.90	---	79.00	26.10	1000.0	9.000	L1	0.1
0.366000	52.36	---	79.00	26.64	1000.0	9.000	L1	0.1
0.396000	---	44.43	66.00	21.57	1000.0	9.000	L1	0.1
0.549000	48.74	---	73.00	24.26	1000.0	9.000	L1	0.1
0.552000	---	41.17	60.00	18.83	1000.0	9.000	L1	0.1
5.514000	---	44.15	60.00	15.85	1000.0	9.000	L1	0.3

1.03

Common Information

Test Description:	Mains conducted emission
Test Site & Location:	Shielded Room 1 (Lab 1); CETECOM GmbH Düsseldorf
Version of Testsoftware:	EMC32 V10.50.40
Test Specification:	FCC 15B, Class A
Environmental Conditions:	Humidity: 36 %rH; Temperature: 23.2 °C; Pressure: 1018 hPa
Operating Mode:	10 Hz
Operator:	GWe
Comment:	L2

Full Spectrum



— Preview Result 2-AVG	— Preview Result 1-PK+	* Critical_Freqs AVG
* Critical_Freqs PK+	— EN55032 Class A MCE QP	— EN55032 Class A MCE AV
◆ Final_Result QPK	◆ Final_Result AVG	

Final_Result

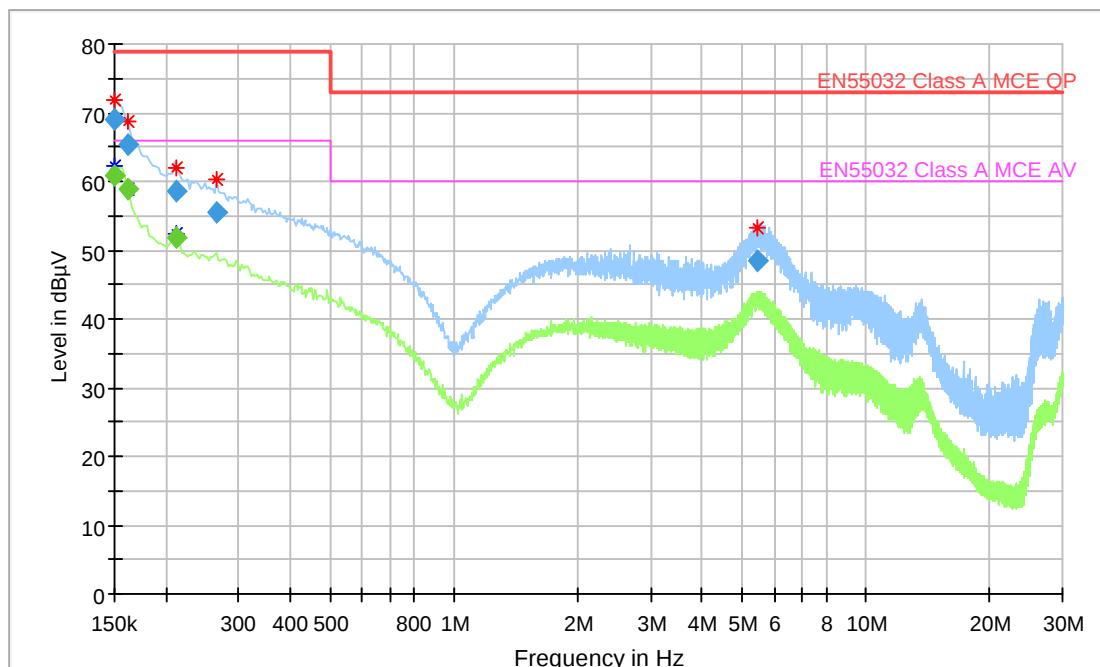
Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr (dB)
0.150000	---	62.21	66.00	3.79	1000.0	9.000	L2	0.1
0.150000	68.61	---	79.00	10.39	1000.0	9.000	L2	0.1
0.162000	---	58.35	66.00	7.65	1000.0	9.000	L2	0.1
0.162000	64.33	---	79.00	14.67	1000.0	9.000	L2	0.1
0.240000	55.65	---	79.00	23.35	1000.0	9.000	L2	0.1
0.282000	---	47.50	66.00	18.50	1000.0	9.000	L2	0.1
0.480000	49.89	---	79.00	29.11	1000.0	9.000	L2	0.1
0.516000	---	41.92	60.00	18.08	1000.0	9.000	L2	0.1
5.406000	50.67	---	73.00	22.33	1000.0	9.000	L2	0.3
5.736000	---	43.13	60.00	16.87	1000.0	9.000	L2	0.3

1.04_L3

Common Information

Test Description:	Mains conducted emission
Test Site & Location:	Shielded Room 1 (Lab 1); CETECOM GmbH Düsseldorf
Version of Testsoftware:	EMC32 V10.50.40
Test Specification:	FCC 15B, Class A
Environmental Conditions:	Humidity: 36 %rH; Temperature: 23.2 °C; Pressure: 1018 hPa
Operating Mode:	10 Hz
Operator:	GWe
Comment:	

Full Spectrum



— Preview Result 2-AVG	— Preview Result 1-PK+	* Critical_Freqs AVG
* Critical_Freqs PK+	— EN55032 Class A MCE QP	— EN55032 Class A MCE AV
◆ Final_Result QPK	◆ Final_Result AVG	

Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr (dB)
0.150000	---	60.93	66.00	5.07	1000.0	9.000	L3	0.1
0.150000	68.94	---	79.00	10.06	1000.0	9.000	L3	0.1
0.162000	---	58.94	66.00	7.06	1000.0	9.000	L3	0.1
0.162000	65.33	---	79.00	13.67	1000.0	9.000	L3	0.1
0.213000	58.49	---	79.00	20.51	1000.0	9.000	L3	0.1
0.213000	---	51.70	66.00	14.30	1000.0	9.000	L3	0.1
0.267000	55.60	---	79.00	23.40	1000.0	9.000	L3	0.1
5.472000	48.41	---	73.00	24.59	1000.0	9.000	L3	0.3

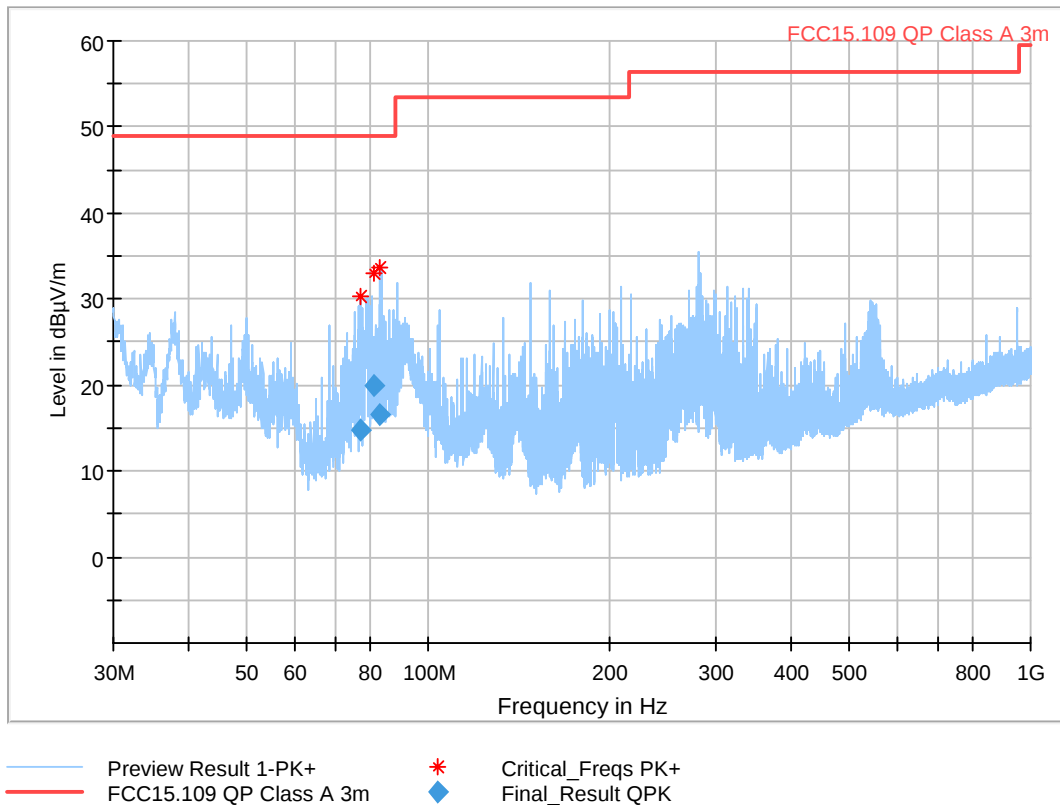
3.01

Date: 31.05.2021 Page 1 of 2

Test Description: Electric Fieldstrength Measurement above 1GHz
 Test Site & Location: Semi Anechoic Chamber 2 (SAC); CETECOM GmbH Düsseldorf
 Version of Testsoftware: EMC32 V10.0.0
 Test Specification: FCC15.109, class A; RSS-Gen.: Issue 4
 Operating Mode: 25Hz
 Used Filter: none
 Measured side(s): front, right, rear, left
 Distance correction: no, measurement in 3m Distance with 3m Limits
 Environmental conditions: Humidity: 31% rH; Temperature:24.0 °C; Pressure: 1020 hPa
 Operator: A. Ueberbach
 Comments:

Full Spectrum

Full Spectrum



Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
77.104000	14.74	40.00	25.26	120.000	221.0	V	31.0	10.8
81.180000	19.96	40.00	20.04	120.000	163.0	V	202.0	11.2
83.116000	16.45	40.00	23.55	120.000	188.0	V	293.0	11.2

End Of Annex 1