

Name of Test: ERP Carrier Power (Radiated)

Specification: TIA/EIA 603A (Substitution Method)

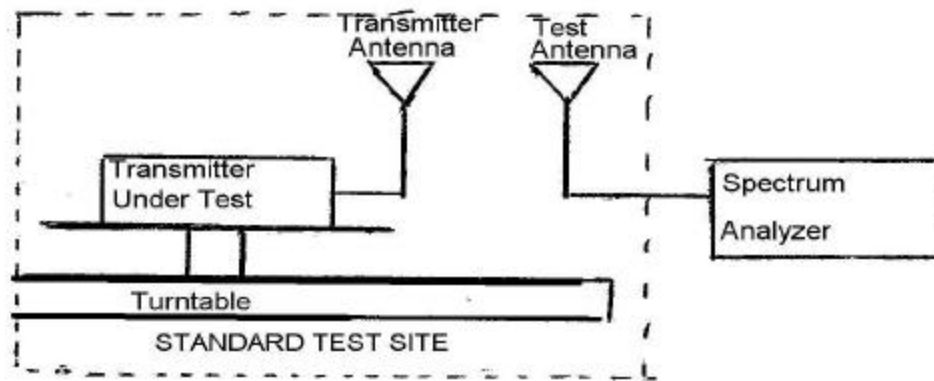
Measurement Procedure

Definition

The average radiated power of a licensed device is the equivalent power required, when delivered to a half-wave dipole or horn antenna, to produce at a distant point the same average received power as produced by the licensed device.

Method of Measurement:

- A) Connect the equipment as illustrated. Place the transmitter to be tested on the turntable in the standard test site.



- B) Raise and lower the test antenna from 1m to 6 m with the transmitter facing the antenna and record the highest received signal in dB as LVL.
- C) Repeat step B) for seven additional readings at 45° interval positions of the turntable.
- D) Replace the transmitter under test with a half-wave or horn vertically polarized antenna. The center of the antenna should be at the same location as the transmitter under test. Connect the antenna to a signal generator with a known output power and record the path loss in dB or LOSS.
- E) Calculate the average radiated output power from the readings in step C) and D) by the following:

$$\text{average radiated power} = 10 \log_{10} \left(\frac{10(LVL - LOSS)}{10} \right) \text{ (dBm)}$$

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Test Equipment

Asset	Description	s/n	Cycle	Last Cal	
<u>Transducer</u>					
	i00088	EMCO 3109-B 25MHz-300MHz	2336	12 mo.	Sep-03
X	i00089	Apriel 2001 200MHz-1GHz	001500	12 mo.	Sep-03
X	i00103	EMCO 3115 1GHz-18GHz	9208-3925	12 mo.	Jan-04
<u>Amplifier</u>					
X	i00028	HP 8449A	2749A00121	12 mo.	May-05
<u>Spectrum Analyzer</u>					
X	i00029	HP 8563E	3213A00104	12 mo.	May-05
X	i00033	HP 85462A	3625A00357	12 mo.	Sep-05
<u>Substitution Generator</u>					
X	i00067	HP 8920A Communication TS	3345U01242	12 mo.	Jun-05
	i00207	HP 8753D Network Analyzer	3410A08514	12 mo.	Jul-05

Measurement Results

g0560269: 2005-Jun-24 Fri 05:51:00

State: 2:High Power

CDMA Cellular:

Frequency Tuned, MHz	Frequency Emission, MHz	Meter, dBuV/m	CF, dB	Calc, dBm	Path Loss, dB (Sub)	EUT - Ant Loss, dB	ERP, dBm	ERP, Watts (Max)
824.730000	824.730000	102.62	25.36	30.6	-2.4	1.2	29.4	0.93
836.500000	836.500000	101.06	25.48	29.2	-1.7	1.2	29.7	
848.300000	848.300000	103.29	25.61	31.5	-3.2	1.2	29.5	

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State: 2:High Power

CDMA PCS:

Frequency Tuned, MHz	Frequency Emission, MHz	Meter, dBuV/m	CF, dB	Calc, dBm	Path Loss, dB (Sub)	EUT - Ant Loss, dB	EIRP, dBm	EIRP, Watts (Max)
1851.300000	1851.300000	90.60	31.23	26.6	-0.2	1.8	28.6	0.72
1880.000000	1880.000000	90.76	31.27	26.8	+0.1	1.8	28.5	
1908.700000	1908.700000	87.41	31.33	23.5	+3.0	1.8	28.3	

CDMA Mode:

The emission bandwidth exceeds the measurement bandwidth of the test receiver.

Test Setup:

Radiated Emissions



