

REQUEST FOR WAIVER 02-26-08

INSTRUMENT / SYSTEM: CRaTER Instrument

SUBSYSTEM: CRaTER Instrument Subsystem

COMPONENT: CRaTER Electronics and Sensor Components

REQUIREMENTS REQUESTED TO WAIVE: - The CRaTER Instrument EMI Conducted CE01 & CE03 and the Radiated RE02 emission tests as described below shall not exceed the values shown in the Figure 3-6 and 3-8 of the LRO Electrical Specification 431-SPEC-000008.

TEST DATE: 10/16/2007

BACKGROUND: During the CRaTER Instrument EMI Test SN001 was replaced with SN002. The serial numbers and the associated EMI Testing that each unit was subjected to is described in the chronographic sequence summary below. The CRaTER Instrument box seams remained free of copper tape during all phases of the RE02 testing and debug. None of the harness were wrapped with aluminum foil during any of the radiated testing or debugging.

SN002	CE01 30Hz to 20kHz Conducted Emissions Diff Mode	Failed
SN002	CE01 30Hz to 20kHz Conducted Emissions Common Mode	Passed
SN002	CE03 20kHz to 50MHz Conducted Emissions Diff Mode	Failed
SN002	CE03 20kHz to 50MHz Conducted Emissions Common Mode	Failed
SN002	RE02 14kHz to 18GHz Radiated Emissions	Failed
SN002	RS03 14kHz to 18GHz Radiated Susceptibility	Passed
SN001	CS01 30Hz to 50kHz Conducted Susceptibility Power Line	Passed
SN001	CS02 50kHz to 400MHz Conducted Susceptibility Power Line	Passed
SN001	CS06 Transients Spike Conducted Susceptibility Power Line	Passed

PROBLEMS:

CE01: CE01 testing on the CRaTER Instrument SN002 exceeded the emissions limits by <1db at a frequency near 12kHz for the differential mode measurements only.

CE03: CE03 testing on the CRaTER SN002 a violation of radiated emissions exceeded limits by 11db worst case at a frequency of 10.0MHz and <10dB from 10+MHz to 12MHz for differential mode and <11dB from 10MHz to 12MHz for Common Mode.

RE02: The RE02 testing on CRaTER SN002 had a violation of radiated emissions exceeded the limits by 60db at various discrete frequencies from 520kHz to 105MHz for SN002. CRaTER SN001 RE02 test had similar but better results. The CRaTER Instrument violated radiated emissions exceeded limits by 42db at various discrete frequencies from 6MHz to 95MHz in the vertical polarization. The horizontal polarization results were very similar and are therefore not presented here. SN001 emissions exceedences are being addressed here see Figure 1.

RS03: The CRaTER Instrument SN001 did not exhibit any susceptibilities during the RS03 radiated susceptibility test. CRaTER SN001 was not tested for RS03 because it was taken back to MIT for box rework.

SOLUTION: We request a waiver to accept the CRaTER Instrument as is.

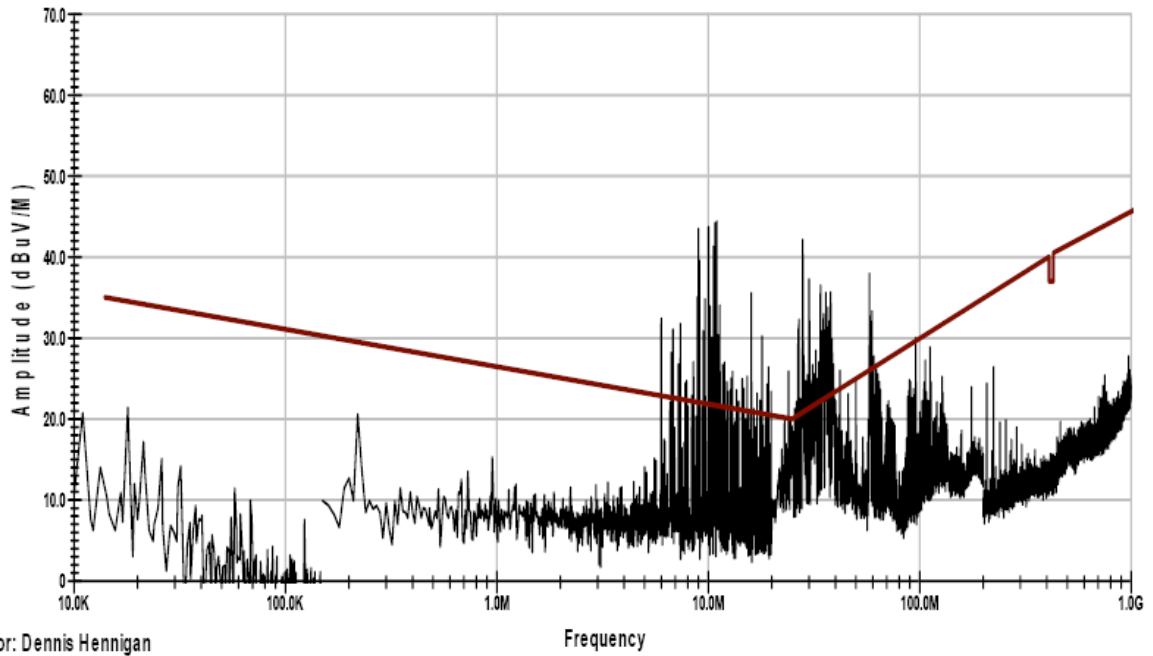
RATIONALE FOR REQUEST: There are no emissions that are a concern to the LRO SC or other instruments.

CHOMERICS TEST SERVICES

MIT

MIL-STD 461C RE-02 Narrowband Vertical Polarity

Equipment ID - CRaTER
Serial# - 1 Modified unit
Engineering Test - #3
10 kHz to 1GHz -



Operator: Dennis Hennigan

Figure 1, CRaTER RE02 14kHz to 1GHz Emissions Plot