

Annex 1: Measurement diagrams
to
TEST REPORT
No.: 2-20755853f/08

According to: FCC Regulations
Part 15.107 & 15.109

for
Toshiba Information Systems (UK) Ltd.
GSM/(E)GPRS/FDD Mobile Phone TM5-J01
+
AC-Adapter/ USB cable

Laboratory Accreditation and Listings			
 DAT-P176/94-02	 Reg. No.: 99538 MRA US-EU 0003	 Reg. No.: IC 3465	 Reg. No.: R-2665, R-2666 C-2914, T-339
accredited according to DIN EN ISO/IEC 17025			
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1. Measurement diagrams

1.1. Conducted emissions on AC-mains

Diagram No. 01.01

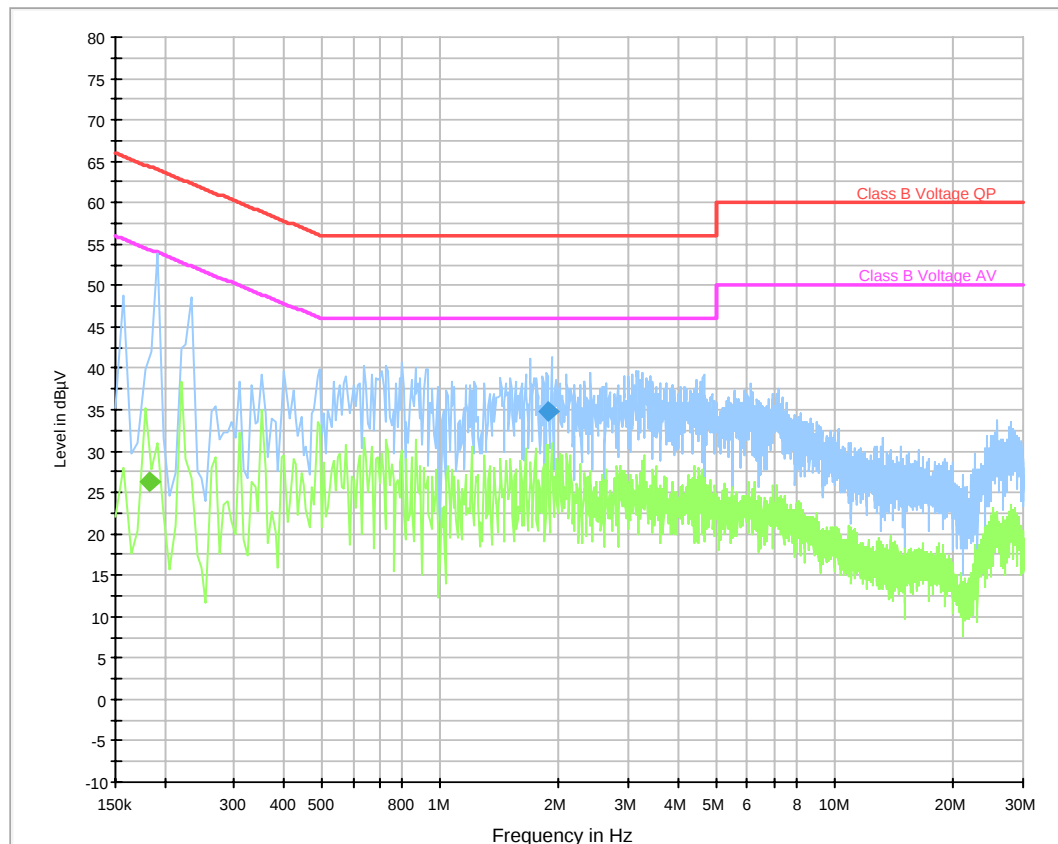
Common Information

Test Description:	Conducted Voltage Measurement
Operating Conditions:	TCH1900 Mode
Measurement on line:	Mains AC L1 and N
Scan mode	EMC 32, automatic scan mode, repetitiv scan, maxhold mode
Power	testet with 110 V AC 60 Hz
Testspezifikation	FCC 15.209
Operator name	Lor

EUT Information

Description:	
EUT Name:	TM5-J01 + AC-Adapter
Manufacturer:	Toshiba Corp.
Serial Number:	FCC #1
Hardware Rev:	
Software Rev:	Audio
Comment:	

01_ESS_Class B_Voltage_PK_QPAV



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
1.876000	34.7	1000.000	9.000	GN	L1	0.0	21.3	56.0

Final Result 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.182000	26.4	1000.000	9.000	GN	L1	0.0	28.0	54.4

EMI Auto Test Template: 01_ESS_Class B_Voltage_PK_QPAV

Hardware Setup: ESS_ESH2-Z5
 Measurement Type: 4 Line LISN
 Frequency Range: 150 kHz - 30 MHz
 Graphics Level Range: -10 dBμV - 80 dBμV

Preview Measurements:
 Scan Test Template: 02_Class B pre_PK_AV_1ms

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
150 kHz - 30 MHz	MaxPeak; Average	9 kHz	0,001 s	ESS

Data Reduction:
 Limit Line #1: Class B Voltage QP
 Limit Line #2: Class B Voltage AV
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 25 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -3 dB
 Maximum Number of Results: 30
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: 13_Class B zoom_PK_AV_10ms

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
150 kHz - 30 MHz	MaxPeak; Average	9 kHz	0,01 s	ESS

Final Measurements:
 Template for Single Meas.: 07_Class B fin AV QP

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
150 kHz - 30 MHz	QuasiPeak; Average	9 kHz	1 s	ESS

Report Settings:
 Report Template: Ctc_Standard_class_B
 Create Electronic Report: PDF
 Document Name: EMI Report

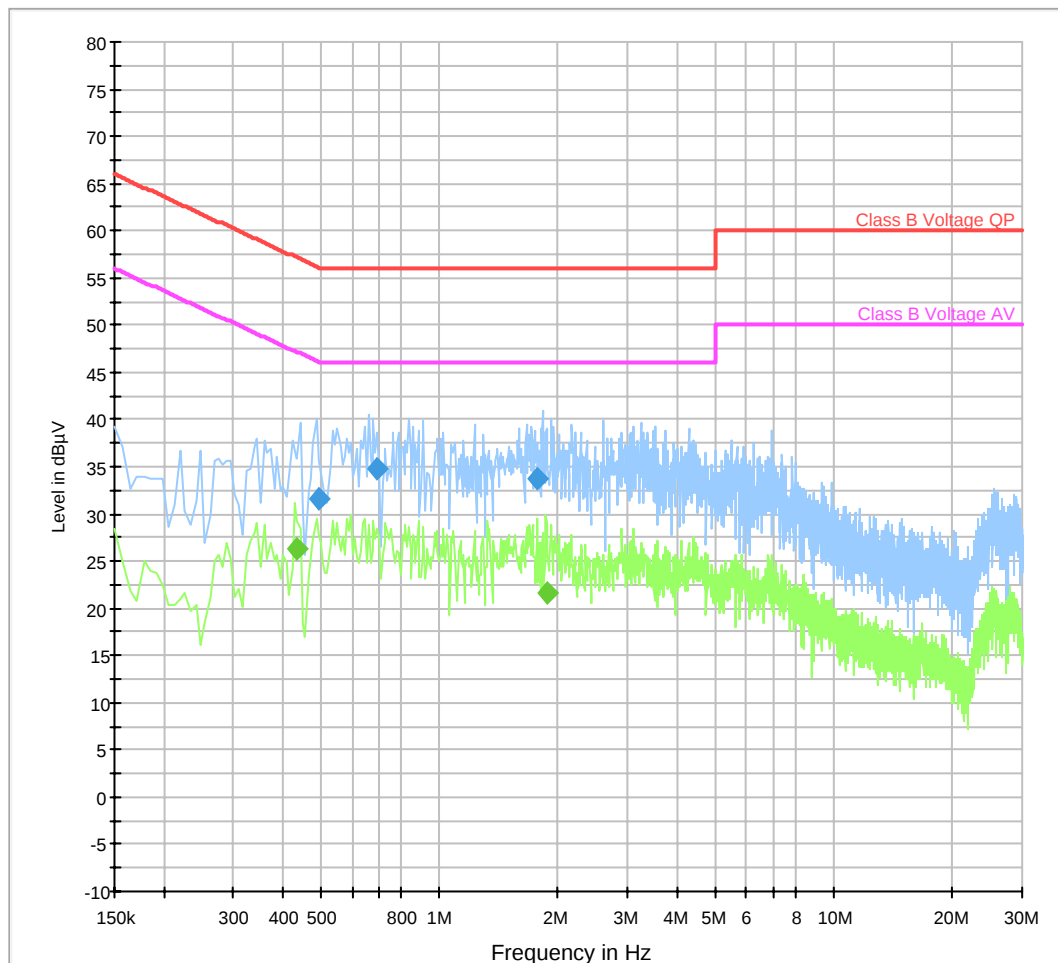
Diagram No. 01.02**Common Information**

Test Description:	Conducted Voltage Measurement
Operating Conditions:	TCH850 Mode
Measurement on line:	Mains AC L1 and N
Scan mode	EMC 32, automatic scan mode, repetitiv scan, maxhold mode
Power	testet with 110 V AC 60 Hz
Testspezifikation	FCC 15.209
Operator name	Lor

EUT Information

Description:	
EUT Name:	TM5-J01 + AC-Adapter
Manufacturer:	Toshiba Corp.
Serial Number:	FCC #1
Hardware Rev:	
Software Rev:	Audio
Comment:	

01_ESS_Class B_Voltage_PK_QPAV



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.497000	31.7	1000.000	9.000	GN	L1	0.0	24.3	56.0
0.693000	34.7	1000.000	9.000	GN	N	0.0	21.3	56.0
1.778000	33.7	1000.000	9.000	GN	N	0.0	22.3	56.0

Final Result 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.434000	26.3	1000.000	9.000	GN	N	0.0	20.9	47.2
1.883000	21.7	1000.000	9.000	GN	N	0.0	24.3	46.0

EMI Auto Test Template: 01_ESS_Class B_Voltage_PK_QPAV

Hardware Setup: ESS_ESH2-Z5
 Measurement Type: 4 Line LISN
 Frequency Range: 150 kHz - 30 MHz
 Graphics Level Range: -10 dBμV - 80 dBμV

Preview Measurements:

Scan Test Template: 02_Class B_pre_PK_AV_1ms

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
150 kHz - 30 MHz	MaxPeak; Average	9 kHz	0,001 s	ESS

Data Reduction:

Limit Line #1: Class B Voltage QP
 Limit Line #2: Class B Voltage AV
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 25 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -3 dB
 Maximum Number of Results: 30
 After Data Reduction: Interactive data reduction

Frequency Zoom:

Zoom Scan Template: 13_Class B_zoom_PK_AV_10ms

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
150 kHz - 30 MHz	MaxPeak; Average	9 kHz	0,01 s	ESS

Final Measurements:

Template for Single Meas.: 07_Class B fin AV QP

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
150 kHz - 30 MHz	QuasiPeak; Average	9 kHz	1 s	ESS

Report Settings:

Report Template: Ctc_Standard_class_B
 Create Electronic Report: PDF
 Document Name: EMI Report

Diagram No. 01.03

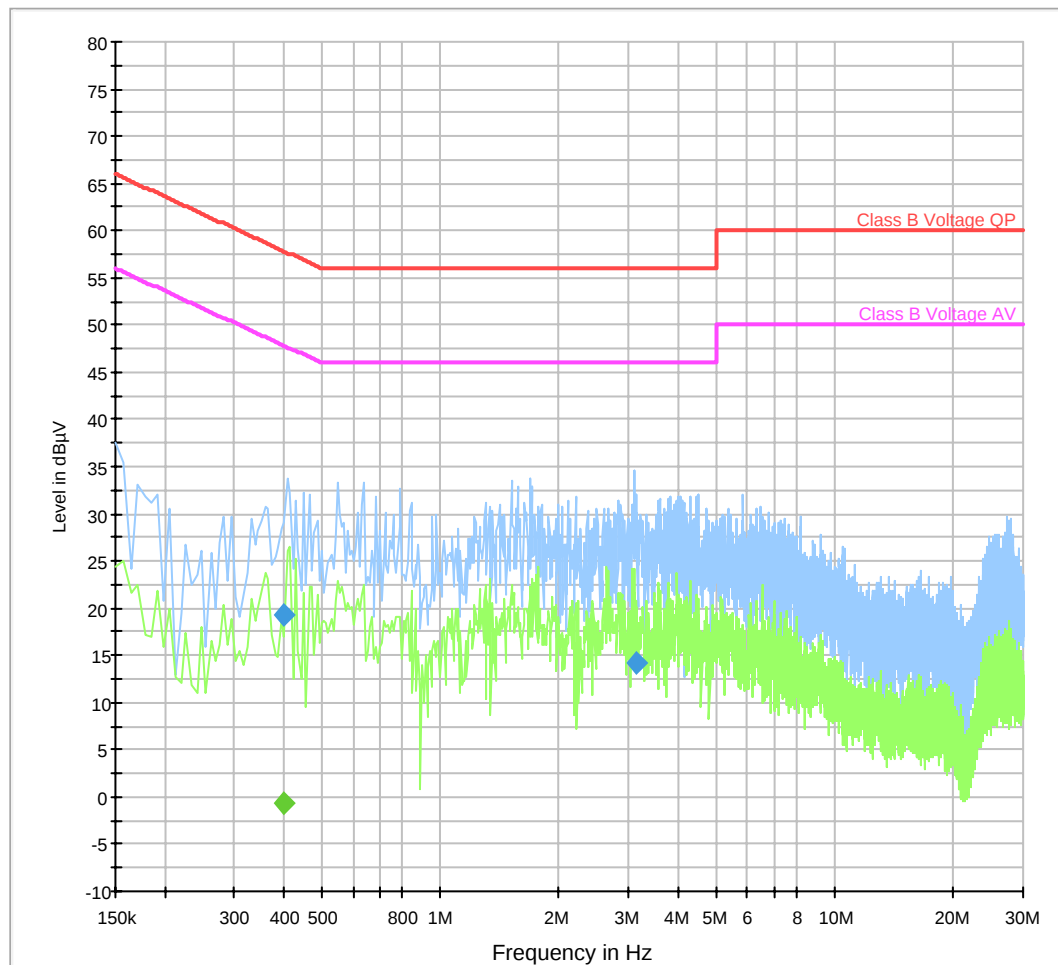
Common Information

Test Description:	Conducted Voltage Measurement
Operating Conditions:	IDLE Mode 850
Measurement on line:	Mains AC L1 and N
Scan mode	EMC 32, automatic scan mode, repetitiv scan, maxhold mode
Power	testet with 110 V AC 60 Hz
Testspezifikation	FCC 15.109
Operator name	Lor

EUT Information

Description:	
EUT Name:	TM5-J01 + AC-Adapter
Manufacturer:	Toshiba Corp.
Serial Number:	FCC #1
Hardware Rev:	
Software Rev:	Audio
Comment:	

01_ESS_Class B_Voltage_PK_QPAV



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.399000	19.2	1000.000	9.000	GN	L1	0.0	38.7	57.9
3.122000	14.2	1000.000	9.000	GN	L1	0.0	41.8	56.0

Final Result 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.399000	-0.8	1000.000	9.000	GN	L1	0.0	48.7	47.9

EMI Auto Test Template: 01_ESS_Class B_Voltage_PK_QPAV

Hardware Setup: ESS_ESH2-Z5
 Measurement Type: 4 Line LISN
 Frequency Range: 150 kHz - 30 MHz
 Graphics Level Range: -10 dBμV - 80 dBμV

Preview Measurements:
 Scan Test Template: 02_Class B pre_PK_AV_1ms

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
150 kHz - 30 MHz	MaxPeak; Average	9 kHz	0,001 s	ESS

Data Reduction:
 Limit Line #1: Class B Voltage QP
 Limit Line #2: Class B Voltage AV
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 25 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -3 dB
 Maximum Number of Results: 30
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: 13_Class B zoom_PK_AV_10ms

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
150 kHz - 30 MHz	MaxPeak; Average	9 kHz	0,01 s	ESS

Final Measurements:
 Template for Single Meas.: 07_Class B fin AV QP

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
150 kHz - 30 MHz	QuasiPeak; Average	9 kHz	1 s	ESS

Report Settings:
 Report Template: Ctc_Standard_class_B
 Create Electronic Report: PDF
 Document Name: EMI Report

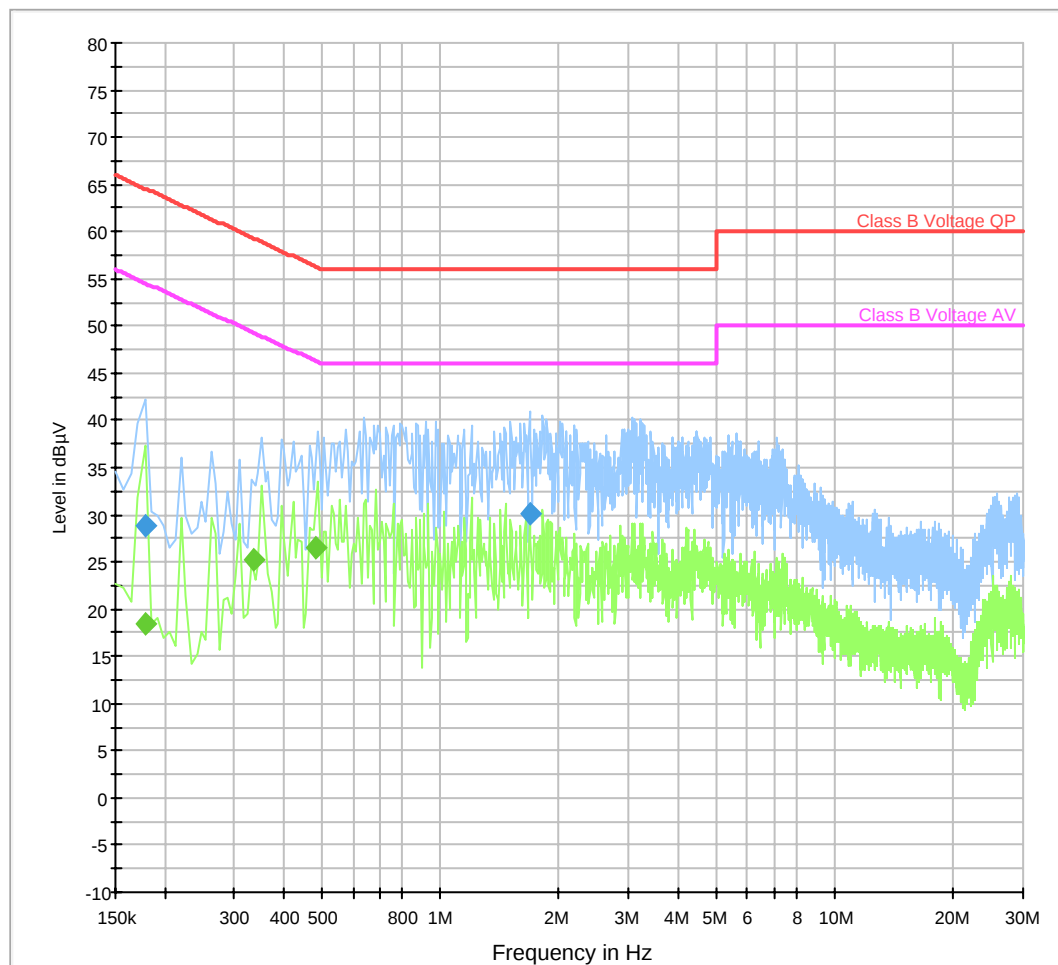
Diagram No. 01.04**Common Information**

Test Description:	Conducted Voltage Measurement
Operating Conditions:	IDLE Mode 1900
Measurement on line:	Mains AC L1 and N
Scan mode	EMC 32, automatic scan mode, repetitiv scan, maxhold mode
Power	testet with 110 V AC 60 Hz
Testspezifikation	FCC 15.109
Operator name	Lor

EUT Information

Description:	
EUT Name:	TM5-J01 + AC-Adapter
Manufacturer:	Toshiba Corp.
Serial Number:	FCC #1
Hardware Rev:	
Software Rev:	Audio
Comment:	

01_ESS_Class B_Voltage_PK_QPAV



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.178000	28.9	1000.000	9.000	GN	L1	0.0	35.7	64.6
1.687000	30.2	1000.000	9.000	GN	N	0.0	25.8	56.0

Final Result 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.178000	18.4	1000.000	9.000	GN	L1	0.0	36.2	54.6
0.336000	25.2	1000.000	9.000	GN	N	0.0	24.1	49.3
0.483000	26.5	1000.000	9.000	GN	N	0.0	19.8	46.3

EMI Auto Test Template: 01_ESS_Class B_Voltage_PK_QPAV

Hardware Setup: ESS_ESH2-Z5
 Measurement Type: 4 Line LISN
 Frequency Range: 150 kHz - 30 MHz
 Graphics Level Range: -10 dBμV - 80 dBμV

Preview Measurements:
 Scan Test Template: 02_Class B pre_PK_AV_1ms

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
150 kHz - 30 MHz	MaxPeak; Average	9 kHz	0,001 s	ESS

Data Reduction:
 Limit Line #1: Class B Voltage QP
 Limit Line #2: Class B Voltage AV
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 25 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -3 dB
 Maximum Number of Results: 30
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: 13_Class B zoom_PK_AV_10ms

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
150 kHz - 30 MHz	MaxPeak; Average	9 kHz	0,01 s	ESS

Final Measurements:
 Template for Single Meas.: 07_Class B fin AV QP

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
150 kHz - 30 MHz	QuasiPeak; Average	9 kHz	1 s	ESS

Report Settings:
 Report Template: Ctc_Standard_class_B
 Create Electronic Report: PDF
 Document Name: EMI Report

1.2. Field strength (30MHz < f < 1GHz)

Diagram No. 2.03

Common Information

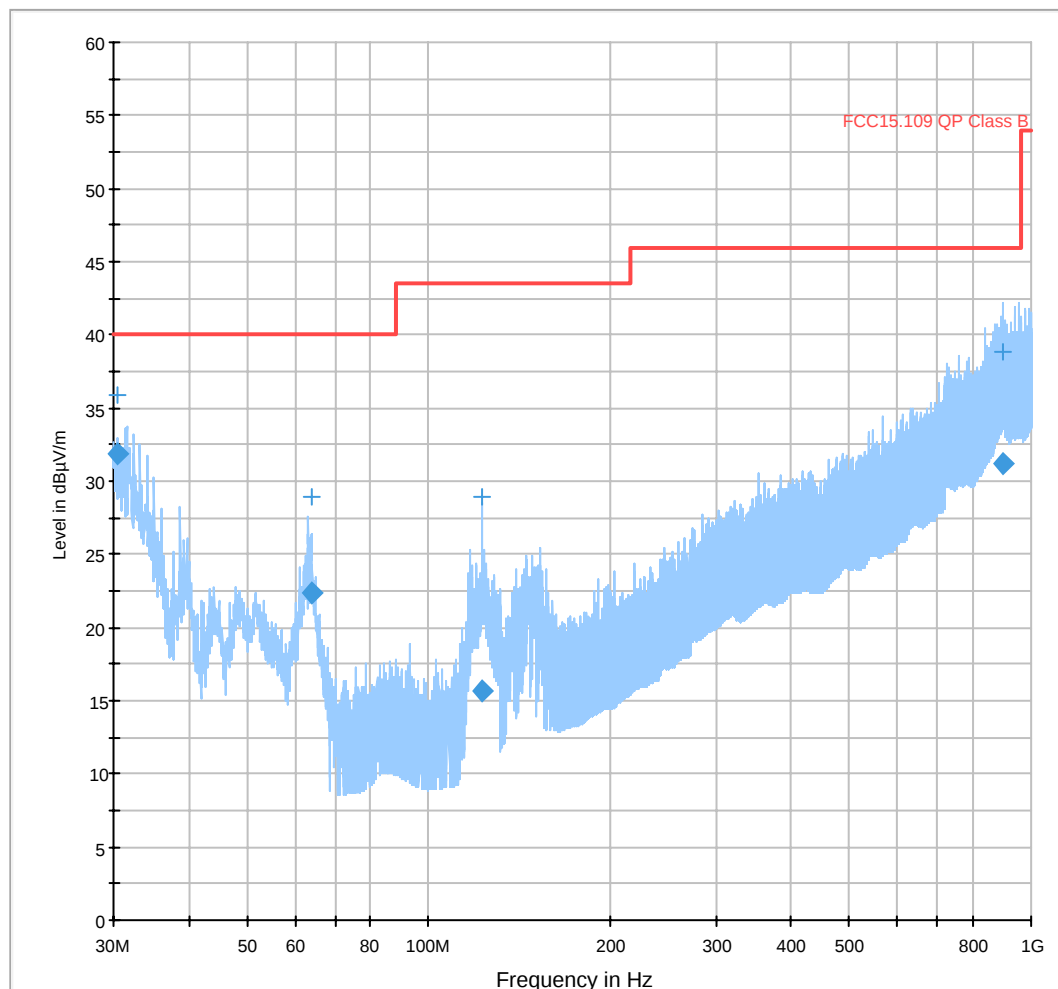
Test description:	Electric Fieldstrength Measurement related to 3 m distance
Test site and distance:	Semi Anechoic Room (SAR) with 3 m measurement distance
Measured sides of EUT:	front, right, rear, left, under, top
Rec. antenna (pre-scan):	height 1.00 m and 1.82 m, horizontal and vertical polarisation
Rec. antenna (final):	height between 1 m to 4 m, polarisation according to pre-scan results
Turntable step:	90° during pre-scan, continuously turning during final measurement
Used filter:	lowpass 1200 MHz
Test specification.:	FCC 15.109

Operator:	Lor
Operating conditions:	IDLE Mode 1900
Comment 1:	Channel middle

EUT Information

Description:	
EUT Name:	TM5-J01 + AC/DC Adapter
Manufacturer:	Toshiba

05_FCC15.109_hor+vert_kipp



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Elevation (deg)	Corr. (dB)
30.410000	31.8	1000.000	120.000	100.0	V	32.0	0.0	14.9
63.810000	22.3	1000.000	120.000	171.0	V	9.0	0.0	6.9
123.020000	15.6	1000.000	120.000	121.0	V	245.0	90.0	8.3
898.680000	31.2	1000.000	120.000	323.0	H	96.0	90.0	27.4

(continuation of the "Final Result 1" table from column 9 ...)

Frequency (MHz)	Margin (dB)	Limit (dBμV/m)	Comment
30.410000	8.2	40.0	
63.810000	17.7	40.0	
123.020000	27.9	43.5	
898.680000	14.8	46.0	

EMI Auto Test Template: 05_FCC15.109_hor+vert_kipp

Hardware Setup: HW11_FCC_ESCS30_TP1200_EUTkipp
 Measurement Type: E(I)RP
 Frequency Range: 30 MHz - 1 GHz
 Graphics Level Range: 0 dBμV/m - 60 dBμV/m

Preview Measurements:
 Turntable position: 0 - 270 deg , Step Size = 90 deg , Speed = 8
 Elevation: 0 - 90 deg , Step Size = 90 deg , Speed = 4
 Polarity: H + V
 Scan Test Template: EMI Scan 01_fast_FCC_15_209 B

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 1 GHz	MaxPeak	120 kHz	0,00005 s	ESCS 30

Data Reduction:
 Limit Line #1: FCC15.109 QP Class B
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 25 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -6 dB
 Maximum Number of Results: 20
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: EMI Scan 02_20ms_zoom_15_209 B

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 1 GHz	MaxPeak	120 kHz	0,02 s	ESCS 30

Adjustment:
 Turntable position: Adjustment with full Range , Speed = 3
 Elevation: Adjustment with full Range , Speed = 5
 Template for Single Meas.: EMI Scan 02_20ms_FCC_15_209B

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 1 GHz	MaxPeak	120 kHz	0,02 s	ESCS 30

Final Measurements:
 Template for Single Meas.: EMI Scan 03_1s_FCC_15_209 B

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 1 GHz	QuasiPeak	120 kHz	1 s	ESCS 30

Report Settings:
 Report Template: FCC15_209_vert_hor
 Create Electronic Report: RTF PDF
 Document Name: EMI Report

Diagram No. 2.04

Common Information

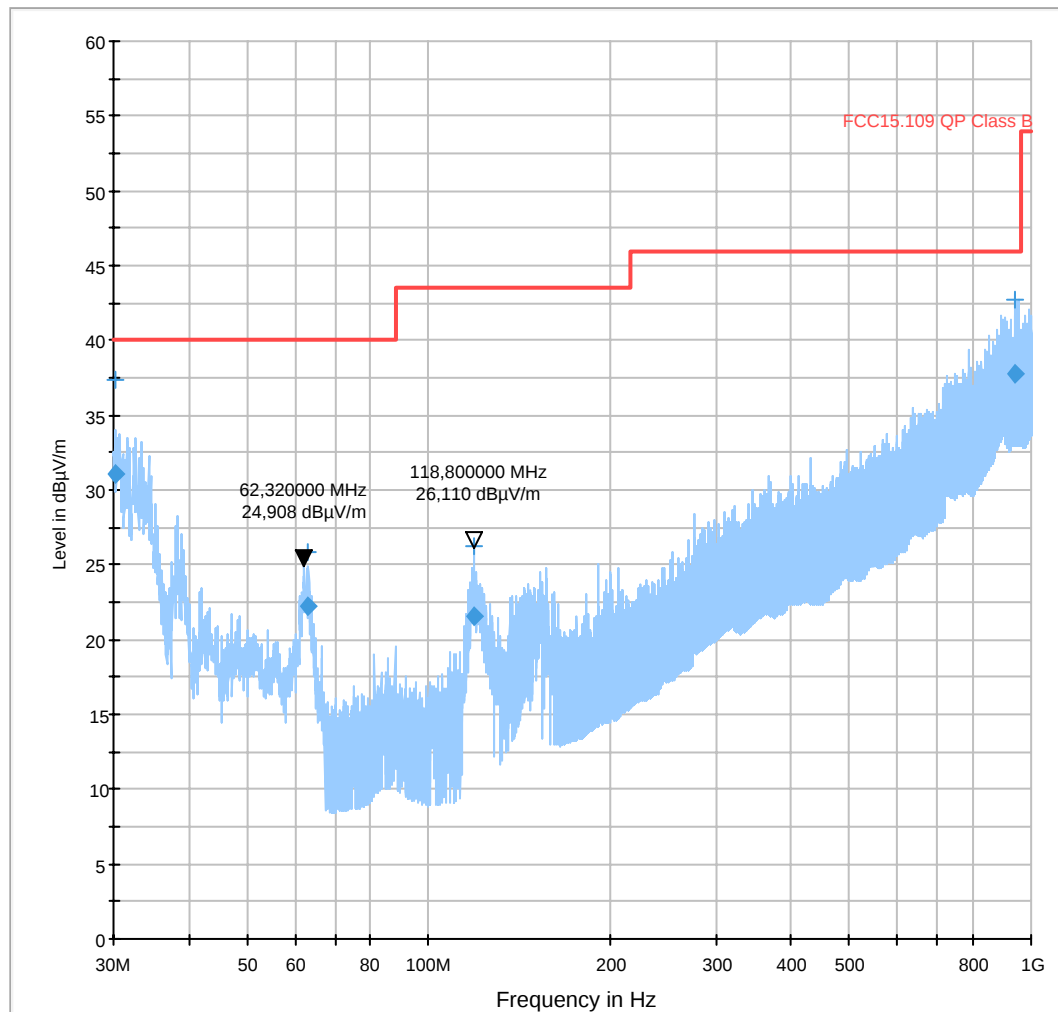
Test description:	Electric Fieldstrength Measurement related to 3 m distance
Test site and distance:	Semi Anechoic Room (SAR) with 3 m measurement distance
Measured sides of EUT:	front, right, rear, left, top, under
Rec. antenna (pre-scan):	height 1.00 m and 1.82 m, horizontal and vertical polarisation
Rec. antenna (final):	height between 1 m to 4 m, polarisation according to pre-scan results
Turntable step:	90° during pre-scan, continuously turning during final measurement
Used filter:	lowpass 1200 MHz
Test specification.:	FCC 15.109

Operator:	Lor
Operating conditions:	IDLE 850 Mode + Charging battery
Comment 1:	Channel middle

EUT Information

Description:	
EUT Name:	TM5-J01 + AC/DC Adapter
Manufacturer:	Toshiba

05_FCC15.109_hor+vert_kipp



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Elevation (deg)	Corr. (dB)
30.150000	31.1	1000.000	120.000	100.0	V	118.0	0.0	15.0
62.840000	22.2	1000.000	120.000	162.0	V	355.0	90.0	6.8
118.760000	21.6	1000.000	120.000	183.0	H	144.0	90.0	7.9
943.470000	37.7	1000.000	120.000	248.0	H	53.0	90.0	27.0

(continuation of the "Final Result 1" table from column 9 ...)

Frequency (MHz)	Margin (dB)	Limit (dBμV/m)	Comment
30.150000	8.9	40.0	
62.840000	17.8	40.0	
118.760000	21.9	43.5	
943.470000	8.3	46.0	

EMI Auto Test Template: 05_FCC15.109_hor+vert_kipp

Hardware Setup: HW11_FCC_ESCS30_TP1200_EUTkipp
 Measurement Type: E(I)RP
 Frequency Range: 30 MHz - 1 GHz
 Graphics Level Range: 0 dBμV/m - 60 dBμV/m

Preview Measurements:
 Turntable position: 0 - 270 deg , Step Size = 90 deg , Speed = 8
 Elevation: 0 - 90 deg , Step Size = 90 deg , Speed = 4
 Polarity: H + V
 Scan Test Template: EMI Scan 01_fast_FCC_15_209 B

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 1 GHz	MaxPeak	120 kHz	0,00005 s	ESCS 30

Data Reduction:
 Limit Line #1: FCC15.109 QP Class B
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 25 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -6 dB
 Maximum Number of Results: 20
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: EMI Scan 02_20ms_zoom_15_209 B

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 1 GHz	MaxPeak	120 kHz	0,02 s	ESCS 30

Adjustment:
 Turntable position: Adjustment with full Range , Speed = 3
 Elevation: Adjustment with full Range , Speed = 5
 Template for Single Meas.: EMI Scan 02_20ms_FCC_15_209B

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 1 GHz	MaxPeak	120 kHz	0,02 s	ESCS 30

Final Measurements:
 Template for Single Meas.: EMI Scan 03_1s_FCC_15_209 B

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 1 GHz	QuasiPeak	120 kHz	1 s	ESCS 30

Report Settings:
 Report Template: FCC15_209_vert_hor
 Create Electronic Report: RTF PDF
 Document Name: EMI Report

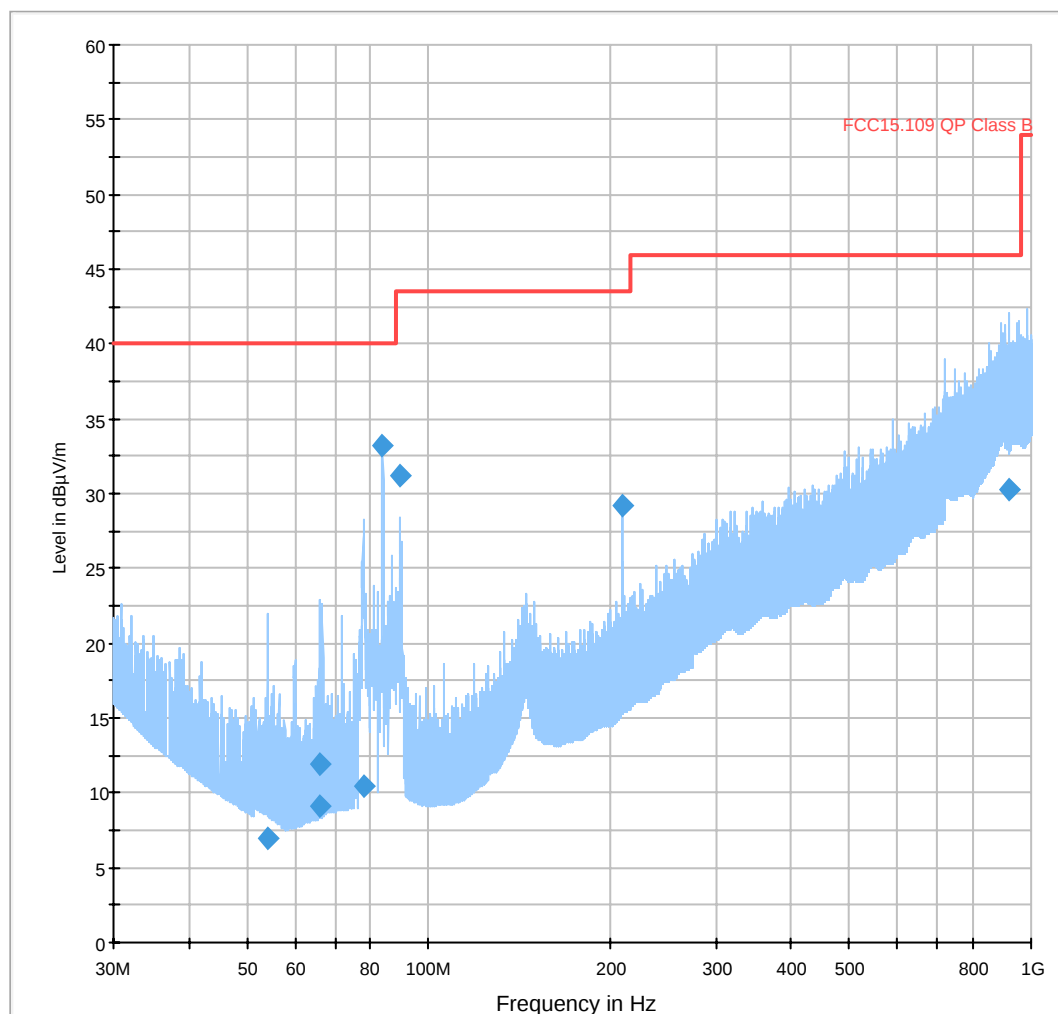
Diagram No. 2.07**Common Information**

Test description:	Electric Fieldstrength Measurement related to 3 m distance
Test site and distance:	Semi Anechoic Room (SAR) with 3 m measurement distance
Measured sides of EUT:	front, right, rear, left
Rec. antenna (pre-scan):	height 1.00 m and 1.82 m, horizontal and vertical polarisation
Rec. antenna (final):	height between 1 m to 4 m, polarisation according to pre-scan results
Turntable step:	90° during pre-scan, continuously turning during final measurement
Used filter:	lowpass 1200 MHz
Test specification.:	FCC 15.109
Operator:	Mwa
Operating conditions:	Active Synch between mobile phone and PC + RX-mode GSM 1900
Comment 1:	GSM channel middle

EUT Information

Description:	
EUT Name:	TM5-J01 + USB cable
Manufacturer:	Toshiba Corp.

FCC15.109_hor+vert



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)
54.010000	7.0	1000.000	120.000	100.0	V	29.0	7.2	33.0
65.980000	9.1	1000.000	120.000	204.0	V	148.0	7.0	30.9
66.170000	12.0	1000.000	120.000	181.0	V	320.0	7.0	28.0
78.120000	10.5	1000.000	120.000	287.0	V	146.0	7.8	29.5
83.980000	33.2	1000.000	120.000	368.0	H	0.0	8.8	6.8
89.960000	31.2	1000.000	120.000	368.0	H	24.0	8.5	12.3
209.970000	29.2	1000.000	120.000	157.0	H	319.0	12.2	14.3
918.930000	30.3	1000.000	120.000	170.0	V	318.0	26.5	15.7

(continuation of the "Final Result 1" table from column 9 ...)

Frequency (MHz)	Limit (dBμV/m)	Comment
54.010000	40.0	
65.980000	40.0	
66.170000	40.0	
78.120000	40.0	
83.980000	40.0	
89.960000	43.5	
209.970000	43.5	
918.930000	46.0	

EMI Auto Test Template: FCC15.109_hor+vert

Hardware Setup: HW11_FCC_ESCS30_TP1200
 Measurement Type: Open-Area-Test-Site
 Frequency Range: 30 MHz - 1 GHz
 Graphics Level Range: 0 dBμV/m - 60 dBμV/m

Preview Measurements:
 Antenna height: 100 - 182 cm , Step Size = 82 cm , Speed = 8
 Polarity: H + V
 Turntable position: 0 - 270 deg , Step Size = 90 deg , Speed = 8
 Scan Test Template: EMI Scan 01_fast_FCC 15_209 B

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 1 GHz	MaxPeak	120 kHz	0,00005 s	ESCS 30

Data Reduction:
 Limit Line #1: FCC15.109 QP Class B
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 25 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -6 dB
 Maximum Number of Results: 20
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: EMI Scan 02_20ms_zoom_FCC 15_209 B

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 1 GHz	MaxPeak	120 kHz	0,02 s	ESCS 30

Adjustment:
 Antenna height: Adjustment with full Range , Speed = 3
 Turntable position: Adjustment with full Range , Speed = 3
 Template for Single Meas.: EMI Scan 02_20ms_FCC 15_209 B

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 1 GHz	MaxPeak	120 kHz	0,02 s	ESCS 30

Final Measurements:
 Template for Single Meas.: EMI Scan 03_1s_FCC 15_209 B

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 1 GHz	QuasiPeak	120 kHz	1 s	ESCS 30

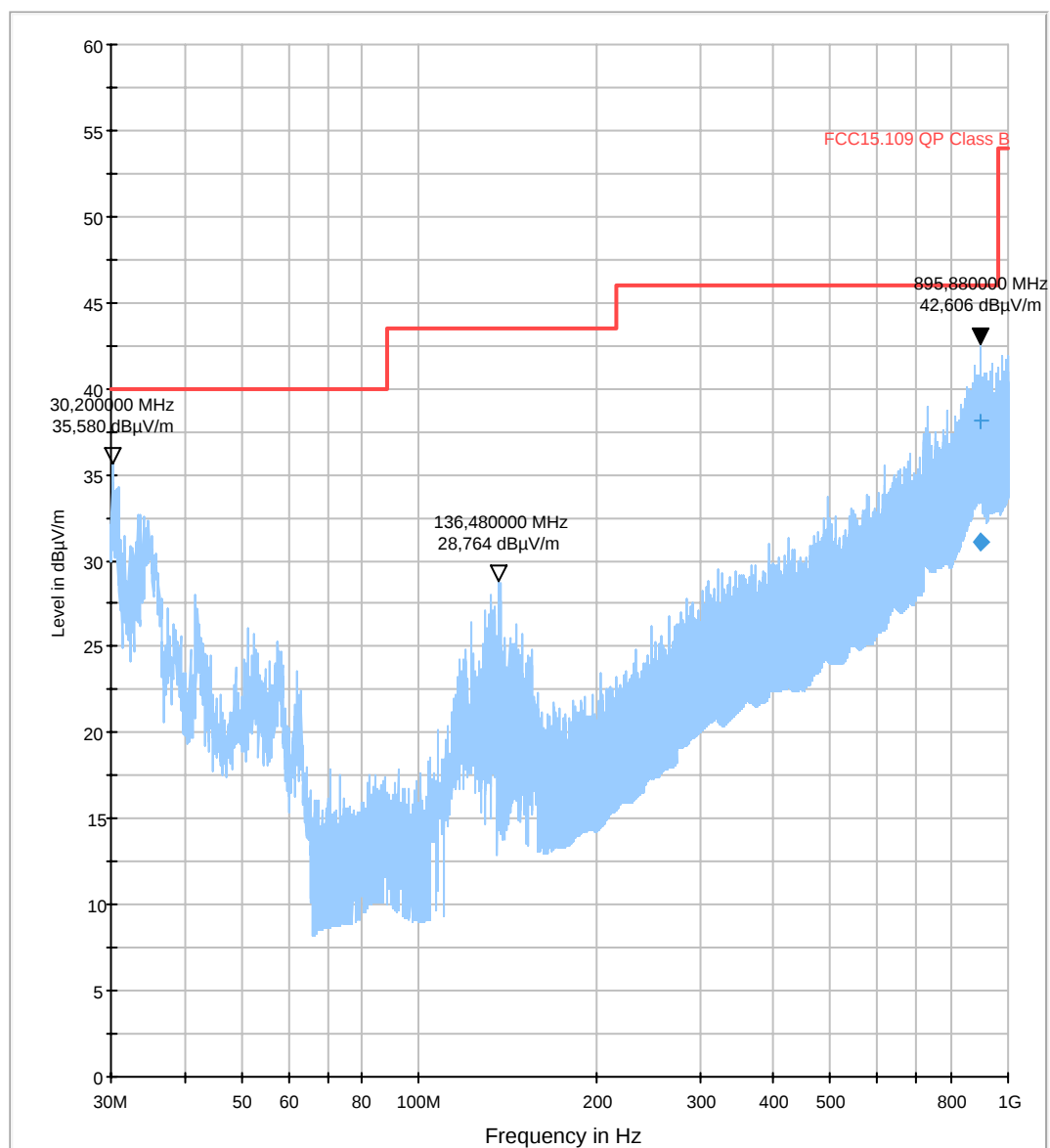
Diagram No. 02.12

Common Information

Test description:	Electric Fieldstrength Measurement related to 3 m distance
Test site and distance:	Semi Anechoic Room (SAR) with 3 m measurement distance
Measured sides of EUT:	front, right, rear, left, top, under
Rec. antenna (pre-scan):	height 1.00 m and 1.82 m, horizontal and vertical polarisation
Rec. antenna (final):	height between 1 m to 4 m, polarisation according to pre-scan results
Turntable step:	90° during pre-scan, continuously turning during final measurement
Used filter:	lowpass 1200 MHz
Test specification.:	FCC 15.109

Operator:	X_Ken
Operating conditions:	IDLE Mode 1900+GPS Receive mode
Comment 1:	Channel middle

05_FCC15.109_hor+vert_kipp



EMI Auto Test Template: 05_FCC15.109_hor+vert_kipp

Hardware Setup: HW11_FCC_ESCS30_TP1200_EUTkipp
 Measurement Type: E(I)RP
 Frequency Range: 30 MHz - 1 GHz
 Graphics Level Range: 0 dBμV/m - 60 dBμV/m

Preview Measurements:
 Turntable position: 0 - 270 deg , Step Size = 90 deg , Speed = 8
 Elevation: 0 - 90 deg , Step Size = 90 deg , Speed = 4
 Polarity: H + V
 Scan Test Template: EMI Scan 01_fast_FCC_15_209 B

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 1 GHz	MaxPeak	120 kHz	0,00005 s	ESCS 30

Data Reduction:
 Limit Line #1: FCC15.109 QP Class B
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 25 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -6 dB
 Maximum Number of Results: 20
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: EMI Scan 02_20ms_zoom_15_209 B

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 1 GHz	MaxPeak	120 kHz	0,02 s	ESCS 30

Adjustment:
 Turntable position: Adjustment with full Range , Speed = 3
 Elevation: Adjustment with full Range , Speed = 5
 Template for Single Meas.: EMI Scan 02_20ms_FCC_15_209B

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 1 GHz	MaxPeak	120 kHz	0,02 s	ESCS 30

Final Measurements:
 Template for Single Meas.: EMI Scan 03_1s_FCC_15_209 B

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 1 GHz	QuasiPeak	120 kHz	1 s	ESCS 30

Report Settings:
 Report Template: FCC15_209_vert_hor
 Create Electronic Report: RTF PDF
 Document Name: EMI Report

1.3. Field strength ($f > 1\text{GHz}$)

Diagram No.: 02.01

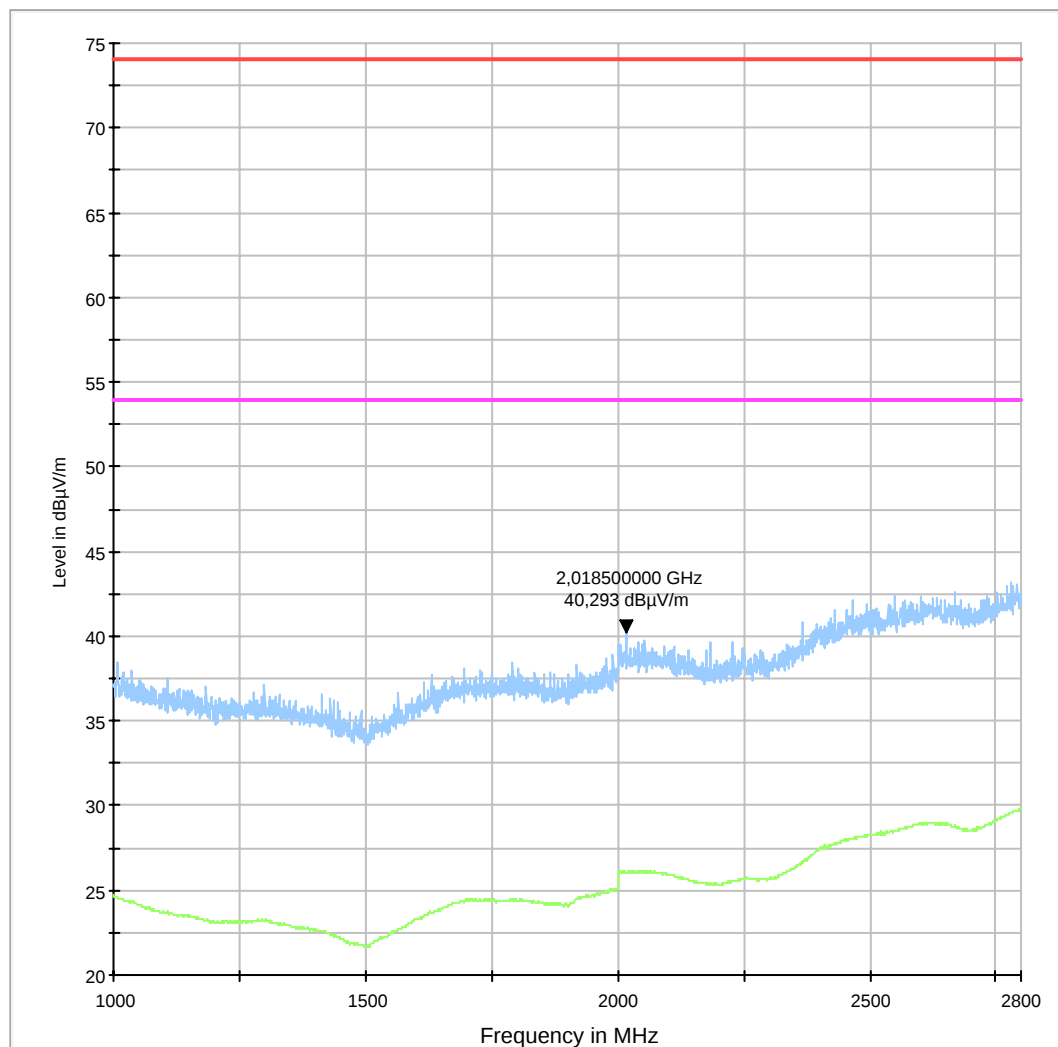
Common Information

Test Description:	Radiated field strength emission
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.109 Unintentional Radiator
Antenna polarisation:	horizontal/vertical
Operation mode:	IDLE Mode 1900
Operator Name:	Lor
Comment:	Channel middle = 661

EUT Information

Description:	
EUT:	TM5-J01 + AC/DC Adapter
Manufacturer:	Toshiba Corp.

03_1_2.7G_ohne switch H&V



EMI Auto Test Template: 03_1_2.7G_ohne switch H&V

Hardware Setup: 13_ESU_Horn_18G_Preamplifier_ohne_SM
Measurement Type: E(I)RP
Frequency Range: 1 GHz - 2,8 GHz
Graphics Level Range: 20 dBμV/m - 80 dBμV/m

Preview Measurements:
Scan Test Template: 07_ESU_1_2.7G_pre

Data Reduction:
Limit Line #1: FCC15_109_PK
Limit Line #2: FCC15_109_AV
Peak Search: 6 dB , Maximum Results: 10
Subrange Maxima: 50 Subranges , Maxima per Subrange: 1
Acceptance Offset: -20 dB
Maximum Number of Results: 30
After Data Reduction: Interactive data reduction

Frequency Zoom:
Zoom Scan Template: 09_ESU_1_2.7G_zoom

Adjustment:
Template for Single Meas.: 07_ESU_1_2.7G_pre

Final Measurements:
Template for Single Meas.: 11_ESU_1_2.7G_fin

Template for Single
Meas.:(>1GHz) 11_ESU_1_2.7G_fin

Report Settings:
Report Template: Report Setup FCC 15_109

Actions:
Test start
Notify: "Matrix richtig geschaltet ?!? Spekki (ESU) angeschlossen ?"

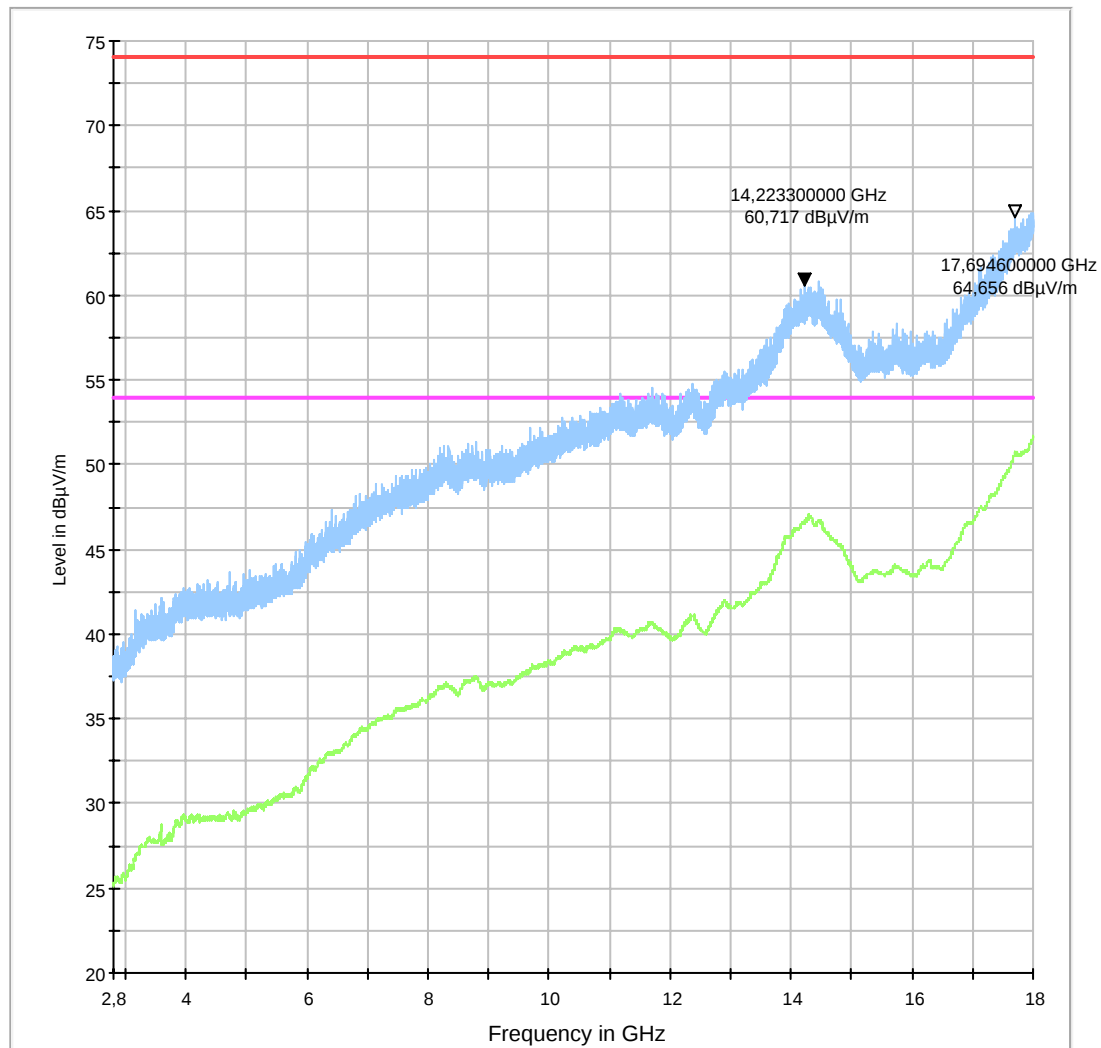
Diagram No.: 02.02**Common Information**

Test Description:	Radiated field strength emission
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.109 Unintentional Radiator
Antenna polarisation:	horizontal/vertical
Operation mode:	IDLE Mode 1900
Operator Name:	Lor
Comment:	Channel middle

EUT Information

Description:	
EUT:	TM5-J01 + AC/DC Adapter
Manufacturer:	Toshiba Corp.

04_2.7_18G_ohne switch H&V



EMI Auto Test Template: 04_2.7_18G_ohne switch H&V

Hardware Setup: 13_ESU_Horn_18G_Preamplifier_ohne_SM
 Measurement Type: E(I)RP
 Frequency Range: 2,8 GHz - 18 GHz
 Graphics Level Range: 20 dBµV/m - 80 dBµV/m

Preview Measurements:
 Scan Test Template: 08_ESU_ExtPreamp_2.7_18G_pre

Data Reduction:
 Limit Line #1: FCC15_109_PK
 Limit Line #2: FCC15_109_AV
 Peak Search: 6 dB , Maximum Results: 10
 Subrange Maxima: 50 Subranges , Maxima per Subrange: 1
 Acceptance Offset: -20 dB
 Maximum Number of Results: 30
 After Data Reduction: Interactive data reduction

Frequency Zoom:
 Zoom Scan Template: 10_ESU_ExtPreamp_2.7_18G_zoom

Adjustment:
 Template for Single Meas.: 08_ESU_ExtPreamp_2.7_18G_pre

Final Measurements:
 Template for Single Meas.: 12_ESU_ExtPreamp_2.7_18G_fin

Template for Single Meas.:(>1GHz) 12_ESU_ExtPreamp_2.7_18G_fin

Report Settings:
 Report Template: Report Setup FCC 15_109
 Create Electronic Report: PDF
 Document Name: dummy EMI Report

Actions:
 Test start
 Notify: "Switch-Matrix richtig geschaltet ? Spektrum (ESU) angeschlossen ?"

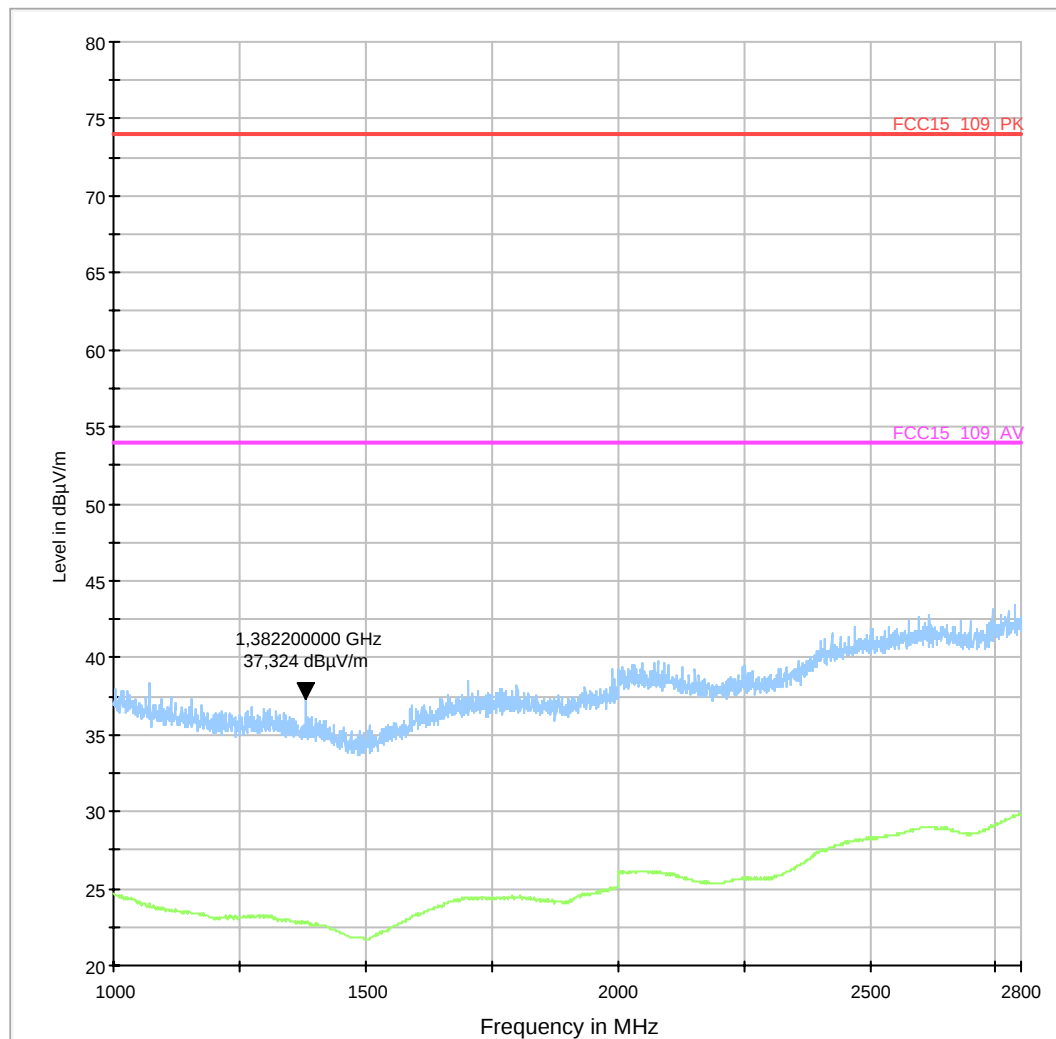
Diagram No.: 2.05**Common Information**

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.109 Unintentional Radiator
Antenna polarisation:	horizontal + vertical
Operation mode:	IDLE Mode GSM850
Operator Name:	MWa
Comment:	Uplink channel middle: 192

EUT Information

Description:	
EUT:	TM5-J01 + AC/DC Adapter
Manufacturer:	Toshiba Corp.

03_1_2.7G_ohne switch H&V



EMI Auto Test Template: 03_1_2.7G_ohne switch H&V

Hardware Setup: 13_ESU_Horn_18G_Preamp_ohne_SM
Measurement Type: E(I)RP
Frequency Range: 1 GHz - 2,8 GHz
Graphics Level Range: 20 dBµV/m - 80 dBµV/m

Preview Measurements:
Scan Test Template: 07_ESU_1_2.7G_pre

Data Reduction:
Limit Line #1: FCC15_109_PK
Limit Line #2: FCC15_109_AV
Interactive data reduction
Peak Search: 6 dB
Maximum Results: 10
Subrange Maxima: 50
Maxima per Subrange: 1
Acceptance Offset: -20 dB
Maximum Number of Results: 30

Frequency Zoom:
Zoom Scan Template: 09_ESU_1_2.7G_zoom

Adjustment:
Template for Single Meas.: 07_ESU_1_2.7G_pre

Final Measurements:
Template for Single Meas.: 11_ESU_1_2.7G_fin

Template for Single
Meas.:(>1GHz) 11_ESU_1_2.7G_fin

Report Settings:
Report Template: Report Setup FCC 15_109

Actions:
Test start
Notify: "Matrix richtig geschaltet ?!? Spekki (ESU) angeschlossen ?"

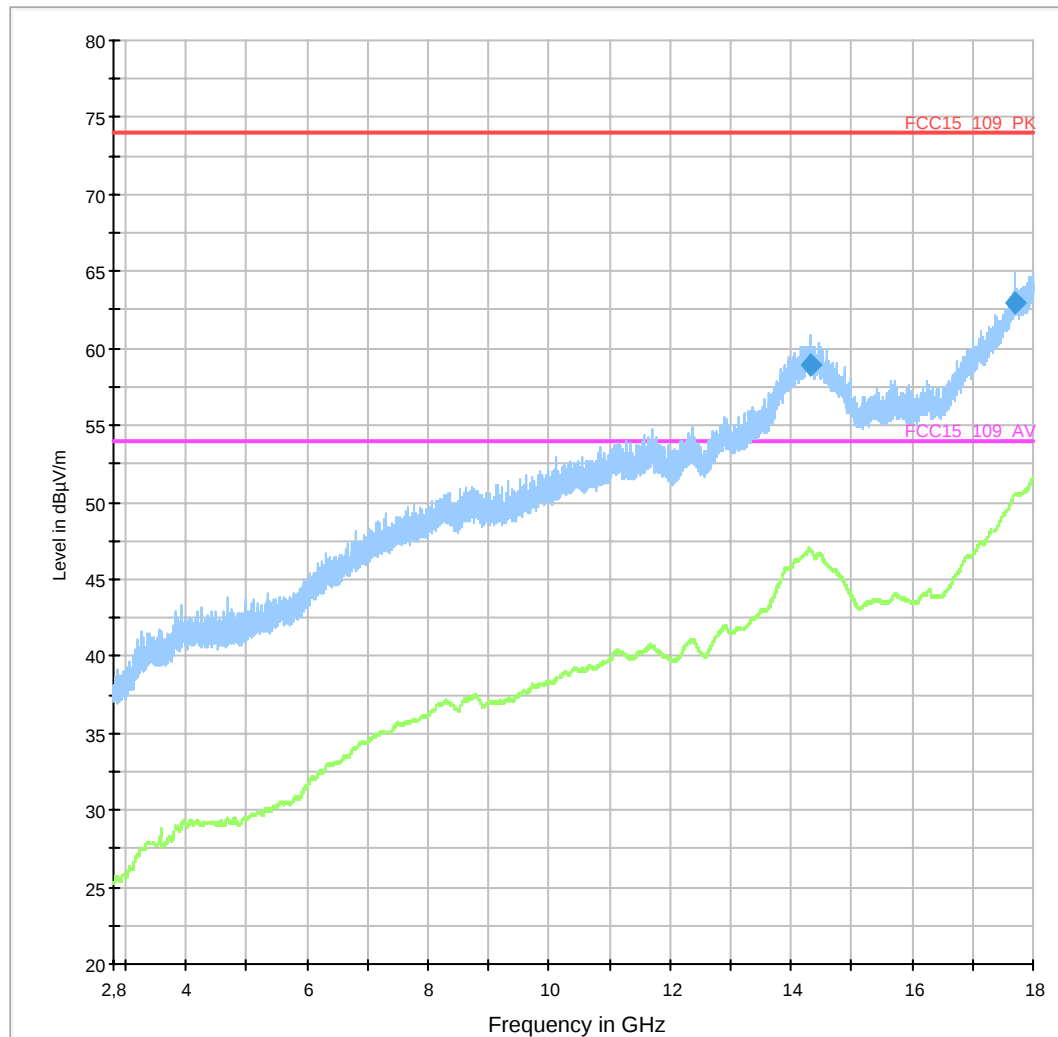
Diagram No.: 2.06**Common Information**

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.109 Unintentional Radiator
Antenna polarisation:	horizontal + vertical
Operation mode:	IDLE Mode GSM850
Operator Name:	MWa
Comment:	Uplink channel middle: 192

EUT Information

Description:	
EUT:	TM5-J01 + AC/DC Adapter
Manufacturer:	Toshiba Corp.

04_2.7_18G_ohne switch H&V



Final Result 1

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
14318.70000	59.0	100.00	1000.000	155.0	H	207.0	18.6	15.0	74.0
17715.10000	63.0	100.00	1000.000	155.0	V	-26.0	22.0	11.0	74.0

(continuation of the "Final Result 1" table from column 10 ...)

Frequency (MHz)	Comment
14318.70000	
17715.10000	

EMI Auto Test Template: 04_2.7_18G_ohne switch H&V

Hardware Setup: 13_ESU_Horn_18G_Preamplifier_ohne_SM
 Measurement Type: Open-Area-Test-Site
 Frequency Range: 2.8 GHz - 18 GHz
 Graphics Level Range: 20 dBμV/m - 80 dBμV/m

Preview Measurements:
 Scan Test Template: 08_ESU_ExtPreamplifier_2.7_18G_pre

Data Reduction:
 Limit Line #1: FCC15_109_PK
 Limit Line #2: FCC15_109_AV
 Interactive data reduction
 Peak Search: 6 dB
 Maximum Results: 10
 Subrange Maxima: 50
 Maxima per Subrange: 1
 Acceptance Offset: -20 dB
 Maximum Number of Results: 30

Frequency Zoom:
 Zoom Scan Template: 10_ESU_ExtPreamplifier_2.7_18G_zoom

Adjustment:
 Template for Single Meas.: 08_ESU_ExtPreamplifier_2.7_18G_pre

Final Measurements:
 Template for Single Meas.: 12_ESU_ExtPreamplifier_2.7_18G_fin
 Template for Single Meas.:(>1GHz) 12_ESU_ExtPreamplifier_2.7_18G_fin

Report Settings:
 Report Template: Report Setup FCC 15_109
 Create Electronic Report: PDF
 Document Name: dummy EMI Report

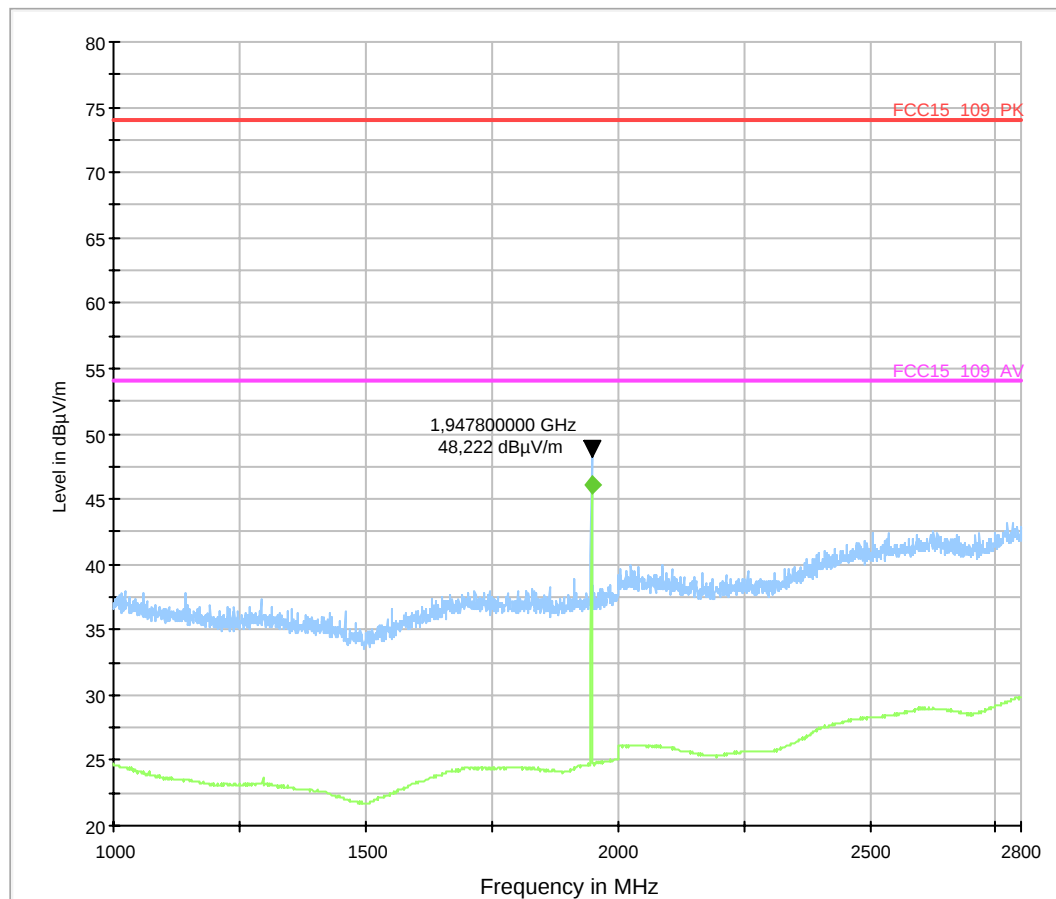
Actions:
 Test start
 Notify: "Switch-Matrix richtig geschaltet ? Spektrum (ESU) angeschlossen ?"

Diagram No.: 2.08**Common Information**

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.109 Unintentional Radiator
Antenna polarisation:	horizontal + vertical
Operation mode:	IDLE Mode GSM1900 + DATA Active Sync over USB cable
Operator Name:	MWa
Comment:	Uplink channel middle: 661

EUT Information

Description:	
EUT:	TM5-J01 + USB cable
Manufacturer:	Toshiba Corp.
Serial Number:	359238020000371
Comment:	SW. 5001.0000.22
Remark:	optical converter used
	03_1_2.7G_ohne switch H&V



EMI Auto Test Template: 03_1_2.7G_ohne switch H&V

Hardware Setup: 13_ESU_Horn_18G_Preamp_ohne_SM
Measurement Type: E(I)RP
Frequency Range: 1 GHz - 2,8 GHz
Graphics Level Range: 20 dBµV/m - 80 dBµV/m

Preview Measurements:
Scan Test Template: 07_ESU_1_2.7G_pre

Data Reduction:
Limit Line #1: FCC15_109_PK
Limit Line #2: FCC15_109_AV
Interactive data reduction
Peak Search: 6 dB
Maximum Results: 10
Subrange Maxima: 50
Maxima per Subrange: 1
Acceptance Offset: -20 dB
Maximum Number of Results: 30

Frequency Zoom:
Zoom Scan Template: 09_ESU_1_2.7G_zoom

Adjustment:
Template for Single Meas.: 07_ESU_1_2.7G_pre

Final Measurements:
Template for Single Meas.: 11_ESU_1_2.7G_fin

Template for Single
Meas.:(>1GHz) 11_ESU_1_2.7G_fin

Report Settings:
Report Template: Report Setup FCC 15_109

Actions:
Test start
Notify: "Matrix richtig geschaltet ?!? Spekki (ESU) angeschlossen ?"

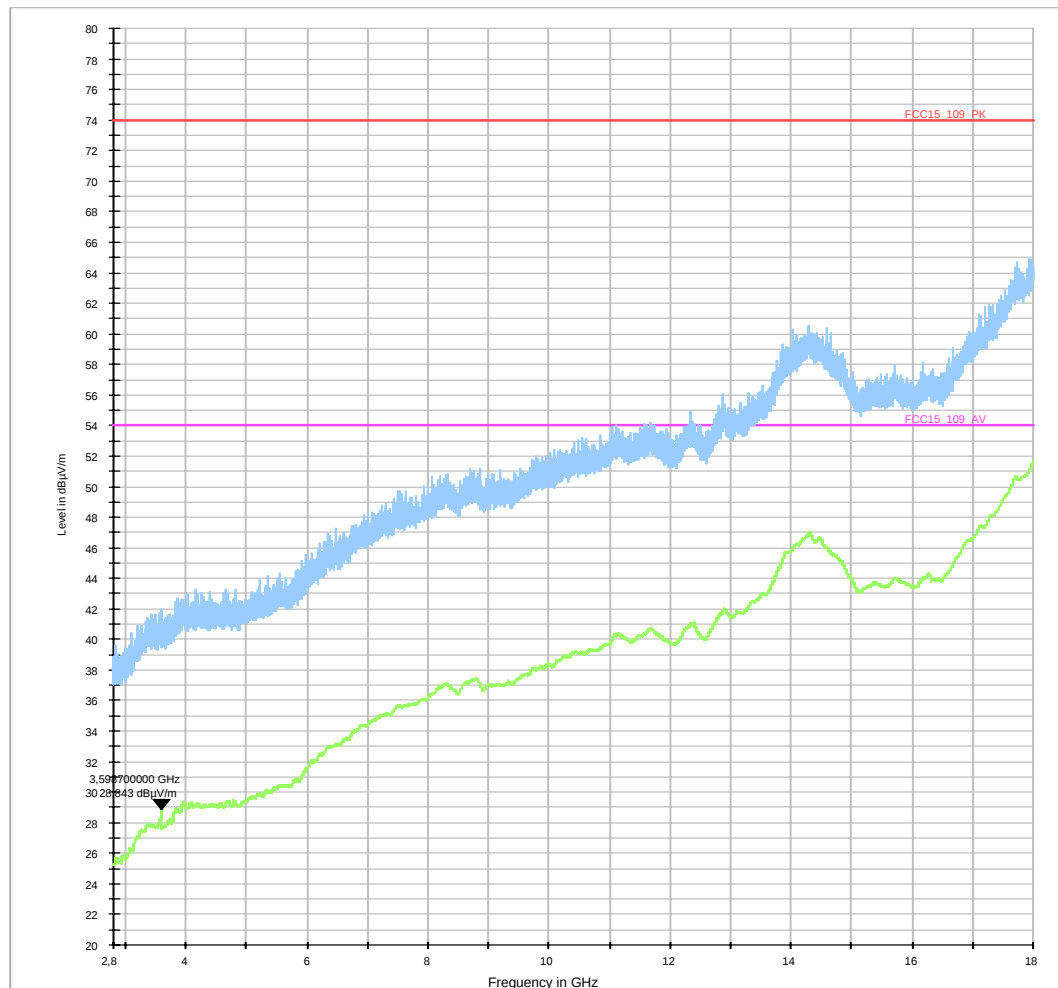
Diagram No.: 2.09**Common Information**

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.109 Unintentional Radiator
Antenna polarisation:	horizontal + vertical
Operation mode:	IDLE Mode GSM1900 + DATA Active Sync over USB cable
Operator Name:	MWa
Comment:	Uplink channel middle: 661

EUT Information

Description:	
EUT:	TM5-J01 + USB cable
Manufacturer:	Toshiba Corp.
Serial Number:	359238020000371
Comment:	SW. 5001.0000.22
Remark:	optical converter used

04_2.7_18G_ohne switch H&V



EMI Auto Test Template: 04_2.7_18G_ohne switch H&V

Hardware Setup: 13_ESU_Horn_18G_Preamplifier_ohne_SM
 Measurement Type: Open-Area-Test-Site
 Frequency Range: 2.8 GHz - 18 GHz
 Graphics Level Range: 20 dBµV/m - 80 dBµV/m

Preview Measurements:
 Scan Test Template: 08_ESU_ExtPreamp_2.7_18G_pre

Data Reduction:
 Limit Line #1: FCC15_109_PK
 Limit Line #2: FCC15_109_AV
 Interactive data reduction
 Peak Search: 6 dB
 Maximum Results: 10
 Subrange Maxima: 50
 Maxima per Subrange: 1
 Acceptance Offset: -20 dB
 Maximum Number of Results: 30

Frequency Zoom:
 Zoom Scan Template: 10_ESU_ExtPreamp_2.7_18G_zoom

Adjustment:
 Template for Single Meas.: 08_ESU_ExtPreamp_2.7_18G_pre

Final Measurements:
 Template for Single Meas.: 12_ESU_ExtPreamp_2.7_18G_fin

 Template for Single Meas.:(>1GHz) 12_ESU_ExtPreamp_2.7_18G_fin

Report Settings:
 Report Template: Report Setup FCC 15_109
 Create Electronic Report: PDF
 Document Name: dummy EMI Report

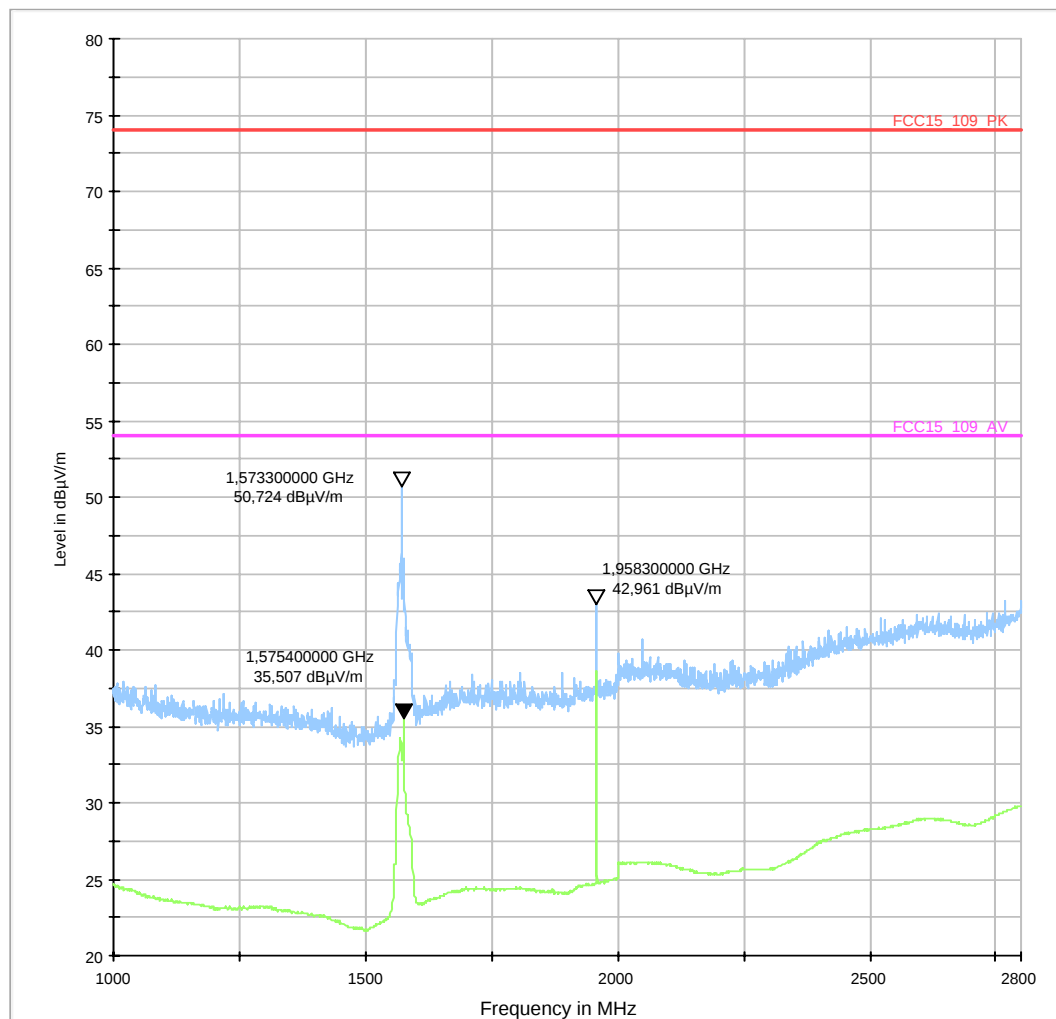
Actions:
 Test start
 Notify: "Switch-Matrix richtig geschaltet ? Spektrum (ESU) angeschlossen ?"

Diagram No.: 2.10

Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.109 Unintentional Radiator
Antenna polarisation:	horizontal + vertical
Operation mode:	GPS mode + IDLE Mode GSM1900
Operator Name:	MWa
EUT:	Toshiba Corp. TM5-J01 + AC-Adapter

03_1_2.7G_ohne switch H&V



EMI Auto Test Template: 03_1_2.7G_ohne switch H&V

Hardware Setup: 13_ESU_Horn_18G_Preamp_ohne_SM
Measurement Type: E(I)RP
Frequency Range: 1 GHz - 2,8 GHz
Graphics Level Range: 20 dB μ V/m - 80 dB μ V/m

Preview Measurements:
Scan Test Template: 07_ESU_1_2.7G_pre

Data Reduction:
Limit Line #1: FCC15_109_PK
Limit Line #2: FCC15_109_AV
Interactive data reduction
Peak Search: 6 dB
Maximum Results: 10
Subrange Maxima: 50
Maxima per Subrange: 1
Acceptance Offset: -20 dB
Maximum Number of Results: 30

Frequency Zoom:
Zoom Scan Template: 09_ESU_1_2.7G_zoom

Adjustment:
Template for Single Meas.: 07_ESU_1_2.7G_pre

Final Measurements:
Template for Single Meas.: 11_ESU_1_2.7G_fin

Template for Single
Meas.:(>1GHz) 11_ESU_1_2.7G_fin

Report Settings:
Report Template: Report Setup FCC 15_109

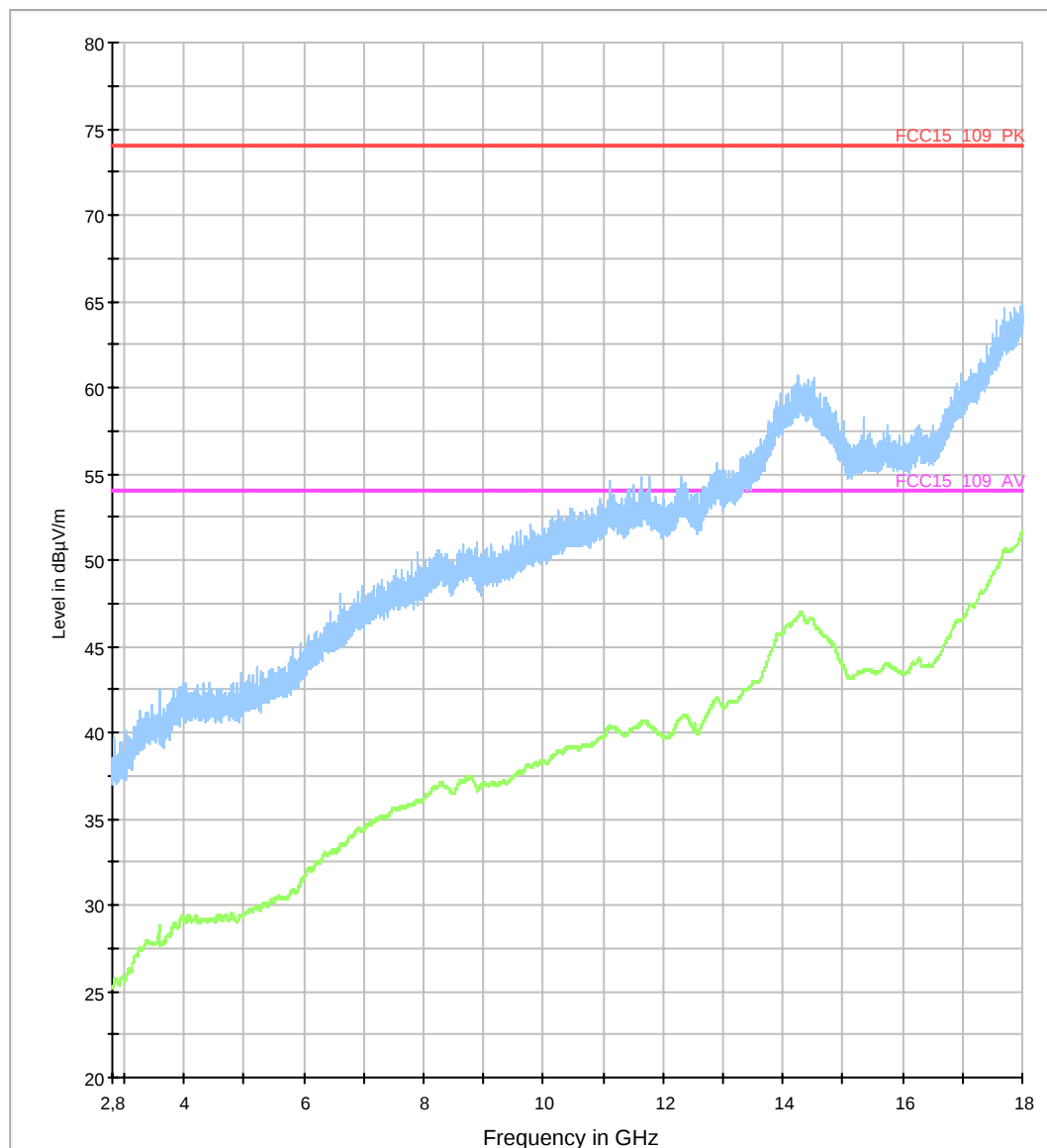
Actions:
Test start
Notify: "Matrix richtig geschaltet ?!? Spekki (ESU) angeschlossen ?"

Diagram No.: 2.11

Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.109 Unintentional Radiator
Antenna polarisation:	horizontal + vertical
Operation mode:	GPS mode + IDLE Mode GSM1900
Operator Name:	MWa
EUT:	Toshiba Corp. TM5-J01 + AC-Adapter

04_2.7_18G_ohne switch H&V



EMI Auto Test Template: 04_2.7_18G_ohne switch H&V

Hardware Setup: 13_ESU_Horn_18G_Preamp_ohne_SM
 Measurement Type: Open-Area-Test-Site
 Frequency Range: 2.8 GHz - 18 GHz
 Graphics Level Range: 20 dB μ V/m - 80 dB μ V/m

Preview Measurements:
 Scan Test Template: 08_ESU_ExtPreamp_2.7_18G_pre

Data Reduction:
 Limit Line #1: FCC15_109_PK
 Limit Line #2: FCC15_109_AV
 Interactive data reduction
 Peak Search: 6 dB
 Maximum Results: 10
 Subrange Maxima: 50
 Maxima per Subrange: 1
 Acceptance Offset: -20 dB
 Maximum Number of Results: 30

Frequency Zoom:
 Zoom Scan Template: 10_ESU_ExtPreamp_2.7_18G_zoom

Adjustment:
 Template for Single Meas.: 08_ESU_ExtPreamp_2.7_18G_pre

Final Measurements:
 Template for Single Meas.: 12_ESU_ExtPreamp_2.7_18G_fin

 Template for Single Meas.:(>1GHz) 12_ESU_ExtPreamp_2.7_18G_fin

Report Settings:
 Report Template: Report Setup FCC 15_109
 Create Electronic Report: PDF
 Document Name: dummy EMI Report

Actions:
 Test start
 Notify: "Switch-Matrix richtig geschaltet ? Spekki (ESU) angeschlossen ?"