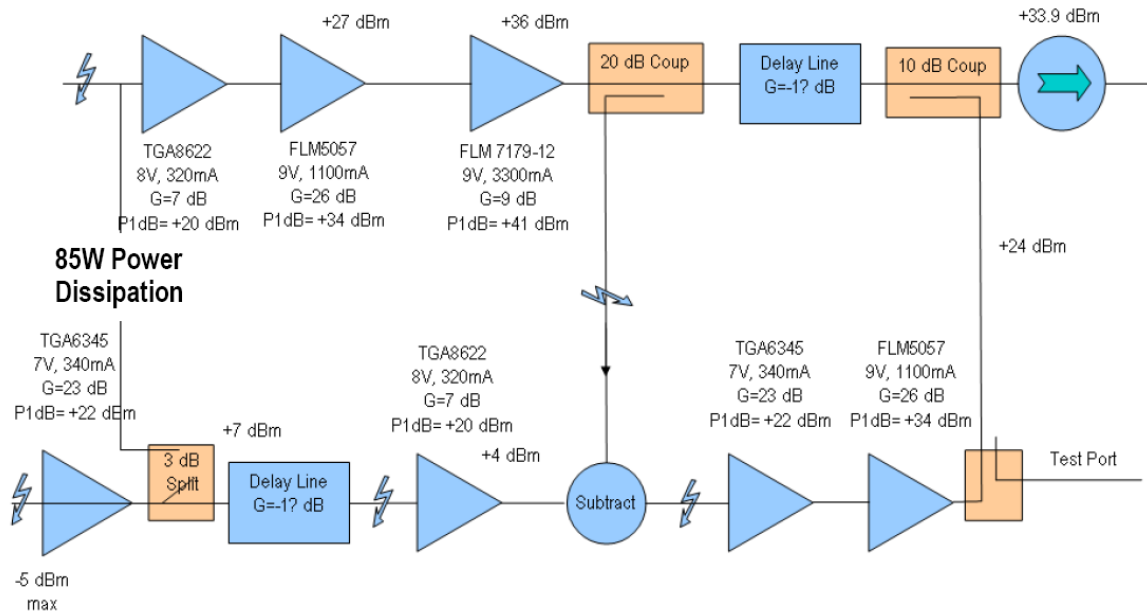
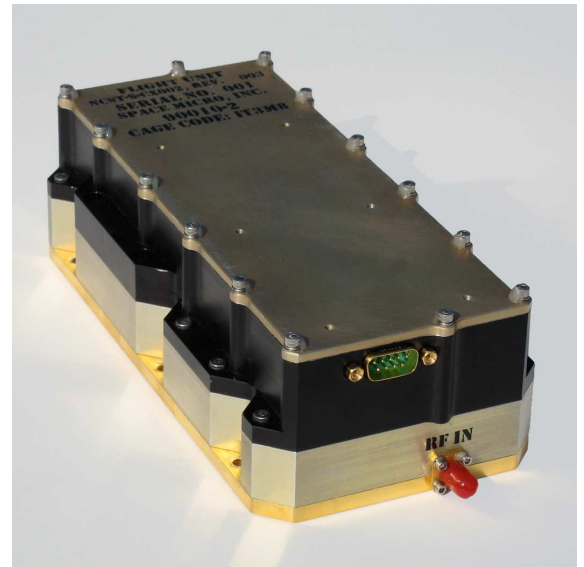


# X-Band Linearized Power Amplifier

The LXBA™ 1000 Linearized X-band power amplifier was built for Tacsat-4 satellite Comm-X Payload. It had been delivered for launch in February, 2009. This instrument amplifies multiple signals at X-Band with a gain of 40 dB and a linear power out of 34 dBm with a PLdBm of 37 dBm.

LXBA™ 1000 features a passive feed-forward design for low noise and linearity. It is radiation hardened to SEE (LET, 40MeV/mg/cm<sup>2</sup> and TID >30krad. Parts selection and shielding can accommodate other orbital needs.



**X-Band Power AMP Block Diagram**

*Space Micro Inc.*

**LXBA™1000**



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# X-Band Linearized Power Amplifier

LXBA™1000 sections are built on a single circuit board for reliability. Signal shielding is accomplished with tooled metal cavities.



Signal Deck

Power Deck

| Parameter                 | Performance   | Description  |
|---------------------------|---|--|
| Bandwidth                 | 7250 – 7750 MHz   |  |
| Noise                     | <10dB   |  |
| Input Power               | -15dBm per channel<br>-12dBm per channel                            | up to 10 channels<br>up to 5 channels  |
| Output Power              | 0.25 W RF per channel<br>0.5 W RF per channel                       | up to 10 Channels @ -15dBm input each<br>up to 5 Channels @ -12dBm input each            |
| Gain                      | >=5W  | Single tone  |
| IP3 (output)              | >=50dBm   |  |
| Multi-Tone IM             | >-30dBc   | for 5 channels @ 0.5W output each  |
| Signal Types              | 5kHz or 25kHz EPSK,<br>16kbps QPSK<br>56kbps Shapped or Offset QPSK | up to 10 of any of these   |
|                           | 3MHz SS<br>5MHz SS  | up to 2, noise like spread spectrum signal<br>up to 2, noise like spread spectrum signal |
| Impedance                 | 50 ohms   | VSWR < 2:1   |
| Output Load Protection    |   | No damage under full reflection, any phase   |
| DC Input Voltage          | < 20mV p-p<br><400mV p-p<br>< 20mV p-p                              | from DC to 100kHz<br>from 100kHz to 400kHz<br>from 400kHz to 10MHz                       |
| Inrush Current            | <4 x Steady State for 1 <sup>st</sup> 5ms                           | Steady State condition reached <100ms  |
| Over Voltage Protection   | +40VDC  | up to 60 minutes   |
| Operating Temp            | -15C to +55C  |  |
| Radiation Tolerance (TID) | >30krad (Si)  | Over 1 year  |
| Size                      | 9" x 3.9" x 2.4"H   |  |
| Weight                    | 4.09 Lbs  |  |



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