

6 Test Results

6.1 Test: Transmitter Output Power and EIRP, and Human RF Exposure

Test Standard: FCC 15.247(b)(3-5), RSS-210 A8.4, RSS-102 4.3

Test Results: Pass

Test Environment:

Environmental Conditions During Testing:	Humidity (%Rh):	47	Pressure (mbar):	996	Ambient (°C):	26.5
Pretest Verification Performed	N/A		Equipment under Test:	Z7 PASS		

Maximum Test Parameters: The output power of the Radio Module must not exceed 1 Watt (30 dBm) and 36 dBm EIRP. The human RF Exposure limit is 1 mW/cm².

Test Equipment Used:

Equip. ID	Description	Manufacturer	Model	Serial Number	Cal Date	Cal Due
77	EMI Receiver	R & S	ES17	100044	12/29/06	12/29/07
192	Handheld Manometer	Omega	HHP-102F	19.99/29.0 PSIA	03/03/07	03/03/08
260	Humidity Temperature	Extech	445580	17-260	12/01/06	12/01/07
30	DMM	Fluke	8060A	6191012	02/08/07	02/08/08
82	Bi-ConiLog Antenna	Schaffner	CBL6112B	2726	06/24/07	06/24/08
128	RF Cable	Custom made	#1	none	07/26/07	07/26/08
131	RF Cable	Custom made	#4	none	07/26/07	07/26/08
271	Horn Antenna	A H Systems	SAS-571	787	02/24/07	02/24/08
101	EMI Receiver	Agilent	E7405A	US40240235	12/20/06	12/20/07

Test Results:

Notes: The cable loss and antenna factor were compensated for in the spectrum analyzer. The field strength obtained at 3 meters distance was converted to EIRP using the equations of DA-00-705A1. A 100 kHz bandwidth and RMS detector were used with a 50 MHz span in order to have 500 discrete non-overlapping values for integration. Since the antenna is integral, conducted output power compliance cannot be demonstrated.

As referenced in RSS-102 2.5, the EUT is exempt from SAR evaluation because the output power is less than 20 mW and RF evaluation because the operating frequency is above 1.5 GHz and the EIRP does not exceed 5 watts. The FCC human RF exposure limit is 1 mW/cm². The power density S generated by some value of EIRP at a given distance d is related by the equation:

$$S = \text{EIRP} / (4\pi d^2)$$

The distance, given a maximum EIRP of -9.45 dBm (0.1135 mW) at which the radiated power density of the EUT is equal to the human RF exposure limit is 0.0950 cm from the antenna. Note that the EUT is exempt from FCC SAR evaluation because the output power is less than 25 mW.

Antenna	Type	Model	Connector	Gain
Integral Antenna	N/A	N/A	N/A	N/A

Pol	Channel	Frequency (MHz)	Power (dBm)	Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
V	11	2405	-13.36	30.0	-11.21	36.0
V	17	2435	-12.30	30.0	-10.15	36.0
V	26	2480	-13.16	30.0	-11.01	36.0
H	11	2405	-12.77	30.0	-10.62	36.0
H	17	2435	-11.60	30.0	-9.45	36.0
H	26	2480	-11.97	30.0	-9.82	36.0





