GE MDS

175 Science Parkway, Rochester, New York 14620 USA
(585) 242-9600 Phone
(585) 242-9620 Fax
May 8th, 2015

Subject: Part 90 Spectral Efficiency

Product: GE MDS, MDS LN400, QAM based digital transceiver
Pending, FCC ID: E5MDS-LN400

Attention: Certification Manager

"Applications for part 90 certification of transmitters designed to operate on frequencies in the 150.8– 162.0125 MHz, 173.2–173.4 MHz, and/or 421–512 MHz bands, received on or after January 1, 2005, must include a certification that the equipment meets a spectrum efficiency standard of one voice channel per 6.25 kHz of channel bandwidth.
Additionally, if the equipment is capable of transmitting data, has transmitter output power greater than 500 mW, and has a channel bandwidth of more than 6.25 kHz, the equipment must be capable of supporting a minimum data rate of 4800 bits per second per 6.25 kHz of channel bandwidth."

The GE MDS LN400 data transceiver can handle channel bandwidths of 6.25, 12.5 and 25.0 kHz channels using modulations of QPSK, 16QAM, and 64QAM.

Bandwidth kHz	Modem symbols per second	QPSK (x2) OTA bps	16QAM (x4) OTA bps	64QAM (x6) OTA bps	Maximum Output Power	Comments / Restrictions
6.25	4800	9600	19200	28800	41 dBm	
12.5	9600	19200	38400	57600	41 dBm	
12.5	10000	20000	40000	60000	41 dBm	
25.0	16000	32000	64000	96000	41 dBm	Max. Rate depends on operating frequency
25.0	20000	40000	80000	12000	41 dBm	Max. Rate depends on operating frequency

This letter serves as attestation supporting evidence for spectral efficiency.

If you have any queries, please do not hesitate to contact me at 585 242-8440:
Yours truly,

Signed:..... Name: Dennis McCarthy .....

Agency Compliance/Safety Engineer
Technology
GE Digital Energy – **MDS**
T +1 (585) 242-8440
F +1 (585) 241-5590
M +1 585 734-3899

E Dennis.McCarthy2@ge.com
www.GEDigitalEnergy.com
175 Science Parkway
Rochester, NY, 14620 USA
General Electric Company