

μ KaTM Rad Hard Wide Band Transmitter

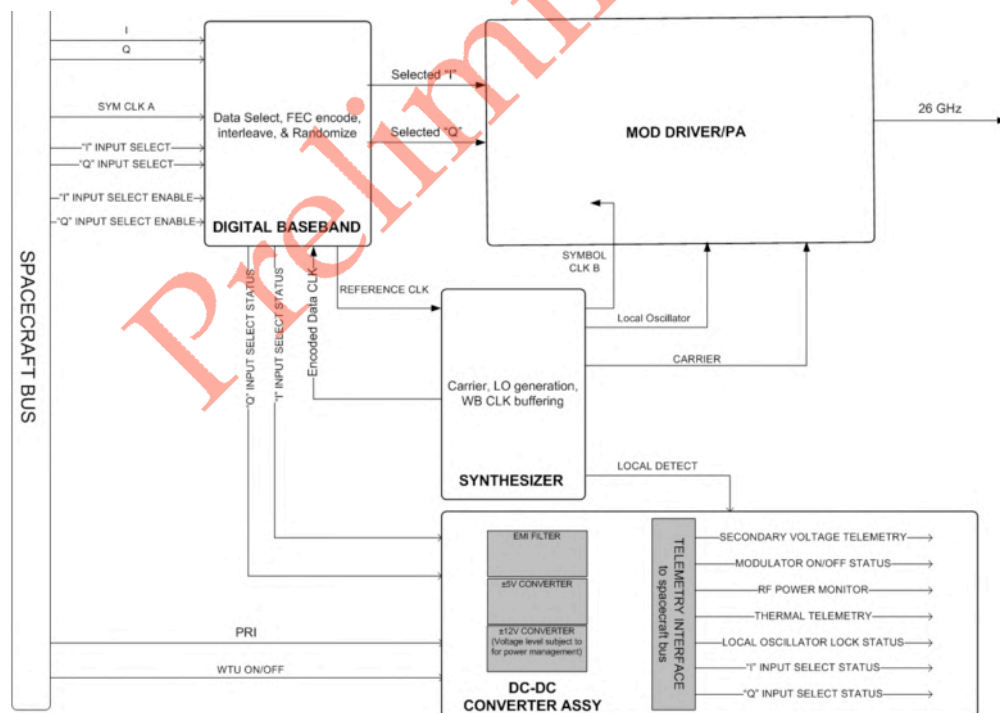
The μ Ka-RHTM Wide Band Transmitter Unit (WTU) is a state-of-the-art, high reliability Ka-band transmitter developed to meet the demanding radiation requirements of long-term space missions and the high data rates for advanced digital modulation schemes. Rates up to 3.2 Gbps, 8-PSK modulation is standard with EDAC and convolutional encoding. Low Density Parity Coding (LDPC) and other modulation methods are also available. The PA operates in Class A mode with less than 0.3 dB of compression for exceptional performance in linear applications. The WTU is compatible with ITU, NTIA, SFCG, and MIL-STD-461 emission and radiation standards. The μ KaTM WTU is compatible with industry standard Class 1 encryption, such as HAIPE. The output interface is a WR-34 waveguide launch.

High Data Rate Transmitter

- Ka-Band
- Rates from 100 kbps to 3.2 Gbps
 - μ Ka-1 rates 100 kbps to 100 Mbps
 - μ Ka-2 rates 100 Mbps to 1 Gbps
 - μ Ka-3 rates 1 Gbps to 2.25 Gbps
 - μ Ka-4 rate 3.2 Gbps
- 8-PSK or QPSK
- Other Modulation types available
- Mates to Industry COMSEC
- TWT-Compatible

Features for Space

- Total Dose and SEE Hardened
- Ruggedized for vibration, shock & thermal
- Temperature: -30 to +80 °C
- MIL-STD-461 Compatible



μ Ka Wide Band Transmitter Block Diagram

Space Micro Inc.

μ KaTM 100



10401 Roselle Street
Suite 400
San Diego, CA 92121

Phone: 858-332-0700
Fax: 858-332-0709

www.spacemicro.com

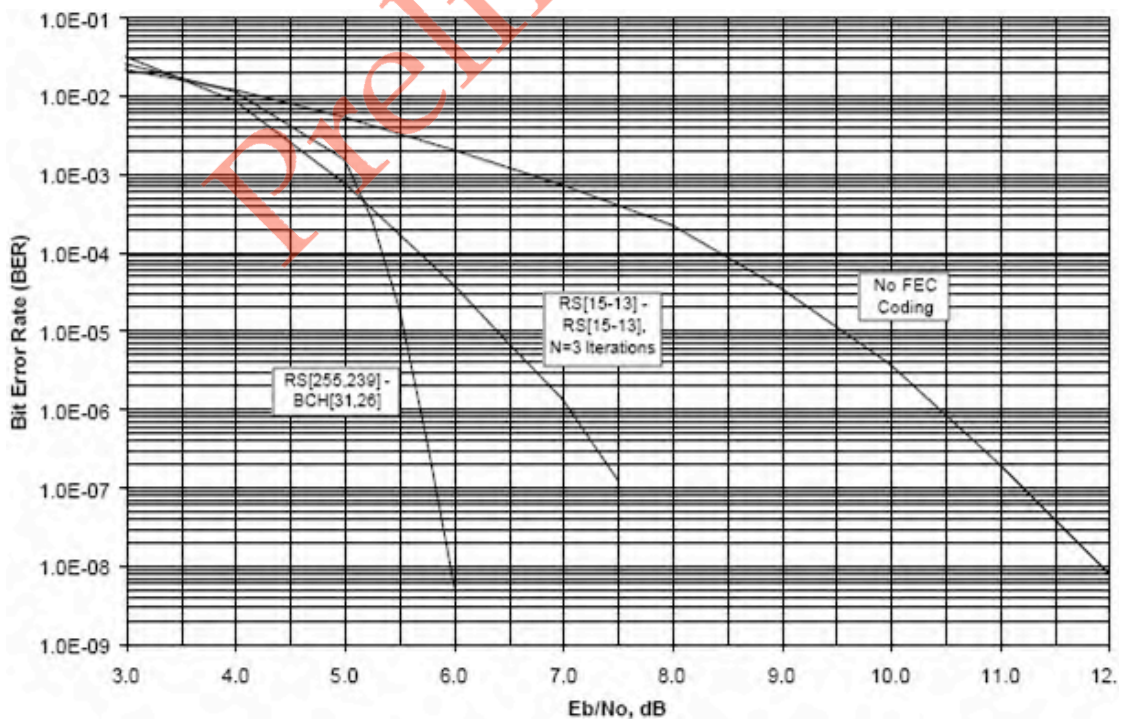
Page 1 of 2

μ KaTM Rad Hard Wide Band Transmitter

High Data Rate Transmitter Details

- Frequency: 20 to 32 GHz
- 8-PSK or QPSK
- Rates up to 3.2 Gbps
- Convolutional Encoding, Standard
 - Reed Solomon & BCH
 - LPDC in development
- Static Phase Imbalance: $< \pm 2^\circ$
- Static Amplitude Imbalance: < 0.5 dB
- Output Power Options:

Power Out	Power Dissipated
3 mW	50 W
100 mW	51 W
2 W	70 W
5 W	80 W
- Frequency Stability
 - Short-term (1 sec) $\leq 10^{-9}$
 - $< \pm 1$ PPM over 8 years
- Carrier Suppression: > 40 dBc
- Mates to Industry COMSEC
- Integrate Phase Noise
 - 3.0° rms 300 Hz to 1.0 GHz
- Radiation Tolerance/Effects
 - Total dose up to 300 krad
 - No SEL or SEFI
- Input Voltage: 22 to 34 VDC
- Power Consumption: 50 W @ Output Power = 3/mW
 - Standby: 5 Watts, Standard
 - Optional lower standby consumption: < 2 Watts
- Operating Temperature
 - -30° to $+80^\circ$ C
- Size: 9.6 x 8.55 x 1.5 inches
- Weight: 5 pounds



Space Micro's FEC CODEC BER Performance



10401 Roselle Street
Suite 400
San Diego, CA 92121

Phone: 858-332-0700
Fax: 858-332-0709
www.spacemicro.com