9. Spurious Emissions

9.1 Test purpose

To verify that the spurious emissions shall comply with the required power level.

9.2 Conformance requirement

Outside PACS authorized band: ≤ -13 dBm in 1MHz bandwidth Within PACS authorized Rx band: ≤ -74 dBm in 300kHz bandwidth

(Refer to ANSI J-STD-021-1996 §3.4.2.3 Minimum Standard)

- 9.3 Method of measurement
- 9.3.1 Radiated spurious emissions

Measurement system diagram



Set SU to test frequency and transmit modulated with pseudo-random data in the FC (Fast Channel). According to the FCC Standards to measure the emissions or follow the steps as:

- a. Install the equipment under test on a turntable, and for the band of specified frequency, confirm the radiation of a spectrum.
- b. Among those checked in a. above, the spectrum analyzer shall be tuned to one frequency component.
- c. The measurement antenna is vertically for horizontally polarized as

inferred from the structure of the equipment under test.

- d. The turntable is rotated, and set to the maximum indication angle of radiation (average power within burst period).
- e. The measurement antenna is again raised and lowered, and set to the maximum indication.
- f. The procedure b. to e. above are carried out for all the spectrum frequencies found in a..
- g. The SU is replaced as above diagram with the reference antenna.
- h. The reference antenna is tuned as needed to the frequency of the spectrum measured.
- i. The measurement antenna is raised and lowered, and the output level of the SG is adjusted so that the largest maximum indication of the spectrum analyzer matches the maximum value found in g. above. The SG output level and the measurement antenna height at this time are both recorded.
- j. Exchange the measurement antenna as necessary, and repeat until measurement of 25MHz ~ 4GHz is finished.

(Refer to ANSI J-STD-021-1996 §3.4.2.2 Method of Measurement)

9.3.2 Conducted spurious emissions

Measurement system diagram



The SU shall be modulated with pseudo-random data in the FC (Fast Channel). Measurements shall be made from the lowest oscillator frequency in the spectrum analyzer to 6GHz. The level of the carrier frequency and the various conducted spurious frequencies shall be measured with a spectrum analyzer or highly selective receiver.

(Refer to ANSI J-STD-021-1996 §3.4.2.2 Method of Measurement)

9.4 Test requirements

- a. The test conditions are given as Annex A.
- b. Spectrum analyzer setting:

Central frequency	Frequency of the specified frequency
	range
Sweep frequency width	0Hz
Resolution bandwidth	30KHz
Y axis scale	10 dB/Div
Input level	Amplitude maximum value is about
	70-90% of full scale
Sweep mode	Single sweep
Sweep trigger	Video trigger. It is generally + voltage
	but adjustment is necessary.
Sweep time	About 20 ms