SNAS
Reg. No. 029/S-066

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TEST REPORT

No.: 44/21/SL EMK
year: 2021

Applicant: **Vutlan s.r.o**
ul. Svornosti 43, 821 06 Bratislava, Slovak Republic

Tested equipment: **Monitoring system**
Type: VT960i

SLOVENSKÁ TECHNICKÁ UNIVERZITA
BRATISLAVA
FAKULTA ELEKTROTECHNIKY A INFORMATIKY
-Akreditovaná skúšobňa-
Ilkovičova č. 3, 812 19 Bratislava

Approved by:
Assoc. Prof. K. Kováč, PhD.
Head of Test house of FEI STU

Bratislava 22. 9. 2021

Notes: All test results are valid only for the tested equipment. Any publication of the test report content is not allowed without customer confirmation. The test report may be copied only as a whole, otherwise only with confirmation of Test house of FEI STU in Bratislava. This test report is issued in English language.

Test subject (EUT): **Monitoring system, type: VT960i**

Serial number: **Prototype**

Manufacturer: **Vutlan s.r.o., ul. Svornosti 43, 821 06 Bratislava, Slovak Republic**

Test: **Measurement of emissions according to the standards EN IEC 61000-6-3:2021 and EN 55032:2015 and immunity tests according to the standards EN IEC 61000-6-1:2019 and EN 55035:2017**

Applicant: **Vutlan s.r.o., ul. Svornosti 43, 821 06 Bratislava, Slovak Republic**

Date of test sample submission: **7. 9. 2021**

Number of tested samples: **1**

Date of measurement: **7. 9. - 8. 9. 2021**

Place of measurement: **EMC Test Laboratory of SFEI STU Bratislava**

Test report contains:	
text pages:	16
tables:	8
appendices:	2
figures:	7

Distribution:	**Number of pcs**
SFEI STU:	1 pc
applicant:	1 pc

Conditions of measurements and tests:

Identification of test equipment is shown in Fig. 1.

Measured set containing:
- Monitoring system, type VT960i connected to power line by cable, 1.3 m long,
- USB cable, 0.8 m long, connected to USB port of EUT,
- LAN cable, 1.5 m long connected to LAN port of EUT and PC,
- 2 wire cable, 1 m long, connected to Relay port of EUT,
- 2 wire cable, 1 m long, connected to Dry contact In port of EUT,
- 2 wire cable, 1 m long, connected to Dry contact Out port of EUT,
- 2 wire cable, 1 m long, connected to Output 12V port of EUT,
- VT408 expanding unit for CAN connected to CAN port of EUT, by cable 3 m long,
- VT490 temperature and humidity sensor connected to VT408, by cable 1 m long,
- VT500 temperature sensor connected to Sensor port (A1) of EUT, by cable 3 m long,
- VT510 humidity sensor connected to Sensor port (A2) of EUT, by cable 3 m long,
- VT540 vibration sensor connected to Sensor port (A3) of EUT, by cable 3 m long,
- VT530 door-contact sensor connected to Sensor port (A4) of EUT, by cable 3 m long,
- VT560 fire sensor connected to Sensor port (A5) of EUT, by cable 3 m long,
- Notebook (PC) with testing software.

Explanation: If the measured set was modified due to any measurement conditions, it is noticed on the page corresponding to the measurement or the test.

Power supply voltage: 230 V / AC

Atmospheric conditions: Temperature: (23 ÷ 24) °C
Rel. humidity: (38 ÷ 41) %

Test results summary:

Table 1: Results of emission measurements.

No.	Measurement	Method / Configuration of measured set	Limit	Measurement result	Page
1	Conducted emissions	EN 55016-2-1 EN 55032	EN 55032 EN IEC 61000-6-3	**PASS**	5
2	Radiated emissions	EN 55016-2-3 EN 55032	EN 55032 EN IEC 61000-6-3	**PASS**	6

Conclusion: **The tested equipment complies with the requirements set by the standards EN IEC 61000-6-3:2021 and EN 55032:2015 of electromagnetic interference of equipment within the range shown in the Table 1.**

Table 2: Results of immunity tests.

No.	Immunity test against	Method	Test level; conditions / Function criterion		Page
			Requests of standard	Result	
1	Electrostatic discharges	EN 61000-4-2	±4 kV; contact - indirect / B ±4 kV; contact - direct / B ±8 kV; air / B	**PASS, A**	7
2	Electromagnetic field	EN 61000-4-3	3 V/m; (80 ÷ 1000) MHz; AM / A 3 V/m; (1.0 ÷ 2.0) GHz; AM / A 1 V/m; (2.0 ÷ 2.7) GHz; AM / A	**PASS, A**	8
3	EFT/Burst pulses	EN 61000-4-4	±1 kV; Power AC / B ±0.5 kV; LAN / B ±0.5 kV; CAN / B ±0.5 kV; Sensor (A2) / B ±0.5 kV; Sensor (A4) / B ±0.5 kV; Relay / B ±0.5 kV; Dry cont. In / B ±0.5 kV; Dry cont. Out / B ±0.5 kV; Output 12V / B	**PASS, A**	9
4	SURGE pulses	EN 61000-4-5	±1 kV; L - N; 2 Ω / B ±2 kV; L - PE; 12 Ω / B ±2 kV; N - PE; 12 Ω / B	**PASS, A**	10

Table 2 (continue): Results of immunity tests.

No.	Immunity test against	Method	Test level; conditions / Function criterion		Page
			Requests of standard	Result	
5	Conducted interference	EN 61000-4-6	3 V; (0.15 ÷ 80) MHz; Power / A 3 V; (0.15 ÷ 80) MHz; LAN / A 3 V; (0.15 ÷ 80) MHz; CAN / A 3 V; (0.15 ÷ 80) MHz; Sensor A2 / A 3 V; (0.15 ÷ 80) MHz; Sensor A4 / A 3 V; (0.15 ÷ 80) MHz; Relay / A 3 V; (0.15 ÷ 80) MHz; Dry cont. In / A 3 V; (0.15 ÷ 80) MHz; Dry cont. Out / A 3 V; (0.15 ÷ 80) MHz; Output 12V / A	**PASS, A**	11
6	Power failures	EN 61000-4-11	Drop of 100%; 0,5 per. / B Drop of 100%; 1 per. / B Drop of 30%; 25 per. / C Drop of 100%; 250 per. / C	**PASS, A** **PASS, A** **PASS, A** **PASS, C**	12

The behaviour of the equipment, in terms of criterion of function compatibility, was established on the basis of specifications of the applicant.

Criteria used for function compatibility (short version):

Criterion A: The equipment continues to operate as intended. No degradation of performance or loss of function is allowed below that specified by the manufacturer.

Criterion B: The equipment continues to operate as intended after the test. Degradation of performance or loss of function is allowed during the test, however afterwards this must not be below that specified by the manufacturer.

Criterion C: Temporary loss of function is allowed provided the function is self-recoverable or can be restored.

Conclusion: **The tested lighting complies with the requirements set by the standard EN IEC 61000-6-1:2019 and EN 55035:2017 for electromagnetic immunity of equipment within the range shown in the Table 2.**

The test laboratory declares that measurement results are valid only for the test subject.

Assoc. Prof. Karol Kováč, PhD.
Head of EMC Laboratory

Test: Conducted disturbance measurements according to EN 55016-2-1:2014

Test subject (EUT): **Monitoring system, type: VT960i**

Serial number: **prototype**

Manufacturer: **Vutlan s.r.o., ul. Svornosti 43, 821 06 Bratislava, Slovak Republic**

Date of measurement: **7. 9. 2021**

Test instrumentation:

a. test receiver R&S ESPI 7 – Ser. No. 101268,
b. V line impedance stabilization network R&S ESH3-Z5 – Ser. No. 846128/015,
c. transient limiter ESH3-Z2 – Ser. No. 102021,
d. measurement place according to EN 55032.

Metrological properties:

The measuring place was verified according to CISPR 16-1 on 10. 6. 2020 - report KP-20/01/EMK, ESPI 7 R&S has Certificate of Calibration No. 29/610/2020 (VUS, n.o.) from 12. 3. 2020.

The maximum expanded uncertainty of measurement results for the full frequency range (with the extension coefficient k = 2) is ± 3.4 dB (estimation according to EN 55016-4-2: 2011; report U-13/03/EMK on 14. 5. 2013).

Conditions of measurement:

Measurement place was arranged according to EN 55032 (Fig. 2). The cables of EUT were shortened according to the requirements of the standard.

Frequency range: (0.15 ÷ 30) MHz

Measurement results:

The measurement results are shown in the appendix **MCE 21 44**.

Conclusion:

The maximal measured levels of disturbing conducted emissions are below the limits of the standards EN IEC 61000-6-3: 2021 and EN 55032:2015.

Test: Radiated disturbance measurements according to EN 55016-2-3:2017

Test subject (EUT): **Monitoring system, type: VT960i**

Serial number: **prototype**

Manufacturer: **Vutlan s.r.o., ul. Svornosti 43, 821 06 Bratislava, Slovak Republic**

Date of measurement: **7. 9. 2021**

Test instrumentation:

a. test receiver R&S ESPI 7 – Ser. No. 101268,
b. measuring preamplifier Sonoma 352 – Ser. No. 303123,
c. TRILOG measuring antenna Schwarzbeck, VULB 9163 – Ser. No. 9163-360,
d. decoupling network FCC CDN-M3-16 – Ser. No. 05056,
e. terminative resistor 50 Ohm,
f. semi-anechoic shielded chamber with measurement place according to EN 55032.

Metrological properties:

The measuring place was verified according to CISPR 16-1 (NSA) on 6. 8. 2019 - report KP-119/01EMK, coefficient of transmission on 11. 6. 2020, KP-20/02/EMK and ESPI 7 R&S has Certificate of Calibration No. 29/610/2020 (VUS, n.o.) from 12. 3. 2020.

The maximum expanded uncertainty of measurement results for the full frequency range and both antenna polarizations (with the extension coefficient k = 2) is ± 5.0 dB (estimation according to EN 55016-4-2: 2011; report U-13/04/EMK on 16. 5. 2013).

Conditions of the measurement:

The measurement place was arranged according to EN 55032 (Fig.3). The cables of EUT were shortened according to the requirements of the standard.

Measured frequency range:	(30 ÷ 4000) MHz
Measuring distance:	3 m
Height of antenna:	(1 ÷ 4) m
Rotation of EUT	0° ÷ 360°

Measurements were performed for both polarizations of measuring antenna.

The measurement results:

The measurement results are shown in the appendix **MRE 21 44**.

Conclusion:

The maximal measured levels of disturbing radiated emissions are below the limit of the standards EN IEC 61000-6-3: 2021 and EN 55032:2015.

Test: Electrostatic discharge immunity test according to EN 61000-4-2:2009

Test subject (EUT): **Monitoring system, type: VT960i**

Serial number: **prototype**

Manufacturer: **Vutlan s.r.o., ul. Svornosti 43, 821 06 Bratislava, Slovak Republic**

Date of measurement: **8. 9. 2021**

Test instrumentation:

a. ESD simulator Haefely Trench PESD 1600 – Ser. No. H 606 113,
b. test place according to EN 61000-4-2.

Metrological properties:

The test place was verified according to EN 61000-4-2 on 7. 9. 2020 - report KP-20/03/EMK.

Conditions of the test:

The test place was arranged according to EN 61000-4-2 (Fig. 4). Testing voltage of electrostatic discharge simulator was gradually rising to the nominal value and its polarity was changing. During the test the function of EUT was checked by employee of manufacturer.

Test results:

Tab. 3: Result of electrostatic discharge test.

Discharge type	Test level	Applicant request	Test results
Indirect – contact discharge	±4 kV	B	**A**
Direct – contact discharge	±4 kV	B	**A**
Air discharge	±8 kV	B	**A**

Explanation of criterions is on page 4.

Conclusion: ***The immunity level of the tested device complies with the requirements set by the standards EN IEC 61000-6-1:2019 and EN 55035:2017.***

Test: **Test of immunity against radiated, radio-frequency, electromagnetic field according to EN 61000-4-3:2020**

Test subject (EUT): **Monitoring system, type: VT960i**

Serial number: **prototype**

Manufacturer: **Vutlan s.r.o., ul. Svornosti 43, 821 06 Bratislava, Slovak Republic**

Date of measurement: **7. 9. 2021**

Test instrumentation:

a. signal generator Agilent E8257D – Ser. No. MY45141271,
b. power amplifier 150W1000, Amplifier Research – Ser. No. 0333238,
c. power amplifier Milmega AS0840-30/17 – Ser. No. 1030085,
d. TRILOG measuring antenna Schwarzbeck VULB 9163 – Ser. No. 9163-360,
e. test place in anechoic shielded chamber according to EN 61000-4-3.

Metrological properties:

The test place was verified according to EN 61000-4-3 on 14. 11. 2019 - report KP-19/02/EMK.

Conditions of the test:

The test place was arranged according to EN 61000-4-3 (Fig. 5). Cables of EUT were shorted to 1 m active irradiated length. During the test the function of EUT was checked by employee of manufacturer.

Frequency range: (80 ÷ 2700) MHz
Modulation: AM 80 % 1 kHz in whole frequency range
Measurement was realized for both polarization of antenna.

Test results:

Table 4: Result of immunity test against electromagnetic field.

Frequency range	Test level	Request of standard	Test result
(80 ÷ 1000) MHz	**3 V/m**	A	**A**
(1400 ÷ 2000) MHz	**3 V/m**	A	**A**
(2000 ÷ 2700) MHz	**1 V/m**	A	**A**

Explanation of the criteria is on the page 4.

Conclusion: ***The immunity level of the tested device complies with the requirements set by the standards EN IEC 61000-6-1:2019 and EN 55035:2017.***

Test: Electrical fast transient/burst immunity test according to EN 61000-4-4:2012

Test subject (EUT): **Monitoring system, type: VT960i**

Serial number: **prototype**

Manufacturer: **Vutlan s.r.o., ul. Svornosti 43, 821 06 Bratislava, Slovak Republic**

Date of measurement: **8. 9. 2021**

Test instrumentation:

a. EFT/Burst simulator EFT500N5 with CDN – Ser. No. V0947105565,
b. test place for immunity against EFT/Burst testing according to EN 61000-4-4.

Metrological properties:

The testing generator was verified according to EN 61000-4-4 on 19. 11. 2020 - report KP-20/04/EMK.

Conditions of the test:

The test place was arranged according to EN 61000-4-4 (Fig. 6). The cables of EUT were shortened according to the requirements of the standard. Testing voltage of simulator was gradually rising to the nominal value and its polarity was changing. During the test the function of EUT was checked by employee of manufacturer.

Test results:

Table 5: Result of immunity test against EFT/Burst f = 5 kHz, 15/300 ms.

Tested port	Coupling	Test level	Applicant request	Test result
Power AC	CDN	±1 kV	B	**A**
LAN	Capacity clamp	±0.5 kV	B	**A**
CAN	Capacity clamp	±0.5 kV	B	**A**
Sensor input A2 (temperature sensor)	Capacity clamp	±0.5 kV	B	**A**
Sensor input A4 (humidity sensor)	Capacity clamp	±0.5 kV	B	**A**
Relay	Capacity clamp	±0.5 kV	B	**A**
Dry contact In	Capacity clamp	±0.5 kV	B	**A**
Dry contact Out	Capacity clamp	±0.5 kV	B	**A**
Output 12V	Capacity clamp	±0.5 kV	B	**A**

Explanation of criterions is on page 4.

Conclusion: ***The immunity level of the tested device complies with the requirements set by the standards EN IEC 61000-6-1:2019 and EN 55035:2017.***

Test: Surge immunity test according to EN 61000-4-5:2014

Test subject (EUT): **Monitoring system, type: VT960i**

Serial number: **prototype**

Manufacturer: **Vutlan s.r.o., ul. Svornosti 43, 821 06 Bratislava, Slovak Republic**

Date of measurement: **8. 9. 2021**

Test instrumentation:

a. surge simulator VCS 500-M, EM TEST – Ser. No. V0548100910,
b. test place according to EN 61000-4-5.

Metrological properties:

The test simulator was verified according to EN 61000-4-5 on 8. 12. 2020 - report KP-20/05/EMK.

Conditions of the test:

The test place was arranged according to EN 61000-4-5. Five pulses of both polarities were applied with repetition time of 1 minute. During the test the function of EUT was checked by employee of manufacturer.

Test results:

Table 6: Result of immunity test against SURGE pulses.

Tested port	Coupling impedance	Test level	Request of standard	Test result
L – N	2 Ω	±1 kV	B	A
L – PE	12 Ω	±2 kV	B	A
N – PE	12 Ω	±2 kV	B	A

Explanation of criterions is on page 4.

Conclusion: ***The immunity level of the tested device complies with the requirements set by the standards EN IEC 61000-6-1:2019 and EN 55035:2017.***

Test: **Test of immunity against conducted disturbances, induced by radio-frequency fields according to EN 61000-4-6:2014**

Test subject (EUT): **Monitoring system, type: VT960i**

Serial number: **prototype**

Manufacturer: **Vutlan s.r.o., ul. Svornosti 43, 821 06 Bratislava, Slovak Republic**

Date of measurement: **7. 9. 2021**

Test instrumentation:

a. signal generator Agilent E8257D – Ser. No. MY45141271,
b. power amplifier Prana AP32DT150 – Ser. No. 0511-0697,
c. set of CDN according to EN 61000-4-6,
d. injection clamp Lüthi EM101 – Ser. No. 35639,
e. injection clamp Lüthi EM101 – Ser. No. 35976,
f. test place according to EN 61000-4-6.

Metrological properties:

The test place and CDNs were verified according to EN 61000-4-6 on 15. 12. 2019 – report KP-19/03/EMK.

Conditions of the test:

The test place was arranged according to EN 61000-4-6 (Fig. 7). The cables were shortened according to the requirements of the standard. During the test the function of EUT was checked by employee of manufacturer.

Frequency range: (0.15 ÷ 80) MHz
Modulation: AM 80 % 1 kHz in whole frequency range

Test results:

Table 7: Result of immunity test against conducted interference.

Tested port	Coupling	Test level	Request of standard	Test result
Power AC	M-3	3 V	A	**A**
LAN	T8-RJ45	3 V	A	**A**
CAN	EM101	3 V	A	**A**
Sensor input A2 (vibration sensor)	EM101	3 V	A	**A**
Sensor input A4 (humidity sensor)	EM101	3 V	A	**A**
Relay	M-2	3 V	A	**A**
Dry contact In	M-2	3 V	A	**A**
Dry contact Out	M-2	3 V	A	**A**
Output 12V	M-2	3 V	A	**A**

Explanation of criterions is on page 4.

Conclusion: ***The immunity level of the tested device complies with the requirements set by the standards EN IEC 61000-6-1:2019 and EN 55035:2017.***

Test: **Voltage dips, short interruptions and voltage variations immunity tests according to EN 61000-4-11:2004**

Test subject (EUT): **Monitoring system, type: VT960i**

Serial number: **prototype**

Manufacturer: **Vutlan s.r.o., ul. Svornosti 43, 821 06 Bratislava, Slovak Republic**

Date of measurement: **8. 9. 2021**

Test instrumentation:

a. programmable AC source Chroma 61503 – Ser. No. 00000253,
b. test place according to EN 61000-4-11.

Metrological properties:

The test place was verified according to EN 61000-4-11 on 19. 12. 2019 - report KP-19/07/EMK.

Conditions of the test:

The test place was arranged according to EN 61000-4-11. Fluctuations and dips of voltage were generated by programmable AC source. During the test the function of EUT was checked by employee of manufacturer.

Nominal voltage *Un*: 230 V AC

Test results:

Table 8: Result of immunity test against voltage dips and short interruptions.

Type	Duration	Status	Request of standard	Test result
Drop of 100 %	0.5 period	Normal status	B	**A**
Drop of 100 %	1 period	Normal status	B	**A**
Drop of 30 %	25 periods	Normal status	C	**A**
Drop of 100 %	250 period	Short dysfunction	C	**C**

Explanation of criterions is on page 4.

Conclusion: ***The immunity level of the tested device complies with the requirements set by the standards EN IEC 61000-6-1:2019 and EN 55035:2017.***

Fig.1: Identification of the equipment.

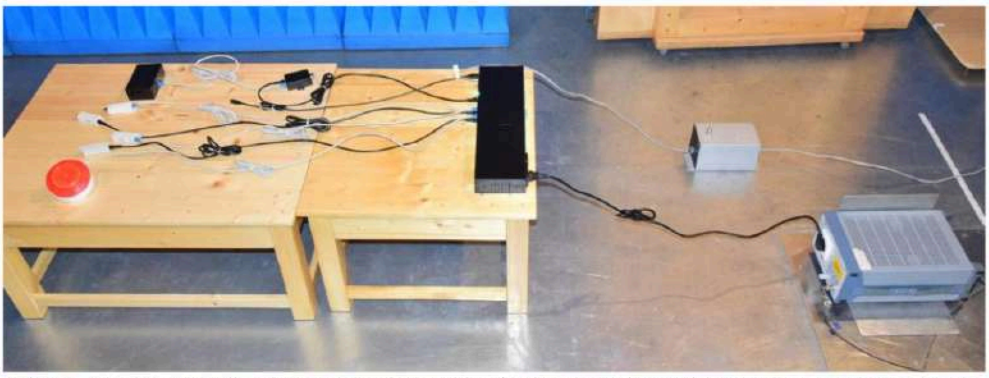


Fig.2: Arrangement of measured sample during conducted emission measurement.

Fig.3: Arrangement of measured sample during radiated emission measurement.

Fig.4: Arrangement of tested sample during the test according to EN 61000-4-2.

Fig.5: Arrangement of tested sample during the test according to EN 61000-4-3.

Fig.6: Arrangement of tested sample during the test according to EN 61000-4-4.

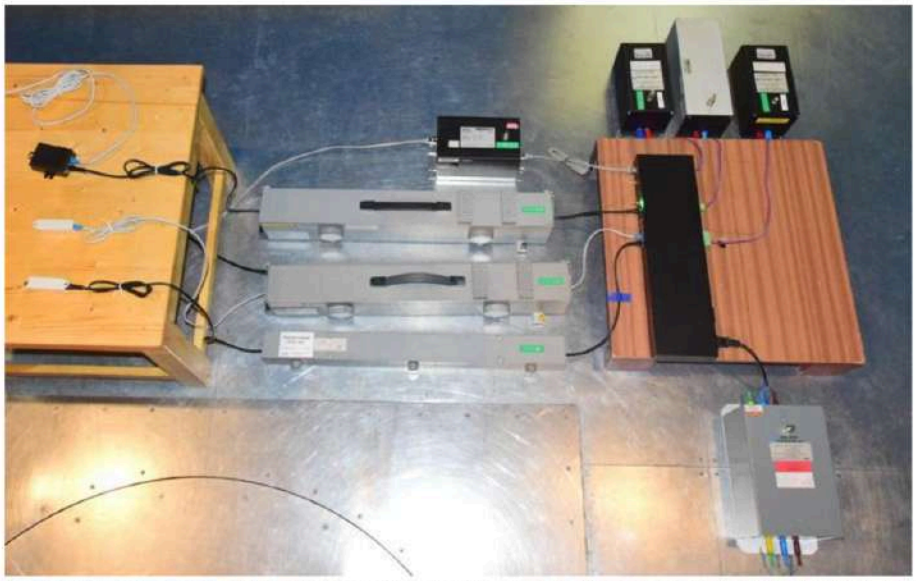


Fig.7: Arrangement of tested sample during the test according to EN 61000-4-6.

Place and date of test report edition: **Bratislava, 22. 9. 2021**

Test executed by: **A. Krammer, MSc.** .....

Report created by: **J. Hallon, PhD.** .....

Test results verified by: **Assoc. Prof. K. Kováč, PhD.** .....

End of test report

EMI Measurement Test Report
Conducted Emission

Test subject (EUT): **Monitoring system, type: VT960i**

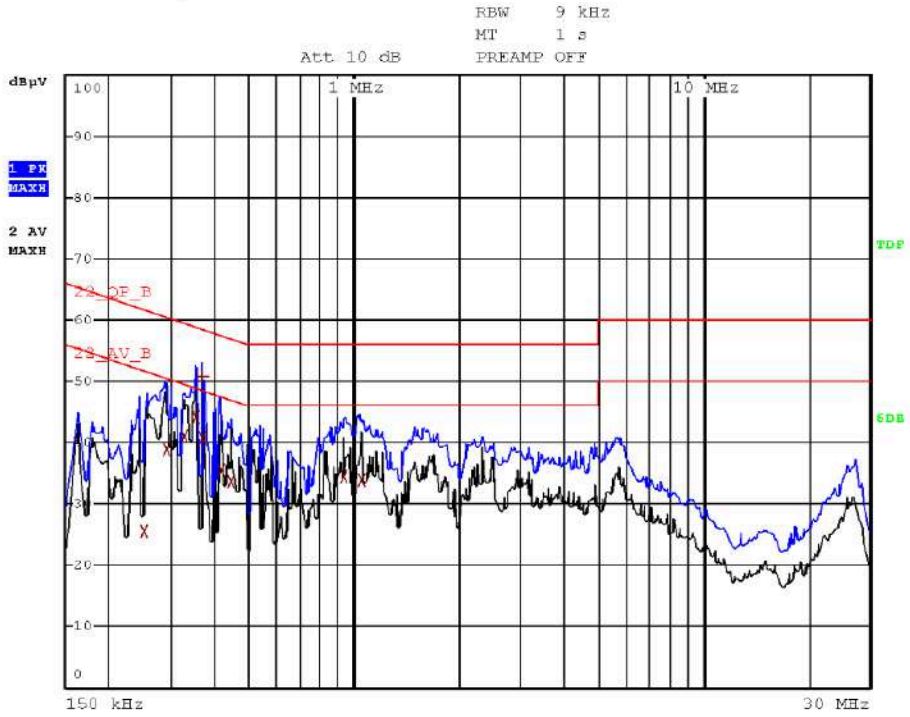
Operating Conditions: Normal
Operator: A. Krammer
Test Specification: EN 55016-2-1, EN 55032
Limit: EN 55032, EN IEC 61000-6-3
Date: 7. 9. 2021

Measurement 1: Input - V1

Scan Settings (1 Range)

Frequencies			Receiver Settings		Detectors			
Start	Stop	Step	Res BW	M-Time	Pre-measurement		Final-measurement	
150 kHz	30 MHz	4 kHz	9 kHz	1 ms	PK+	AV	QP	AV

Pre-measurement Graph:



Final Measurement Results:

Trace	Frequency [MHz]	Level [dBµV]	Limit [dBµV]	Margin [dBµV]
AV	0.290	39.02	50.52	11.50
AV	0.326	41.15	49.55	8.40
AV	0.350	44.34	48.96	4.62
QP	0.366	50.89	58.59	7.70
AV	0.366	40.88	48.59	7.71
AV	0.414	35.61	47.57	11.96
AV	0.934	34.48	46.00	11.52
AV	1.050	34.01	46.00	11.99

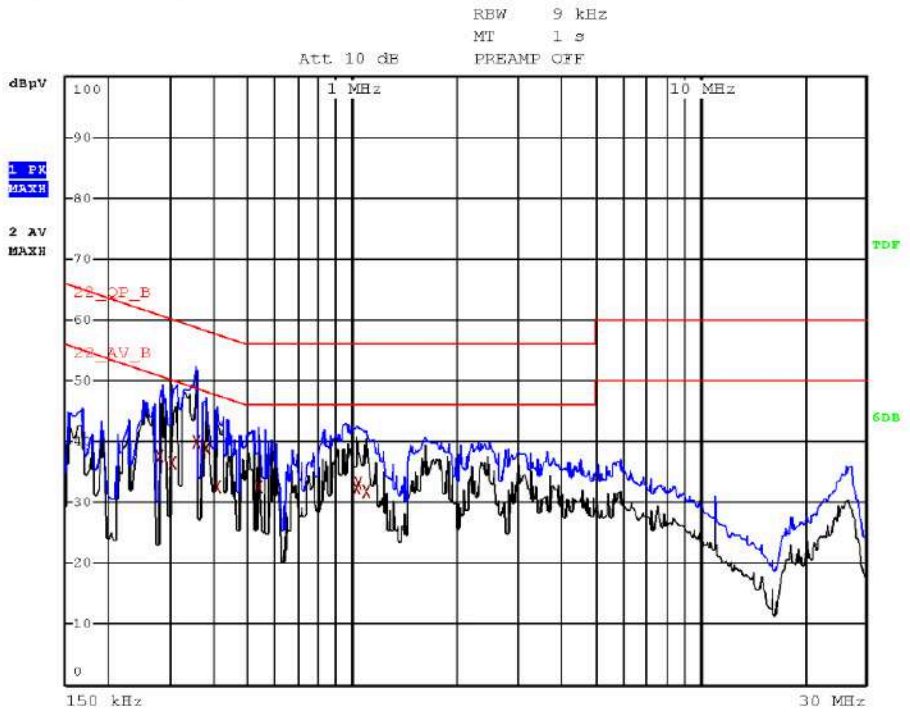
* = limit exceeded

Measurement 2: Input - V2

Scan Settings (1 Range)

Frequencies			Receiver Settings		Detectors			
Start	Stop	Step	Res BW	M-Time	Pre-measurement		Final-measurement	
150 kHz	30 MHz	4 kHz	9 kHz	1 ms	PK+	AV	QP	AV

Pre-measurement Graph:



Final Measurement Results:

Trace	Frequency [MHz]	Level [dBµV]	Limit [dBµV]	Margin [dBµV]
AV	0.282	37.61	50.76	13.15
AV	0.302	36.49	50.19	13.70
AV	0.354	40.06	48.87	8.81
AV	0.378	38.88	48.32	9.44
AV	0.534	32.76	46.00	13.24
AV	1.030	32.30	46.00	13.70
AV	1.042	33.08	46.00	12.92
AV	1.094	31.91	46.00	14.09

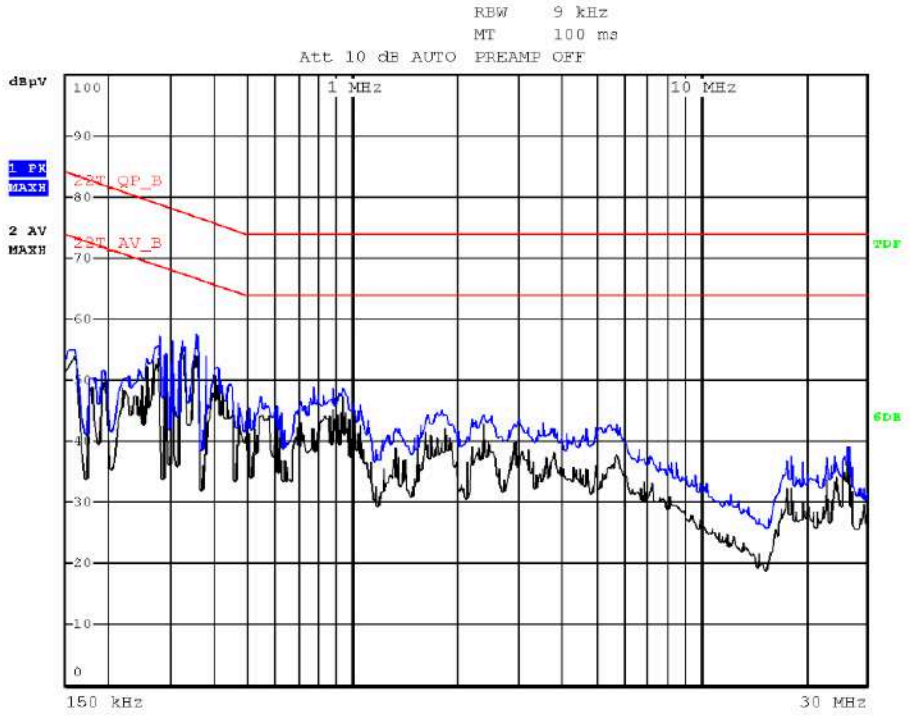
* = limit exceeded

Measurement 3: LAN

Scan Settings (1 Range)

Frequencies			Receiver Settings		Detectors			
Start	Stop	Step	Res BW	M-Time	Pre-measurement		Final-measurement	
150 kHz	30 MHz	4 kHz	9 kHz	1 ms	PK+	AV	QP	AV

Pre-measurement Graph:



Final Measurement Results:

Explanation: As the peak detector values were more than 10 dB below limit, the quasi-peak values were not measured.

EMI Measurement Test Report
Radiated Emission

Test subject (EUT): **Monitoring system, type: VT960i**

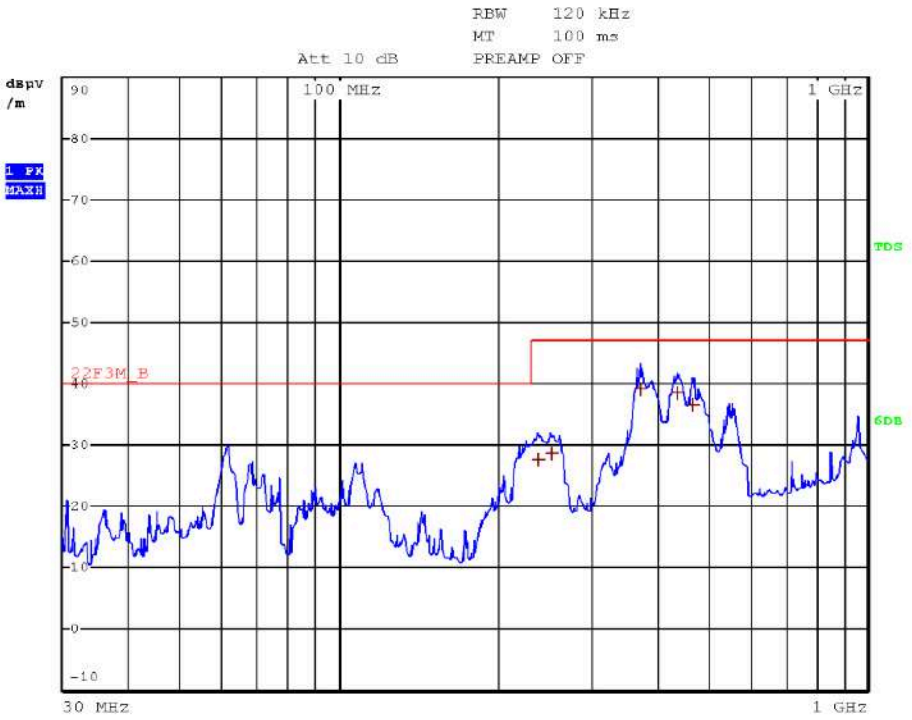
Operating Conditions: Normal
Operator: A. Krammer
Test Specification: EN 55016-2-3, EN 55032
Limit: EN 55032, EN IEC 61000-6-3
Date: 7. 9. 2021

Measurement 1: Horizontal

Scan Settings (2 Ranges)

Frequencies			Receiver Settings		Detectors	
Start	Stop	Step	Res BW	M-Time	Pre-measurement	Final-measurement
30 MHz	1000 MHz	40 kHz	120 kHz	1 ms	PK+	QP
1000 MHz	4000 MHz	200 kHz	1 MHz	1 ms	PK+ / AV	PK+ / AV

Pre-measurement Graph:

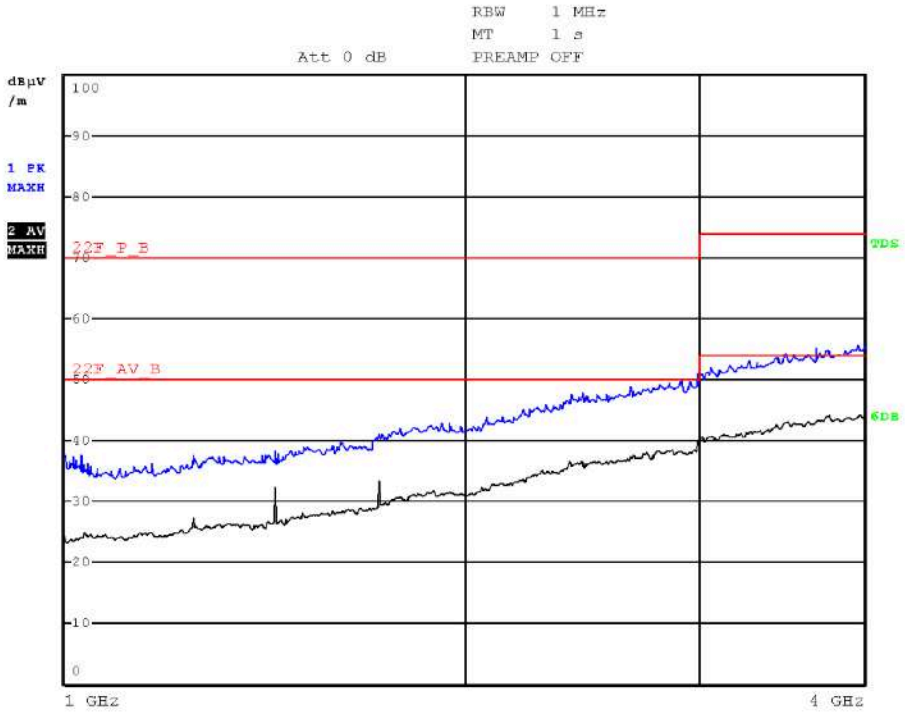


Final Measurement Results:

Trace	Frequency [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dBµV/m]
QP	241.88	27.34	47.00	19.66
QP	258.72	28.46	47.00	18.54
QP	388.52	38.81	47.00	8.19
QP	429.88	37.46	47.00	9.54
QP	471.64	36.54	47.00	10.46

* = limit exceeded

Pre-measurement Graph:



Final Measurement Results

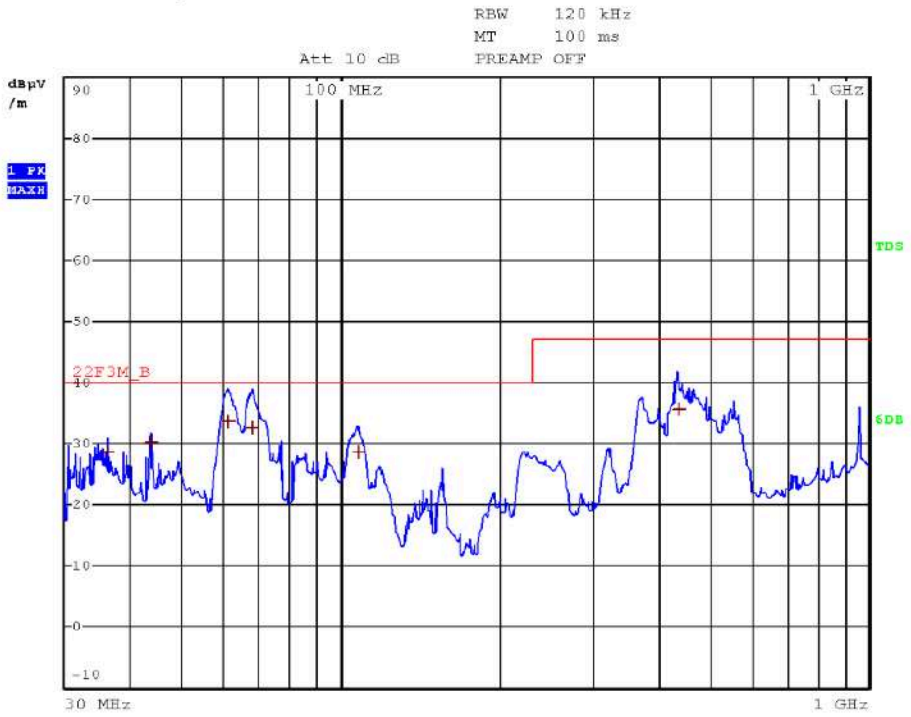
Explanation: As the pre-measurement peak and average detector values were more than 10 dB below limits, the final measurement was not realized.

Measurement 2: Vertical

Scan Settings (2 Ranges)

Frequencies			Receiver Settings		Detectors	
Start	Stop	Step	Res BW	M-Time	Pre-measurement	Final-measurement
30 MHz	1000 MHz	40 kHz	120 kHz	1 ms	PK+	QP
1000 MHz	4000 MHz	200 kHz	1 MHz	1 ms	PK+ / AV	PK+ / AV

Pre-measurement Graph:

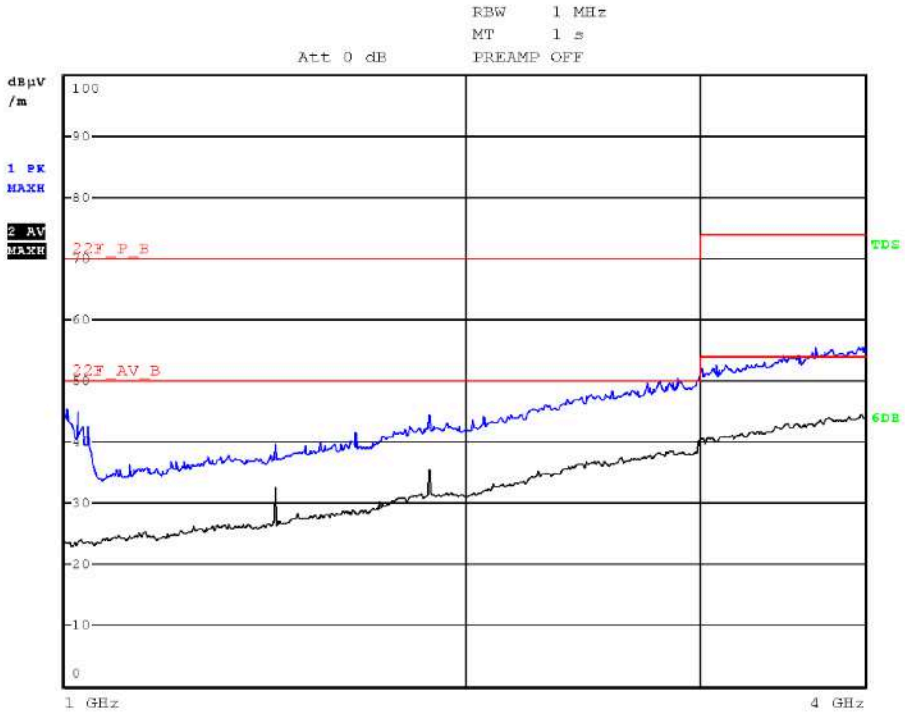


Final Measurement Results:

Trace	Frequency [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dBµV/m]
QP	36.12	28.68	40.00	11.32
QP	43.27	30.08	40.00	9.92
QP	61.32	33.68	40.00	6.32
QP	68.16	32.52	40.00	7.48
QP	107.88	28.73	40.00	11.27
QP	437.68	35.14	47.00	11.86

* = limit exceeded

Pre-measurement Graph:



Final Measurement Results

Explanation: As the pre-measurement peak and average detector values were more than 10 dB below limits, the final measurement was not realized.