

Annex 4: Diagrams to
TEST REPORT
 No.: 6-0592-14-2-8a

According to:
FCC Regulations
 Part 15.109

for

ASCOM AB

SH1-ACAA
 Cellular/Wi-Fi Smartphone
 (GPS & USB communication mode)

FCC ID: BXZSH1C







Laboratory Accreditation and Listings			
 Deutsche Akkreditierungsstelle D-PL-12047-01-01	 FEDERAL COMMUNICATIONS COMMISSION USA Reg. No.: 736496 MRA US-EU 0003	 Industry Canada Reg. No.: 3462D-1 Reg. No.: 3462D-2 Reg. No.: 3462D-3	 Voluntary Controls for Electromagnetic Emissions Reg. No.: R-2666 C-2914, T-1967, G-301
 AUTHORIZED RF LABORATORY	 LAB CODE 20011130-00		
accredited according to DIN EN ISO/IEC 17025			
<p align="center"> CETECOM GmbH Laboratory Radio Communications & Electromagnetic Compatibility Im Teelbruch 116 • 45219 Essen • Germany Registered in Essen, Germany, Reg. No.: HRB Essen 8984 Tel.: + 49 (0) 20 54 / 95 19-954 • Fax: + 49 (0) 20 54 / 95 19-964 E-mail: info@cetecom.com • Internet: www.cetecom.com </p>			

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1. Measurement diagrams

1.1. Conducted emissions on AC-Power lines

1.06

Common Information

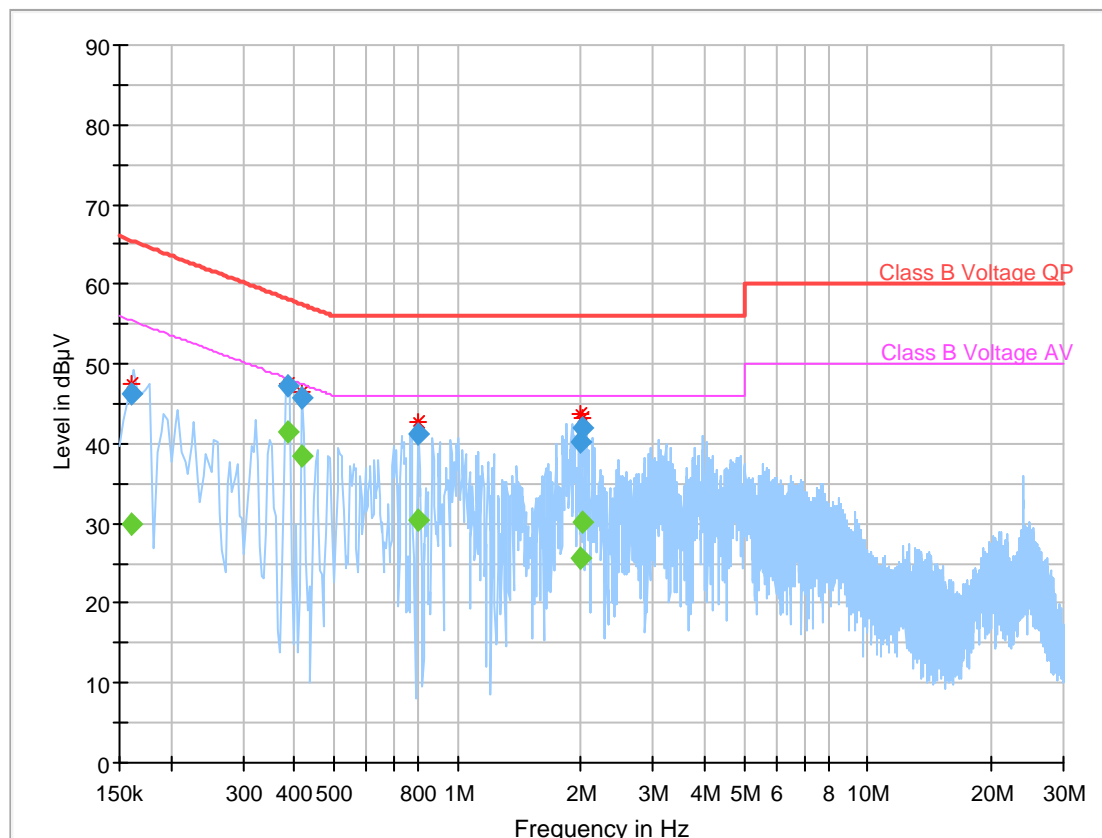
Test Description:	Conducted Voltage Measurement Class B
Test Site & Location:	Conducted Emission, CETECOM GmbH Essen
Test Software:	R&S EMC32 v9.15
Test Specification:	FCC 15.107, FCC 15.207
Operating Mode:	GPS
Measured on line:	N/L1
Diagram details:	Shows the peak values as a sum of measured ports in maxhold mode
Environmental Conditions:	Humidity: 31%rH; Temperature: 22°C
Operator:	HLA
Comments:	

EUT Information

Manufacturer:	Ascom AB
EuT:	SH1-ACAA/PF

HW Version:	
SW Version:	myco-eng 4.4.2 daily_2014-12-11_eng daily_379_214-12-11 dev-keys
Serial Number:	T26105EA0D
Connected Interfaces:	1m USB cable + USB Charger (UNIFIVE Model:UBX305-0510)
Power Supply:	120VAC
Comments:	

Full Spectrum



Final Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)
0.159844	46.15	---	65.47
0.159844	---	29.99	55.47
0.386875	47.37	---	58.13
0.386875	---	41.36	48.13
0.417031	45.67	---	57.51
0.417031	---	38.58	47.51
0.799844	41.15	---	56.00
0.799844	---	30.46	46.00
1.983438	40.27	---	56.00
1.983438	---	25.62	46.00
2.021406	41.90	---	56.00
2.021406	---	30.24	46.00

Final Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)
0.159844	46.15	---	65.47
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0.386875	---	41.36	48.13
0.417031	45.67	---	57.51
0.417031	---	38.58	47.51
0.799844	41.15	---	56.00
0.799844	---	30.46	46.00
1.983438	40.27	---	56.00
1.983438	---	25.62	46.00
2.021406	41.90	---	56.00
2.021406	---	30.24	46.00

1.2. Radiated field strength emissions, 30 MHz - 1 GHz

Diagram No. 3.01_GPS

Test description:	20.02.2015 Page 1 of 1
Test site and distance:	Electric Field Strength Measurement
Version of Testsoftware:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Distance correction:	EMC32 V8.51.0
Used filter:	not used
Technical Data:	not used
Test specification.:	please see page 2 for detailed data of measurement setup
	FCC 15.209; RSS-Gen: Issue 3
Operator:	npe
Operating conditions:	GPS RX
Power during tests:	110V 60Hz
Comment 1:	

EUT Information

Manufacturer:	Ascom AB
EuT:	SH1-ACAA/PF

HW Version:	
SW Version:	myco-eng 4.4.2 daily_2014-12-11_eng daily_379_214-12-11 dev-keys
Serial Number:	T26105EB77
Connected Interfaces:	1m USB cable + USB Charger (UNIFIVE Model:UBX305-0510)
Power Supply:	230VAC

01_FCC15.209_hor+vert_kipp

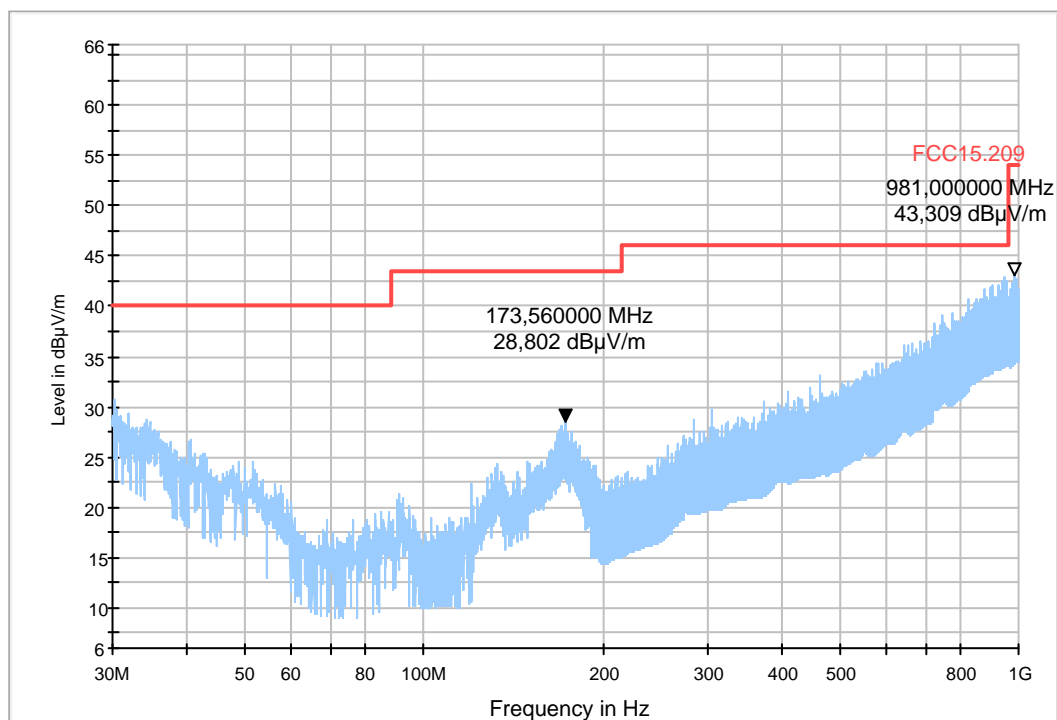


Diagram No. 3.03_USB

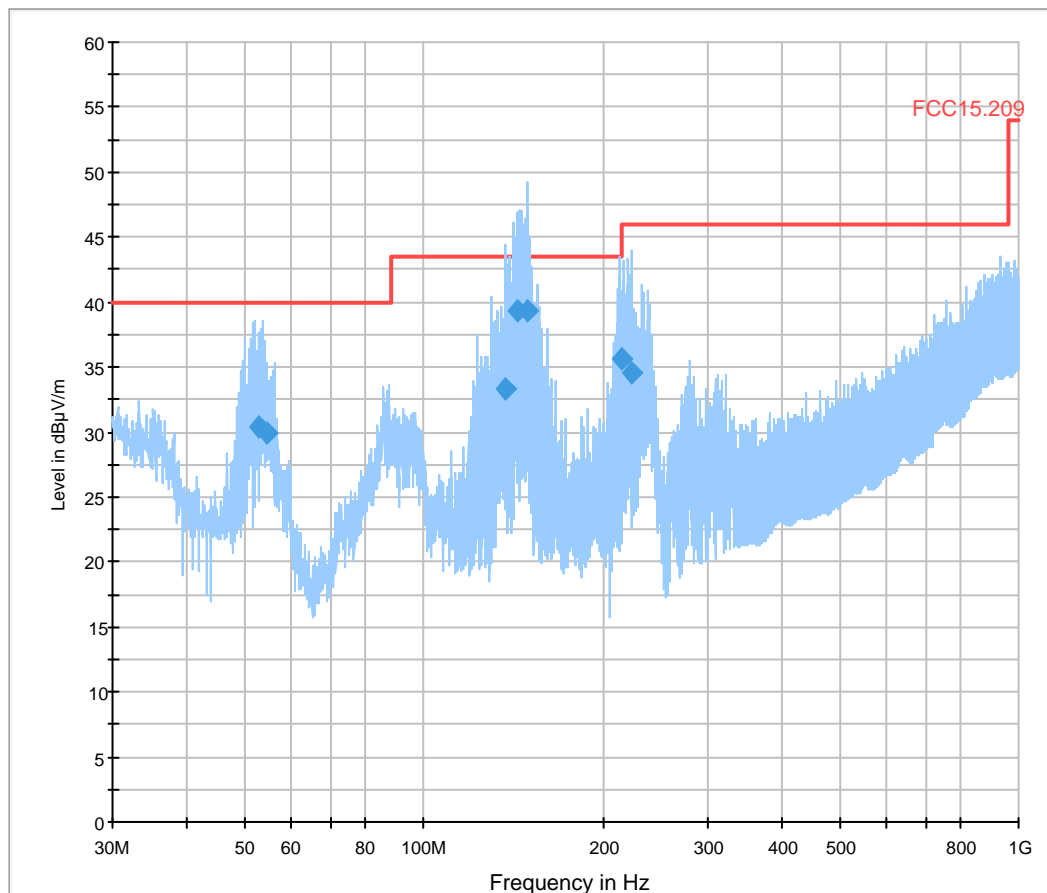
Test description:	13.05.2015 Page 1 of 2 Electric Field Strength Measurement
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Version of Testsoftware:	EMC32 V8.51.0
Distance correction:	not used
Used filter:	not used
Technical Data:	please see page 2 for detailed data of measurement setup
Test specification.:	FCC 15.209; RSS-Gen: Issue 3
Operator:	HLa
Operating conditions:	Continous transferring data from PC to EUT
Power during tests:	--
Comment 1:	--

EUT Information

Manufacturer:	Ascom AB
EuT:	SH1-ACAA/PF

HW Version:	
SW Version:	myco-eng 4.4.2 daily_2014-12-11_eng daily_379_214-12-11 dev-keys
Serial Number:	T26105EA0D
Connected Interfaces:	1m USB cable
Power Supply:	120VAC

01_FCC15.209_hor+vert_kipp



Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Margin (dB)
52.860000	30.3	1000.0	120.000	105.0	V	102.0	90.0	12.6	9.70
54.670000	29.9	1000.0	120.000	105.0	V	126.0	90.0	11.9	10.10
137.380000	33.4	1000.0	120.000	230.0	H	32.0	0.0	9.8	10.10
143.880000	39.3	1000.0	120.000	133.0	H	2.0	0.0	9.1	4.20
149.030000	39.3	1000.0	120.000	105.0	H	0.0	90.0	8.8	4.20
...

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

Frequency (MHz)	Limit (dB μ V/m)
52.860000	40.00
54.670000	40.00
137.380000	43.50
143.880000	43.50
149.030000	43.50
...	...

1.3. General Limit - Radiated emissions, above 1 GHz

8.111_GPS

Common Information

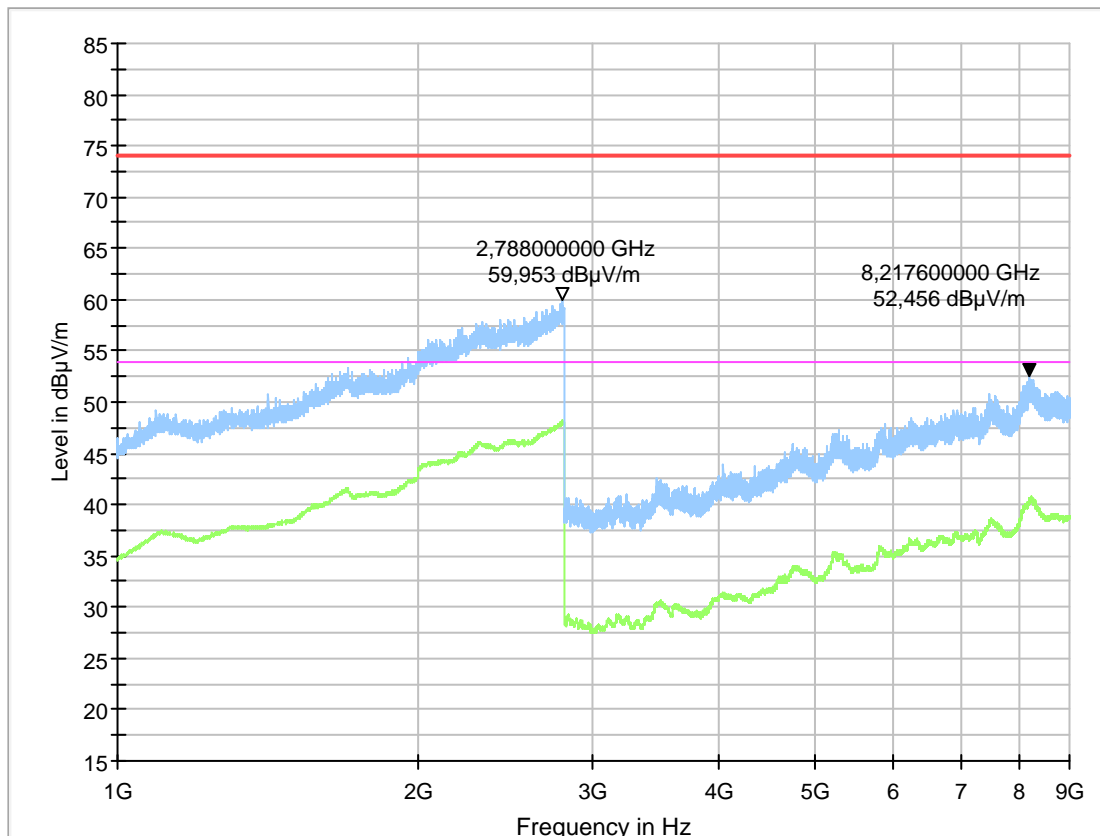
Test Description:	Radiated Filed Strength Emission
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.109
Section:	15.109
Operating Mode:	GPS RX
Equipment Class:	Class B
Environmental Conditions:	Humidity: 40%rH; Temperature: 21°C
Operator:	Kta

EUT Information

Manufacturer:	Ascom AB
EuT:	SH1-ACAA/PF

HW Version:	
SW Version:	myco-eng 4.4.2 daily_2014-12-11_eng daily_379_214-12-11 dev-keys
Serial Number:	T26105EB77
Connected Interfaces:	1m USB cable + USB Charger (UNIFIVE Model:UBX305-0510)
Power Supply:	230VAC
Comments:	

Full Spectrum



8.112_USB

Common Information

Test Description:	Radiated Filed Strength Emission
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 15.109
Section:	15.109
Operating Mode:	Continuous transferring data from PC to EUT
Equipment Class:	Class B
Environmental Conditions:	Humidity: 44%rH; Temperature: 20°C
Operator:	kre/npe

EUT Information

Manufacturer:	Ascom AB
EuT:	SH1-ACAA/PF

HW Version:	
SW Version:	myco-eng 4.4.2 daily_2015-02-20_eng daily_448_2015-02-20 dev-keys
Serial Number:	T26105GL8N
Connected Interfaces:	1m USB cable
Power Supply:	120VAC
Comments:	

Full Spectrum

