

1.RADIATED EMISSION OF TRANSMITTER (TERMINAL)

Standard: FCC Part 15

Test procedure: paragraph 15.205
paragraph 15.209
paragraph 15.247

Test equipment:

TYPE	BRAND	EMITECH NUMBER
Test receiver ESH3	Rohde & Schwarz	1058
Test receiver ESVS 10	Rohde & Schwarz	1219
Spectrum analyzer FSP 40	Rohde & Schwarz	4088
Loop antenna	EMCO	1406
Biconical antenna HP 11966C	Hewlett Packard	728
Log periodic antenna HL 223	Rohde & Schwarz	1999
Open site	Emitech	1274
Antenna RGA-60	Electrometrics	1204
Low-noise amplifier 2 to 18 GHz	Microwave DB	1922
High pass filter HP12/3200-5AA	Filtek	
Antenna WR42	IMC	1939
Variac R213	Dereix	1419
Low-noise amplifier 18 to 26 GHz	ALC	3036

Test set up:

The system is tested in an open area test site (OATS).

The test unit is placed on a rotating table, 0.8 m from a ground plane. Zero degree azimuth corresponds to the front of the equipment under test.

Frequency range: from 9 kHz to harmonic 10 ($F_{\text{carrier}} \leq 10 \text{ GHz}$)

Bandwidth: 120 kHz ($F < 1 \text{ GHz}$) or 100 kHz, following 15.205 or 15.247
1 MHz ($F > 1 \text{ GHz}$) or 100 kHz, following 15.205 or 15.247

Distance of antenna: between 30 m and 3 m according the frequencies and the limits.

Antenna height: 1 to 4 meters

Antenna polarization: vertical and horizontal, only the highest level is recorded.

Equipment under test operating condition:

The equipment is blocked in continuous transmission mode, modulated by internal data signal.

Results:

Ambient temperature (°C): 18.5
Relative humidity (%): 55

Power source:

The polarity column refers to the antenna polarity at which the maximum emissions level is measured.

FREQUENCIES (MHz)	Detector	Antenna height (cm)	Azimuth (degree)	resolution bandwidth (kHz)	Polarization H: Horizontal V: Vertical	Field strength (dBμV/m)	Limits (dBμV/m)	Margin (dB)
353.9	QP	330	110	120	H	42.4	83.96	41.56
412.9	QP	228	0	120	V	37.8	83.96	46.16
471.9	QP	203	100	120	H	44.6	83.96	39.36
589.8	QP	138	260	120	H	45.6	83.96	38.36
648.8	QP	124	250	120	H	43.1	83.96	40.86
766.8	QP	130	300	120	H	37.5	83.96	46.46
1626.24	Peak	116	0	1000	V	42.43	74*	31.57
1626.24	Avg	116	0	1000	V	23.96	54*	30.04
3257.7	Peak	148	0	100	V	25.93	83.96	58.03
4882.3	Peak	150	52	1000	H	65.21	74*	8.79
4882.3	Avg	150	52	1000	H	43.61	54*	10.39
7323.5	Peak	246	349	1000	H	61.37	74*	12.63
7323.5	Avg	246	349	1000	H	43.55	54*	10.45
9763.9	Peak	216	224	100	V	52.81	83.96	31.15
12205	Peak	256	0	1000	V	52.46	74*	21.54
12205	Avg	256	0	1000	V	<44	54*	>10

* restricted bands of operation in 15.205, this limit corresponding at the 15.209 section.

Applicable limits: In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

The highest level recorded in a 100 kHz bandwidth is 103.96 dBμV/m on channel 40.

So the applicable limit is **83.96 dBμV/m**.

In addition, radiated emissions which fall in the restricted band, as defined in section 15.205 (a), must also comply with the radiated emission limits specified in section 15.209 (a) (see section 15.205 (c)).

TEST CONCLUSION:

RESPECTED STANDARD