



Annex I: Radiated Emissions ($f < 30\text{MHz}$)

Test Description

Test report reference: 4_MOT_0705_TAS_FCCc

Date: 2006-05-08

1 Test Results

1.1 Spurious radiated emissions ($f < 30\text{MHz}$)

Standard FCC Part 15, 10-1-05

Subpart C

The test was performed according to: ANSI C 63.4, 2003

1.1.1 Test Description

The test set-up was made in accordance to the general provisions of ANSI C 63.4-2003. The Equipment Under Test (EUT) was set up on a non-conductive table in the anechoic chamber.

The radiated emissions measurements were made in a typical installation configuration. The measurement procedure is implemented into the EMI test software ES-K1 from R&S.

The measurement is performed in two steps:

Step 1: pre measurement

- Anechoic chamber
- Antenna distance: 10m
- Detector: Peak-Maxhold
- Frequency range: 0.009 - 0.15 and 0.15 – 30 MHz
- Frequency steps: 0.1 kHz and 5 kHz
- IF-Bandwidth: 0.2 kHz and 10 kHz
- Measuring time / Frequency step: 100 ms

Intention of this step is, to determine the radiated EMI-profile of the EUT. With this data, to reduce the number of final measurements, a data reduction with the following parameters is performed:

- Offset for acceptance analysis: Limit line – 10 dB
- Maximum number of final measurements: 12

Step 2: finale measurement

- Open area test side
- Antenna distance: according to the Standard
- Detector: Quasi-Peak

- Frequency range: 0.009 – 30 MHz
- Frequency steps: measurement at frequencies detected in step 1
- IF-Bandwidth: 200 Hz - 10 kHz
- Measuring time / Frequency step: 100 ms

1.1.2 Test Requirements / Limits

FCC part 15, subpart C, §15.209

Frequency in MHz	Limit ($\mu\text{V}/\text{m}$)	Measurement distance (m)	Limit($\text{dB}\mu\text{V}/\text{m}$ @10m)
0.009 – 0.49	2400/F(kHz)	300	Limit ($\text{dB}\mu\text{V}/\text{m}$) + 30dB
0.49 – 1.705	24000/F(kHz)	30	Limit ($\text{dB}\mu\text{V}/\text{m}$) + 10dB
1.705 - 30	30	30	Limit ($\text{dB}\mu\text{V}/\text{m}$) + 10dB

Used conversion factor: $\text{Limit}(\text{dB}\mu\text{V}/\text{m}) = 20 * \text{LOG}(\text{Limit}(\mu\text{V}/\text{m}) / 1\mu\text{V}/\text{m})$

1.1.3 Test Protocol

Temperature: 25 °C
 Air Pressure: 1020 hPa
 Humidity: 31 %

Op. Mode	Setup	Port
op-mode 1	Setup_a01	Enclosure

Polarisation	Frequency MHz	Corrected value $\text{dB}\mu\text{V}/\text{m}$			Limit $\text{dB}\mu\text{V}/\text{m}$	Limit $\text{dB}\mu\text{V}/\text{m}$	Limit $\text{dB}\mu\text{V}/\text{m}$	Delta to limit dB	Delta to limit dB
		QP	Peak	AV	QP	Peak	AV	QP/Peak	AV
0°									
90°									

Remark: No (further) spurious emissions in the range 20 dB below the limit found.
 The founded peak at 99.5kHz is emission from loop antenna power supply.
 Step 2 was not performed.

1.1.4 Test result: Spurious radiated emissions

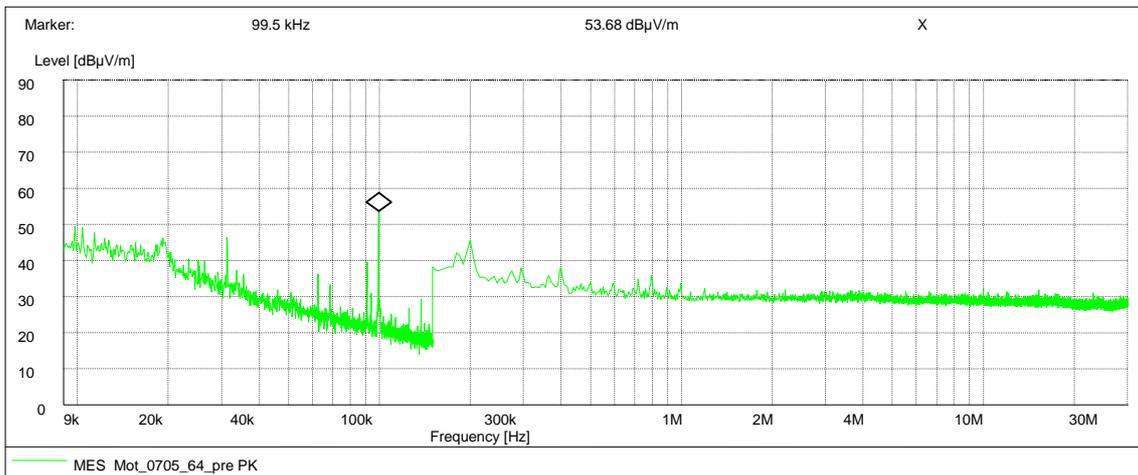
FCC Part 15, Subpart C	Op. Mode	Result
	op-mode 1	passed

2 Annex measurement plots

2.1 AC Mains conducted

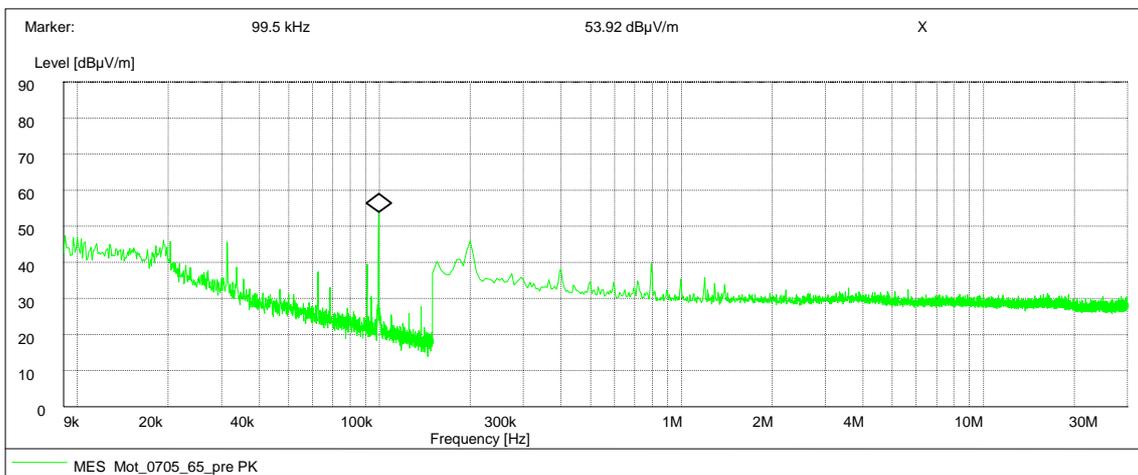
Antenna position 90°

EUT position front side

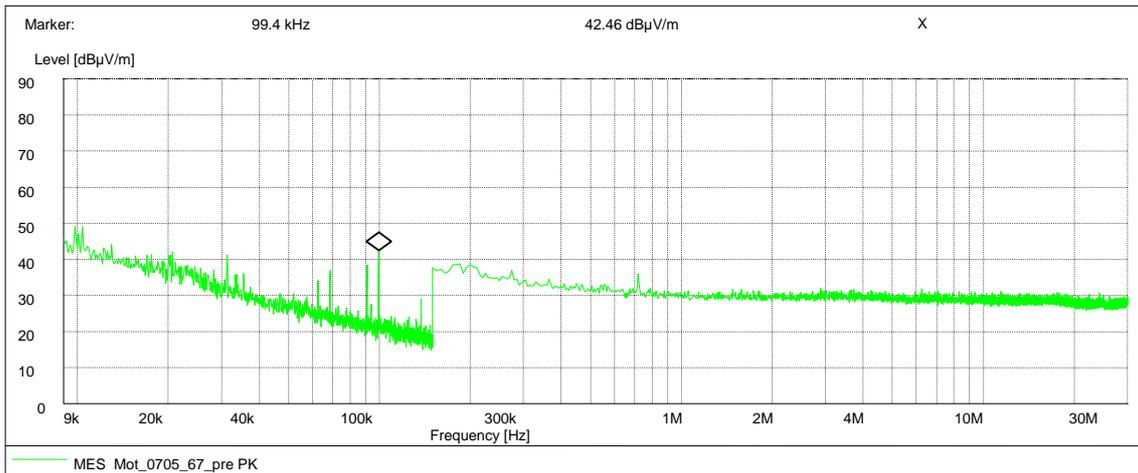


Antenna position 90°

EUT position right side



Antenna position 0°
EUT position front side



Antenna position 0°
EUT position right side

