CITIZENS BROADBAND RADIO SERVICE DEVICES (CBSDs) and End User Devices (EUDs) Part 96

October 2018

PSD Limit in EIRP

Device	Maximum EIRP (dBm/10 MHz)	Maximum PSD[1] (dBm/MHz)
End User Device	23	n/a
Category A CBSD	30	20
Category B CBSD	47	37

- Note 1: Maximum PSD values are radiated. Measurements can be done conducted and add antenna gain back in.
  - Test report should list all applicable antennas and test limits should be against highest gain antenna.

CBD Grant Guidance

- CBSD grant output power needs to be listed as total EIRP for each BW.
  - Part 96 Limit dBm/10 mHz show in Test report
  - Full EIRP for each BW show in test report to match the grant output power
  - API SAS administrators
- Grant Note EP

Bandwidth	Mode	P1 (dBm/10Mhz)	P2 (dBm/10Mhz)	Power (dBm/10Mhz)	Power (W)	EIRP (dBm/10Mhz)	EIRP (W)
10 MHz	3555MHz	23.35	23.05	26.21	0.418	29.21	0.83368
	3625MHz	23.1	23.07	26.1	0.407	29.1	0.81283
	3695MHz	24.07	23.73	26.91	0.491	29.91	0.97949
20 MHz	3560MHz	22.02	21.58	24.82	0.303	27.82	0.605
	3625MHz	21.86	21.69	24.79	0.301	27.79	0.601
	3690MHz	22.49	21.88	25.21	0.332	28.21	0.662

Grant Notes	FCC Rule Parts	Frequency Range (MHZ)	Output Watts	Frequency Tolerance	Emission Designator
EP MO	96	3555 - 3695	0.979	0.0004 PPM	8M94W7D
EP MO	96	3560 - 3690	1.194	0.0042 PPM	17M8G7D

Output Power is EIRP. Professional installation required. This transmitter must be installed to provide a separation distance of at least 20-cm from all persons, and must not be co-located or operating in conjunction with any other antenna or transmitter, except in accordance with FCC multi-transmitter product procedures. This device supports LTE of 10 and 20 MHz bandwidth modes for TDD LTE Band 48. Installers and end-users must be provided with antenna installation instructions and transmitter operating conditions and instructions for satisfying RF exposure compliance.

EP: Output power is Effective Isotropic Radiated Power (EIRP)

Bandwidth	Mode	P1 (dBm/20Mhz)	P2 (dBm/20Mhz)	Power (dBm/20Mhz)	Power (W)	EIRP (dBm/20Mhz)	EIRP (W)
20 MHz	3560MHz	23.86	23.52	26.7	0.468	29.7	0.933
	3625MHz	24.15	24.05	27.11	0.514	30.11	1.026
	3690MHz	24.9	24.62	27.77	0.598	30.77	1.194

CBSD testing with authorized SAS

- **Devices may use SAS emulator developed by Wireless Innovation Forum (WInnForum) to show compliance**
  - Test Harness software available on GitHub
    - https://github.com/Wireless-Innovation-Forum/Citizens-Broadband-Radio-Service-Device/releases
  - Test Laboratory must be recognized by WInnForum
    - https://cbrs.wirelessinnovation.org/cbsd-certification-program
- WInnForum Test Harness used at FCC for verification testing of CBSDs
  - Through PAG KDB inquiry let FCC know of any ancillary equipment required for operational testing of the CBSD prior to test date (ie GPS signal).

End User Devices

- Equipment class CBE
- Can start to be tested for B48 with approved CBSDs
- PAG required
  - No verification testing at FCC
- C2PC
  - Devices initially authorized without LTE Band 48 may be authorized for operation under Part 96 rules if they comply with the permissive change rules (KDB Publication 178919).

Updating EAS Files to add CBD or CBE: Non-Composite Devices

Original TCB Grant	Actions Required
Original TCB Grant less than 30 days prior	• TCB modify original grant to composite • TCB grant new original grant CBD or CBE
Original TCB Grant greater than 30 days prior	• TCB request FCC put original grant in audit • TCB modify original grant to composite • TCB grant new original grant CBD or CBE