

S or L BAND FM/SOQPSK

Digital/Analog

ON-BOARD TRANSMITTER

Ref. DTX5563-DA-20 S Band
OR
Ref. DTX5563-DA-20 L Band



Version: R1.

Special Features:

- **Automatic Data Rate Tracking**

Premod filtering and deviation automatically track the data rate, with no programming or configuration required.

- **Intuitive Control**

Straightforward configuration and control and platform-independence with serial terminal programming

- **PCM/FM**

PCM/FM (ARTM Tier 0) 20 Mbps.

- **Variable Power Option Available.**

5 steps and RF power off (30 dBm, 33 dBm, 36 dBm, 39 dBm and 43 dBm) (accuracy ± 1 dB).

- **IRIG106 Randomizer Option Available**

15 stages LFSR per IRIG106 selectable for bypass or enable.

- **Analog FM**

Include linear FM modulation for video, analog signal or analog PCM transmission.

Emphasis filter CCIR405 for Video PAL signal.

- **Temperature monitoring.**

The user can read the internal power supply and RF boards temperature.

RF SPECIFICATIONS

Carrier frequency range: 2200 to 2400 MHz S band or 1400 to 1600 MHz L band (must be specified when order).

RF output power: up to 20 W (43 dBm ± 1 dB) all conditions.

VSWR : better than 1.8:1

Load mismatch (RF = open or short): no degradation.

Spurious outputs: In accordance IRIG106-96 (-60 dBc typical).

Harmonic: In accordance IRIG106-96.

Carrier frequency tuning step: 125 kHz (for rate 1Mbits/s to 20 Mbits/s), 250 kHz (for rate below 1 Mbits/s).

Carrier frequency stability: ± 2.5 ppm over temperature range. ± 7.5 ppm all clauses including aging over 5 years.

Modulation: user selectable digital PCM/FM(Tier 0), SOQPSK-TG (Tier I) and analog video FM.

Spectral occupancy: 99% energy with theoretic bandwidth for FM modulated with PCM data.

Deviation linearity: 2% max

Modulation distortion: 2%

ANALOG FM MODULATION SPECIFICATIONS

Modulation input impedance: 50 or 75 ohms, AC or DC selectable.

Analog input Bandwidth: DC to 15 MHz – 3dB or 30Hz to 15 MHz – 3 dB.

Composite video signal PAL with or without CCIR 405 emphasis, 1Vpp 75 ohms.

Any signal: 0.25,0.5,1,2,5 or 10V Vpp programmable
Deviation sensitivity: 0.5, 1, 2 or 5 MHz / Vpp programmable.

DIGITAL PCM/FM and SOQPSK-TG MODULATION SPECIFICATIONS

Modulation: user selectable digital PCM/FM, SOQPSK-TG (Tier I) and analog video FM.

Data rate: 1Mbps to 20 Mbps automatic adaptation of deviation according to Tier 0 and Tier I IRIG mask.

Data rate: 100 Kbps to 20 Mbps option available automatic adaptation of deviation according to Tier 0 and Tier I IRIG mask..

Signal interfaces: Serial data with separate synchronous clock, TTL 5V or RS422.

Modulation input impedance: 50 ohms with TTL inputs.

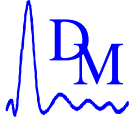
Control interface: RS-232 serial control.

*Specifications are subject to change without notice.

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POWER REQUIREMENT

28 V DC (18 V min to 36 V max)
Current: 3A under 28 V @ 20 W RF.
Reverse polarity protection
Thermal protection.

ENVIRONMENTAL CONDITIONS

Operating temperature range: - 30 to +85° C.
(baseplate).
Operating Humidity: 0 to 95 % non condensing.
Vibration: 20 Hz to 2000 Hz:
19.6 g random 3 axes.
Shock: ½ sinus 5 ms, 60 g 3 axes.
Acceleration: 70 g 3 axes.

Altitude: 100 000 ft maximum.

PHYSICAL SECTION

Dimensions (L x h x l): 99 x 63.5 x 33 mm without
heatsink, need thermal resistance below 0.35°K/W for
reliable operating without permanent damage and
keep baseplate below 85°C.

Weight: 370 g (without heatsink)

RF output connector: SMA(F)

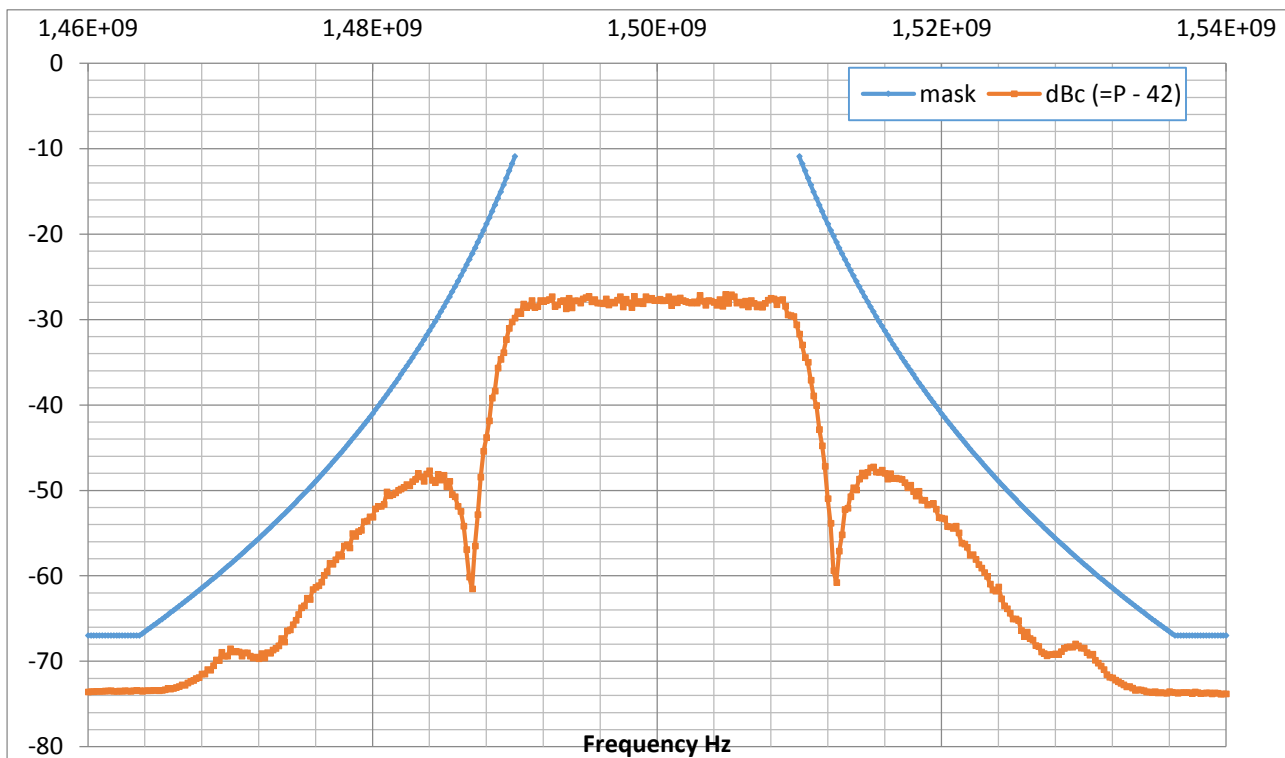
Mod Input Connectors:

- 1x SMA(M) for analog input

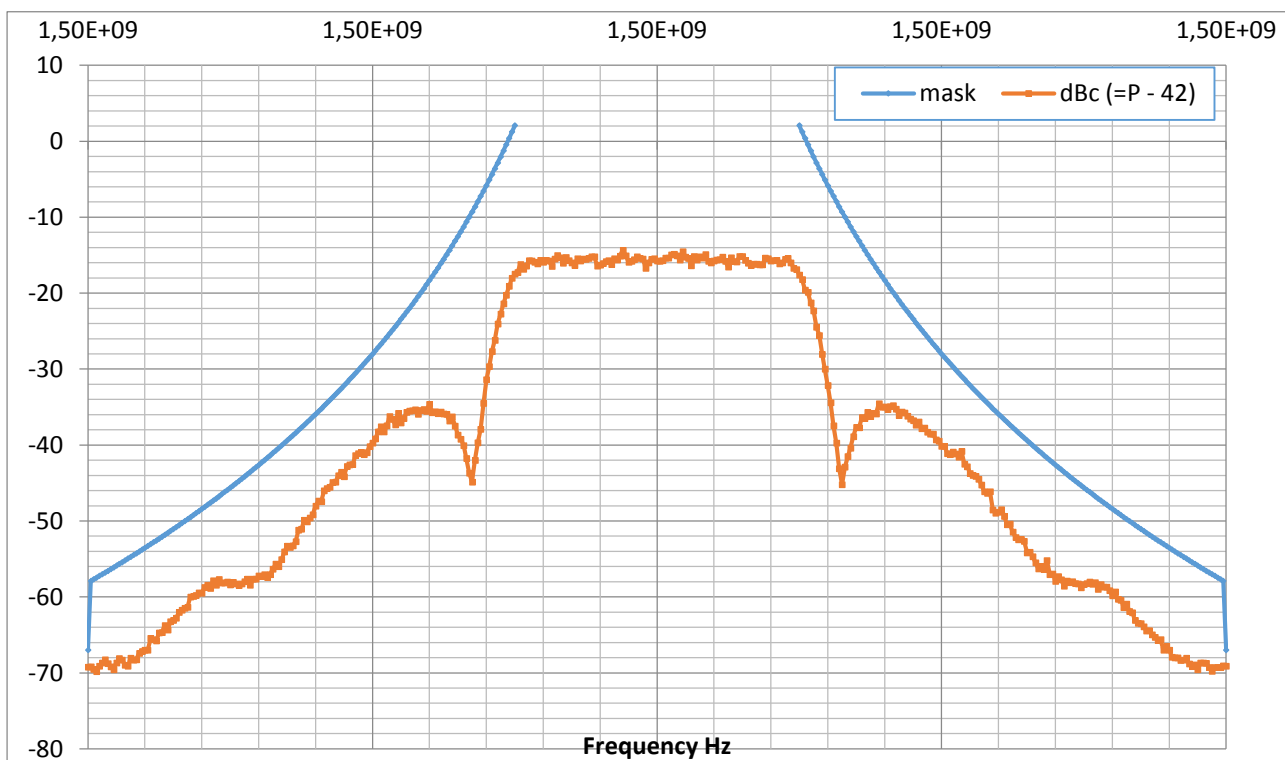
Power connector, Signal and Control interfaces : single
connector MDM 15 type.

**Specifications are subject to change without notice.*

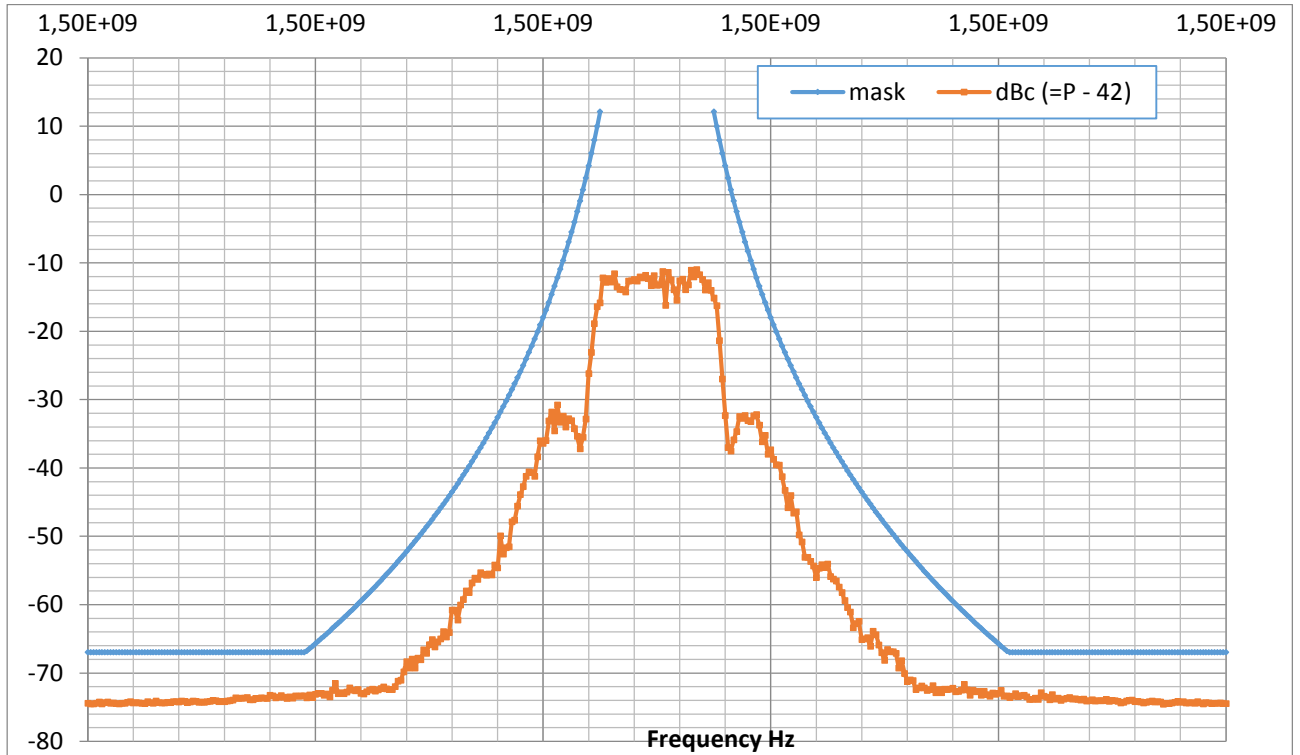
PCM FM 20 Mbits/s PN 15 Tier 0, 20 W RF.



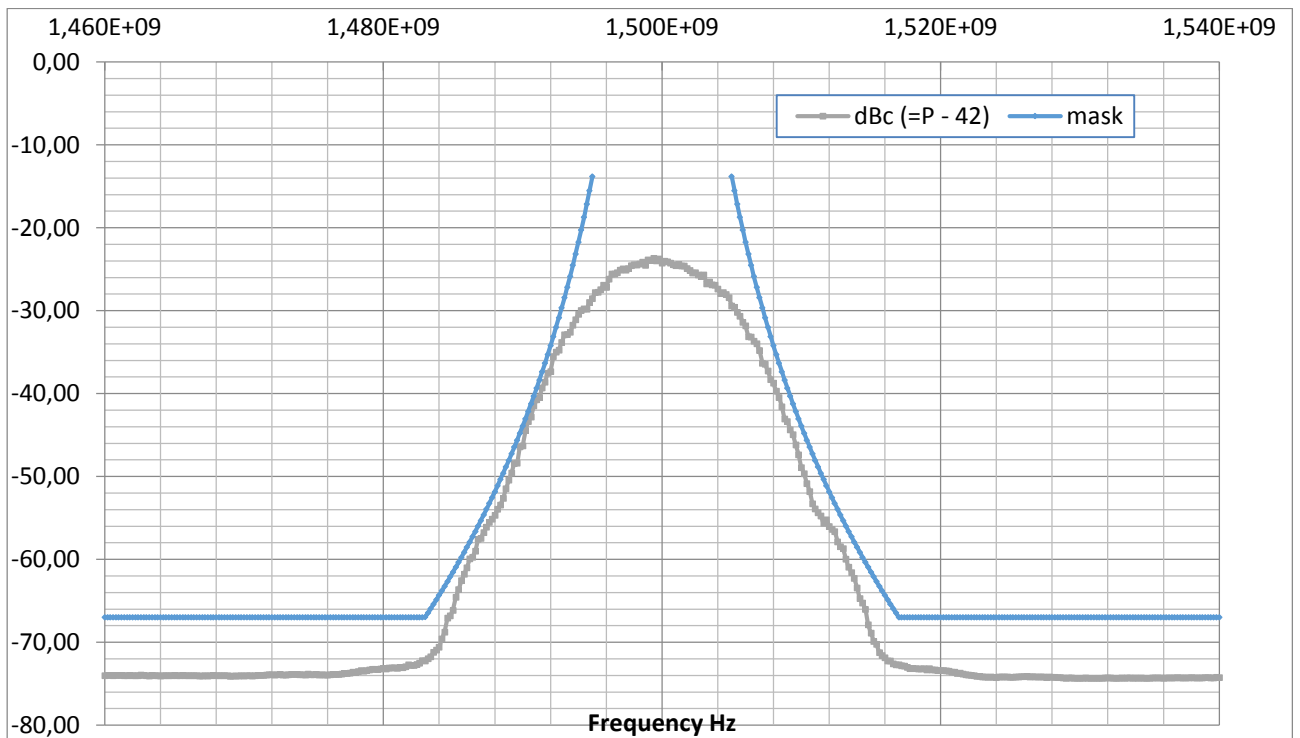
PCM FM 1 Mbits/s PN 15 Tier 0, 20 W RF.



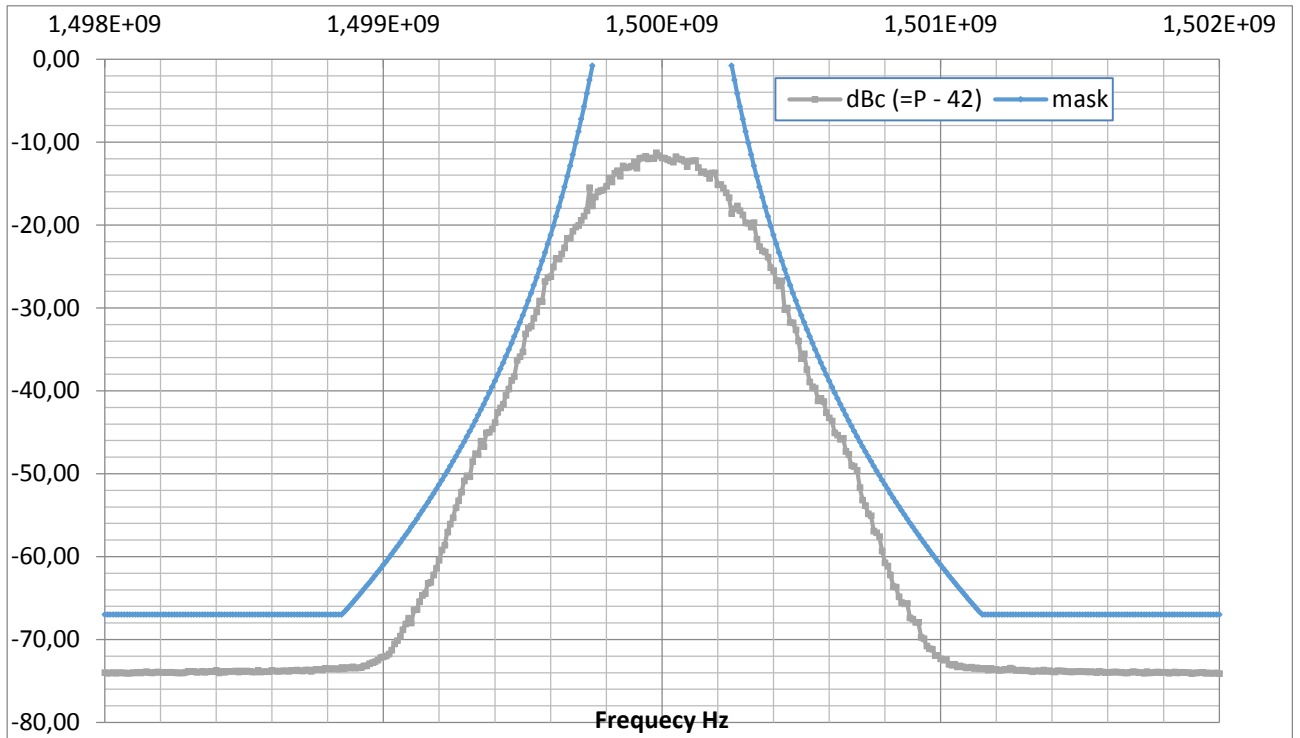
PCM FM 100 kbits/s PN 15 Tier 0, 20 W RF.



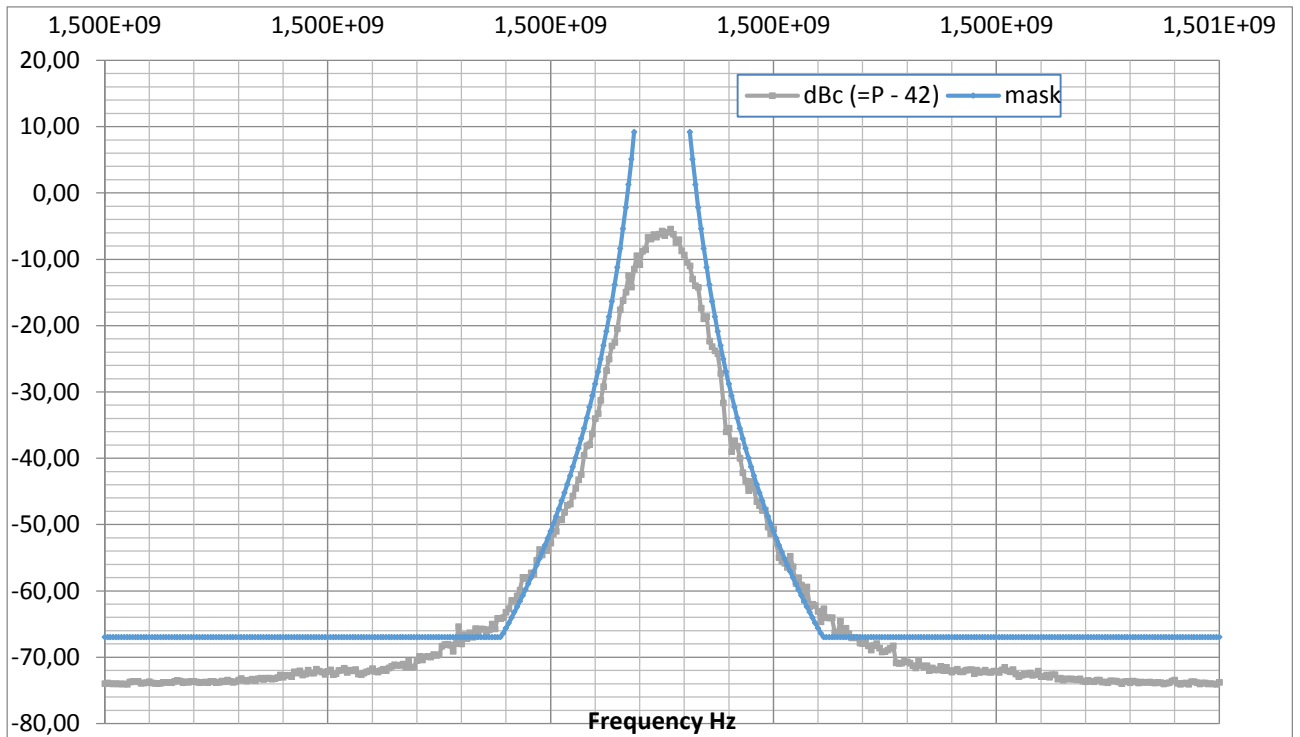
SOQPSK -TG 20 Mbits/s PN 15 Tier 1, 20 W RF.



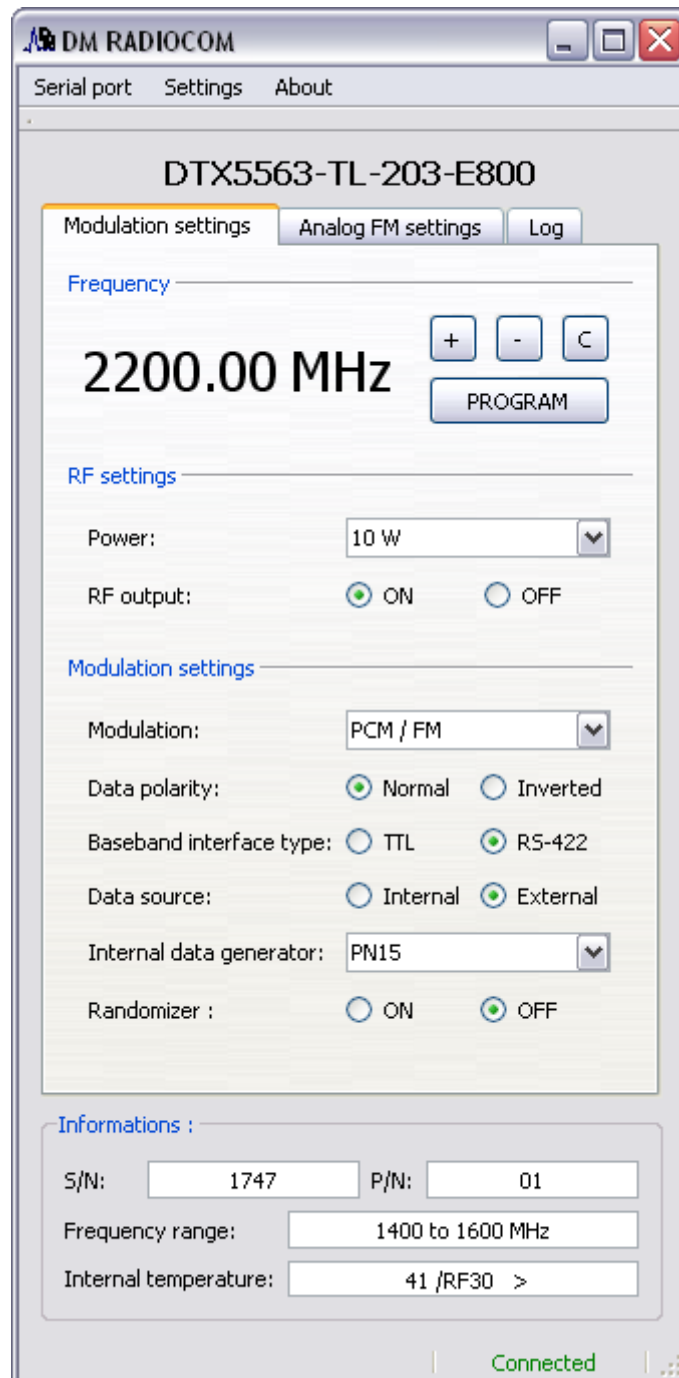
SOQPSK -TG 1 Mbits/s PN 15 Tier 1, 20 W RF.

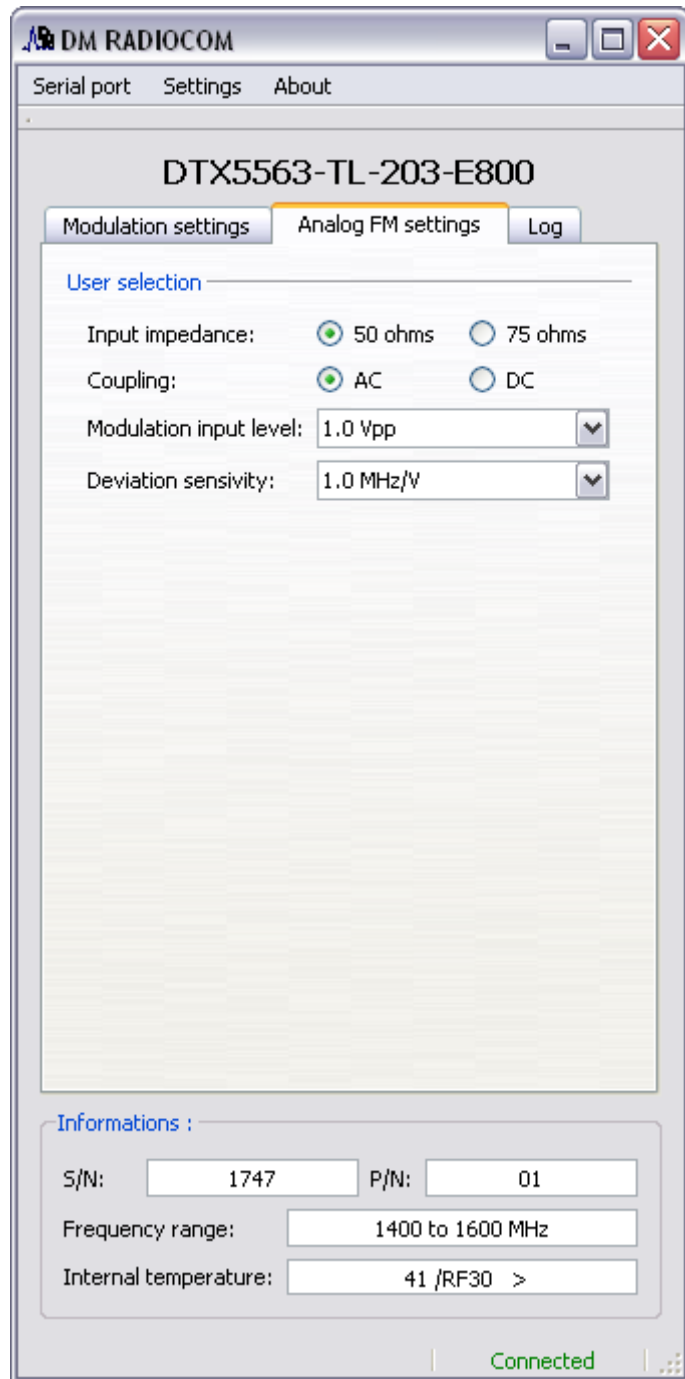


SOQPSK -TG 100 kbits/s PN 15 Tier 1, 20 W RF.



Example of Graphical User Interface (optional).





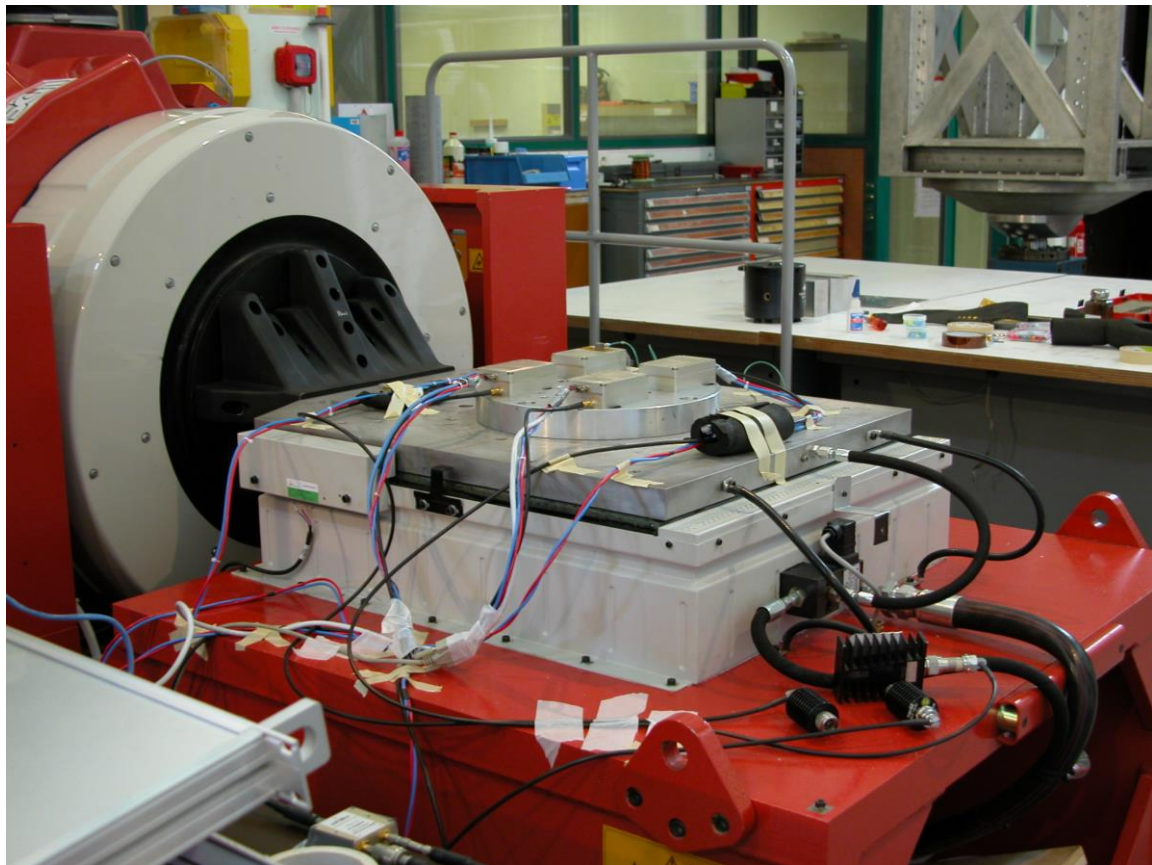
EMC EMI Tests.

Désignation
MIL STD 461F CE102
MIL STD 461F CE106
MIL STD 461F RE101
MIL STD 461F RE102
MIL STD 461F CS101
MIL STD 461F CS114
MIL STD 461F CS115
MIL STD 461F CS116
MIL STD 461F RS101
MIL STD 461F RS103

EMC Tests.

Désignation
MIL STD 704F Figure 13
MIL STD 704F Figure 14

Example of Environmental Test made on the 20 W S band transmitter.



Random Vibrations Axes X, Y, Z.

20 – 80Hz :0. 1g²/Hz

80 – 350Hz: 0. 4g²/Hz

350 – 2000Hz: 0. 1g²/Hz.

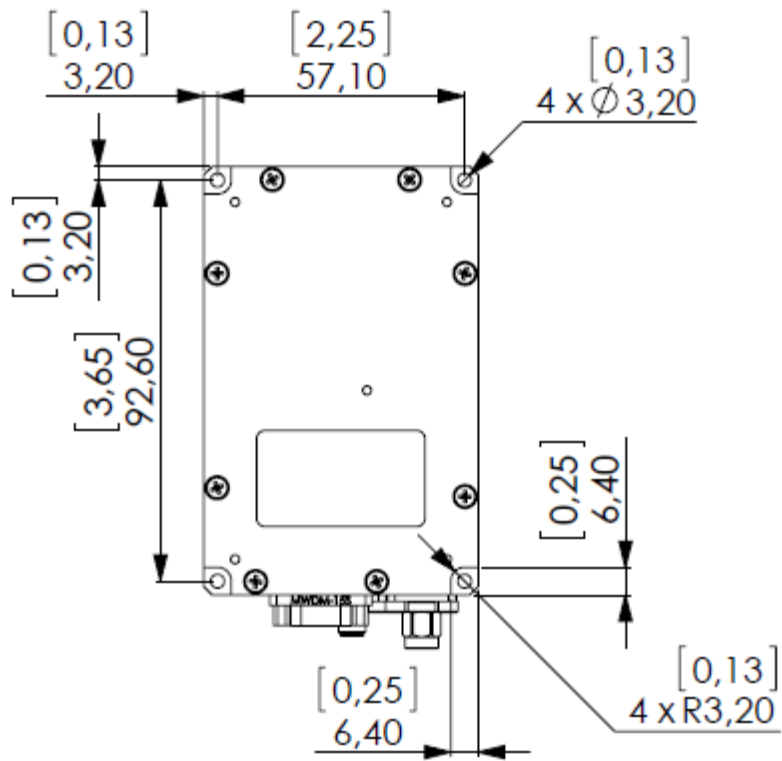
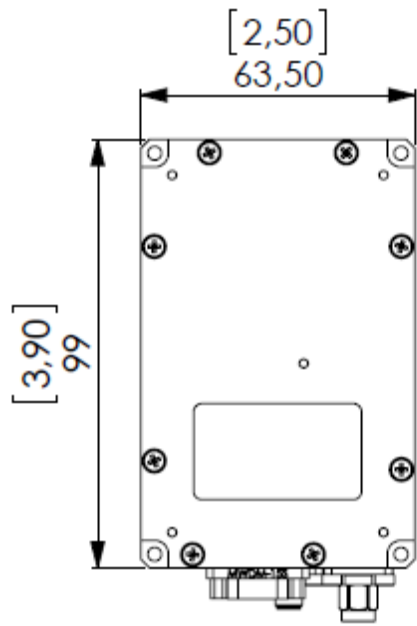
Global Level 20.4g RMS, Test duration 10min each axe.

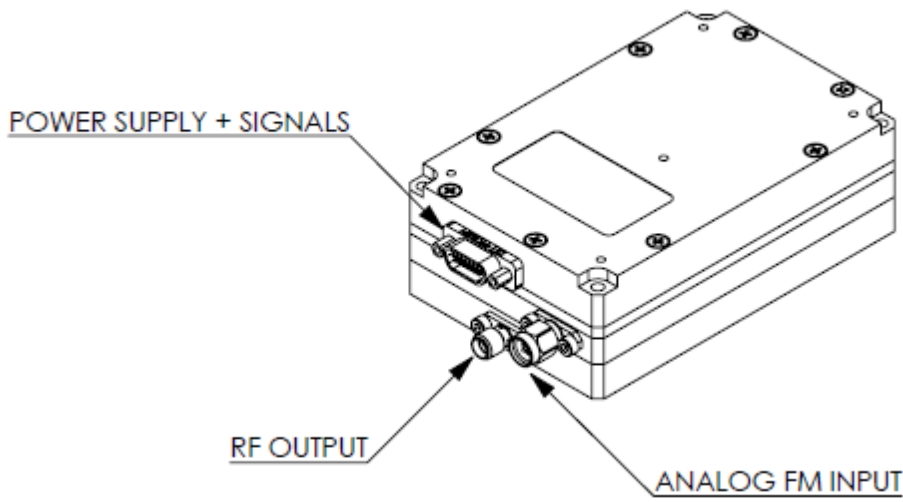
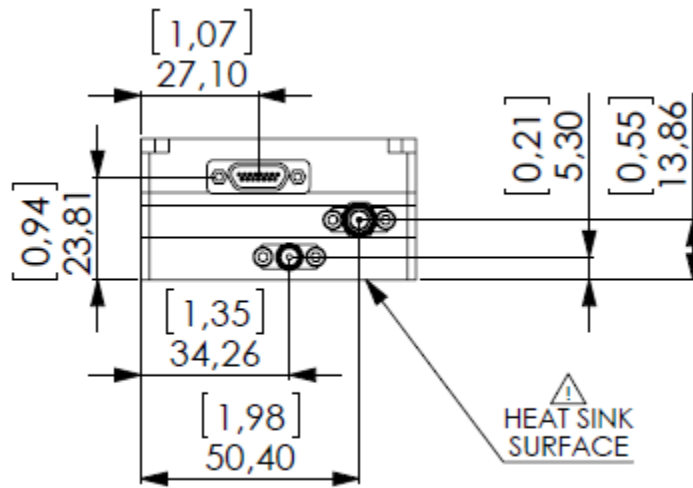
Schoc ½ Sinus X, Y, Z

Acceleration : 70g, Test duration 6ms each axe.

Mechanical Drawing.

A rectangular wedge could be added on the heatsink side to increase the height of 5 mm.





The dimensions in brackets are in inches, the others are in mm.