3.2 De facto Equivalent isotropic radiated power

Because using an internal antenna there are no deviations from the radiated test results according 3.1.

3.2.1 Transmitter

Integral Antenna:
At the transmitter the measurement was transacted with the modulation declared by the manufacturer and the maximum available output power of the EUT.
In this arrangement the EUT fulfils the requirements of the FCC rules § 15.247, subpart C, section b. This unit uses a provisional installed internal antenna. There is no provision for an external antenna (see photo).

3.3 RF Exposure Compliance Requirements

The current test sample is a module reference design which is not assigned to a specific final product.
In this case an exposure evaluation is not mandatory.
Because the intended use of this reference design a theoretical MPE related evaluation as an example is done below, for information purposes.
FCC OET Bulletin 65 Edition 97.01 determines the equations for predicting RF fields and applicable limits.
The prediction for power density in the far-field of the antenna can be made by use of the general equation below.
This equation is generally accurate in the far-field but will over-predict power density in the near field, where it could be used for walking a "worst case" or conservative prediction.

$$S = \frac{P\,G}{4\,\pi\,R^2}$$

S – Power Density
P – Output power ERP
R – Distance
D – cable Loss
AG – Antenna Gain G= AG-D

Item	Unit	Value	Remarks
P	mW	18,2	Average value
D	dB	2	Measured value
AG	dBi	+5	Peak gain
G		1,13	Calculated Value
R	cm	2,5	Assumed value
S	mW/cm^2	0,26	Calculated value

Limits:

Limit for General Population / Uncontrolled Exposure	
Frequency (MHz)	Power Density ($mW/cm^{2)}$
1500 – 100.000	1,0

3.4 Transmitter Radiated Emissions in restricted Bands

FCC Rules: 15.247 (c), 15.205, 15.209, 15.35
Radiated emission measurements were performed from 30 MHz to 26000 MHz.
For radiated emission tests, the analyzer setting was as followings:
RES BW VID BW
Frequency <1 GHz 100 kHz 100 kHz (Peak measurements)
Frequency >1 GHz 1 MHz 1 MHz (Peak measurements)
1 MHz 1 MHz (Average measurements)
Limits:

For frequencies below 1GHz :

Frequency of Emission (MHz)	Field strength (microvolts/meter)	Field Strength (dB microvolts/meter)
30 – 88	100	40.0
88 – 216	150	43.5
216 – 960	200	46.0
Above 960	500	54.0

For frequencies above 1GHz (Average measurements).

54.0dBµV/m

For frequencies above 1GHz (Peak measurements).

Limit + 20dB

54.0dBµV/m + 20 dB= 74 dBµV/m

Remarks: See attached diagrams.

Test equipment used: ETS 0125, ETS 0271