

Annex 1: Measurement diagrams to Test Report 19-1-0069003T31a-C1-A1

Number of pages:	7	Date of Report:	2020-Nov-19
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:	WAGO KONTAKTTECHNIK GMBH & CO. KG
Test Object / Tested Device(s):	16DIO FLD PN DC 24V 2.0A WideLine 765-1102/0100-0000 WAGO I/O System Field		
FCC ID:	2AKUE-WIDELINE	IC:	22322-WIDELINE
Testing has been carried out in accordance with:	FCC Regulations PART 15—RADIO FREQUENCY DEVICES Subpart B Radiated emissions in the frequency range 30 to 1000 MHz Radiated emissions in the frequency range 1 to 6 GHz Radiated emissions in the frequency range 1 to 12.75 GHz		

1 Measurement diagrams

Diagram No. 3.01 FCC

1.1 Radiated emissions in the frequency range 30 to 1000 MHz

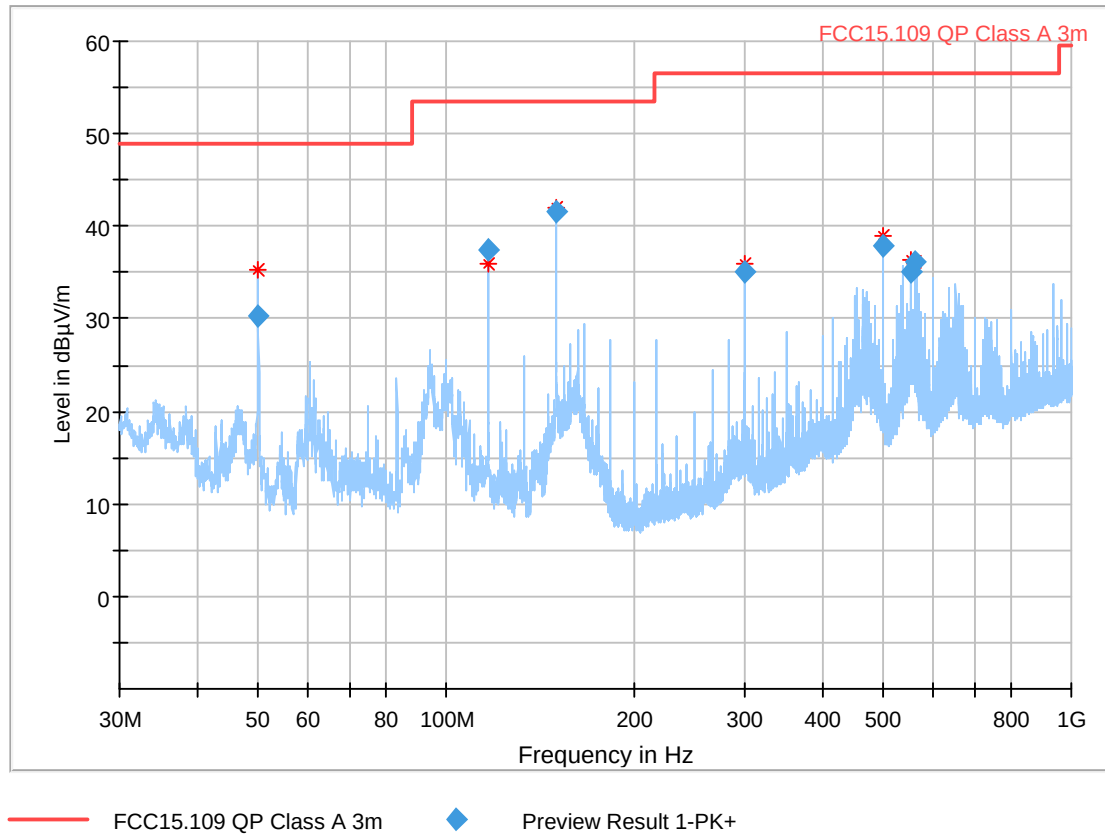
Test Description:	Electric Field Strength Measurement
Test Site & Location:	Semi Anechoic Chamber 2 (SAC5) with 3m measurement distance
Version of Testsoftware:	EMC32 V10.0.0
Test Specification:	FCC15.109, class A; RSS-Gen.: Issue 4
Operating Mode:	Continuous Data transmission between the Test plate and EUT. Permanent Bluetooth connection (Mobile Phone + EUT).
Environmental conditions:	Humidity: 49 %; Temperature: 21.6 °C; Air pressure: 996 hPa
Operator:	AUe
Comments:	-

EUT Information

Manufacturer:	WAGO Kontakttechnik GmbH & Co. KG
EuT:	16DIO FLD PN DC 24V 2.0A – WideLine 765-1102/0100-0000
-----	-----
HW Version:	Rev. 3
SW Version:	V1.0.2.0
Firmware:	BT-FW: V1.2.0.0

Full Spectrum

Full Spectrum



Preliminary Result (SAC 3m distance)

Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
50.000000	30.40	49.00	18.60	120.000	104.0	V	169.0	7.9
116.664000	37.53	53.50	15.97	120.000	100.0	V	-19.0	12.5
150.000000	41.65	53.50	11.85	120.000	104.0	V	120.0	10.0
299.996000	34.97	56.50	21.53	120.000	160.0	V	351.0	12.9
499.996000	37.93	56.50	18.57	120.000	119.0	V	62.0	17.5
554.076000	35.16	56.50	21.34	120.000	119.0	H	182.0	18.1
562.492000	36.11	56.50	20.39	120.000	100.0	V	202.0	18.3

Final Result (OATS – 10 m distance)

Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
50.000000	29.02	39.00	9.98	120.000	250.0	V	-170.0	15.2
116.664000	28.92	43.50	14.58	120.000	212.0	V	-147.0	16.8
150.000000	35.23	43.50	8.27	120.000	106.0	V	-30.0	19.1
299.996000	31.56	46.40	14.84	120.000	250.0	V	-170.0	15.2
499.996000	19.29	46.40	27.11	120.000	227.0	V	156.0	25.3
554.076000	20.51	46.40	25.89	120.000	136.0	H	-61.0	26.2
562.492000	21.07	46.40	25.33	120.000	234.0	V	104.0	26.5

Diagram No. 4.01 FCC

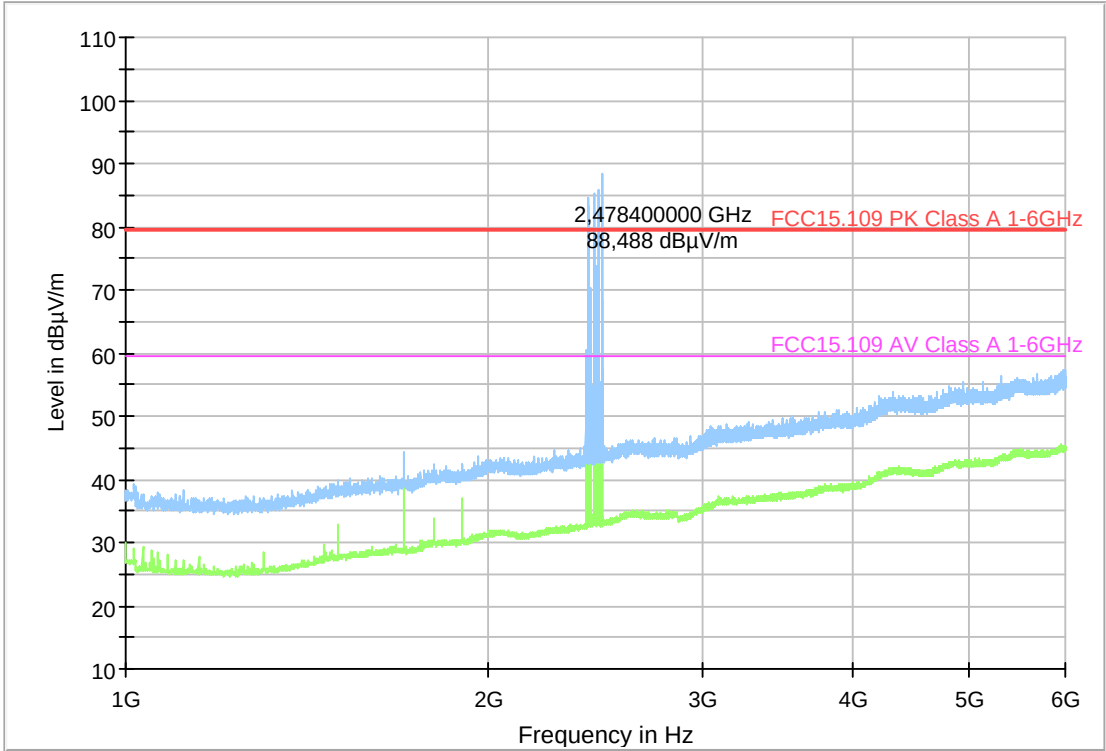
1.2 Radiated emissions in the frequency range 1 to 6 GHz

Test Description:	Electric Field Strength Measurement
Test Site & Location:	Semi Anechoic Chamber 2 (SAC5) with 3m measurement distance
Version of Testsoftware:	EMC32 V10.0.0
Test Specification:	FCC15.109, class A; RSS-Gen.: Issue 4
Operating Mode:	Continuous Data transmission between the Test plate and EUT. Permanent Bluetooth connection (Mobile Phone + EUT).
Environmental conditions:	Humidity: 49 %; Temperature: 21.6 °C; Air pressure: 996 hPa
Operator:	AUe
Comments:	-

EUT Information

Manufacturer:	WAGO Kontakttechnik GmbH & Co. KG
EuT:	16DIO FLD PN DC 24V 2.0A – WideLine 765-1102/0100-0000
-----	-----
HW Version:	Rev. 3
SW Version:	V1.0.2.0
Firmware:	BT-FW: V1.2.0.0

Full Spectrum



- *

◆

Preview Result 2-AVG

FCC15.109 AV Class A 1-6GHz

FCC15B_RSS_Gen_PK
- ◆

FCC15.109 PK Class A 1-6GHz

Critical_Freqs PK+

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/
No conspicuous frequencies detected – Margin to limit > 10 dB (Peak/Average)										

- The Peak at 2.4 GHz is a wanted frequency for Bluetooth signalling.

Diagram No. 4.02 FCC

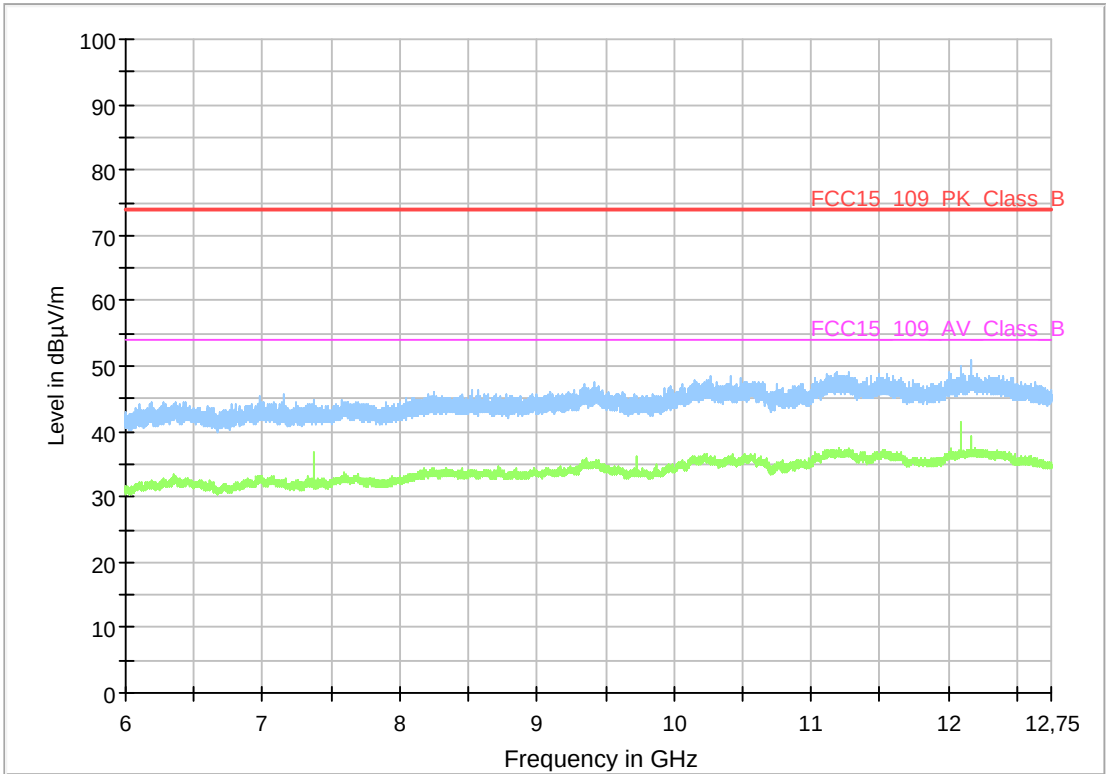
1.3 Radiated emissions in the frequency range 6 to 12.75 GHz

Test Description:	Electric Field Strength Measurement
Test Site & Location:	Semi Anechoic Chamber 2 (SAC5) with 3m measurement distance
Version of Testsoftware:	EMC32 V10.0.0
Test Specification:	FCC15.109, class A; RSS-Gen.: Issue 4
Operating Mode:	Continuous Data transmission between the Test plate and EUT. Permanent Bluetooth connection (Mobile Phone + EUT).
Environmental conditions:	Humidity: 49 %; Temperature: 21.6 °C; Air pressure: 996 hPa
Operator:	AUe
Comments:	-

EUT Information

Manufacturer:	WAGO Kontakttechnik GmbH & Co. KG
EuT:	16DIO FLD PN DC 24V 2.0A – WideLine 765-1102/0100-0000
-----	-----
HW Version:	Rev. 3
SW Version:	V1.0.2.0
Firmware:	BT-FW: V1.2.0.0

Full Spectrum



- 


Preview Result 2-AVG
Critical_Freqs PK+
- 


FCC15_109_PK_Class_B
FCC15_109_PK_Class_B
- 

FCC15_109_AV_Class_B

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/
No conspicuous frequencies detected – Margin to limit > 10 dB (Peak/Average)										

End Of Annex 1