

AnaCom's Kromos 2002L Satellite IP Router is a native IP solution for intelligent two-way communication of voice, video, multi-media and data traffic over satellite. The feature rich highly integrated single box solution is ideally suited for bringing IP data, voice and video connectivity to remote locations via satellite.

The 2002L Router can be configured to operate in SCPC or DAMA mode in various network topologies e.g. STAR, MESH or a combination of these. TDM/FDMA DAMA feature allows large number of remotes to operate with a Kromos Hub using minimal bandwidth. The built-in routing allows for easy configuration to connect to WAN, Internet Backbone or Client devices.

Efficient TCP acceleration mitigates poor performance of TCP over satellites and continues to provide robust throughput even when the channel becomes noisy. The Kromos Routers can be managed by a Kromos NMS platform from a centralized location. Alternately, each unit can be accessed locally or remotely via Web or Telnet.

The (optional) Dial-up modem allows PSTN access to the router for out-of-band management. The 2002L IP router also has embedded QoS for prioritization of voice, video and multi-media over data traffic. The Kromos IP router also offers seamless VoIP/PSTN connectivity to remote locations.

## Applications

- ✔ Broadband Connectivity over Large Geographic Area
- ✔ Voice/PSTN Connectivity
- ✔ Cyber Cafes
- ✔ Cellular Backhaul
- ✔ Distance Learning
- ✔ Telemedicine
- ✔ Emergency Response and Business Continuity Networks
- ✔ Remote Sensing and SCADA Networks

## Features

- ✔ Star, Mesh, Point to Point or Mixed Network Topologies
- ✔ Up to 20 Mbps forward channel and up to 5 Mbps return channels
- ✔ Built-in Routing and Webserver
- ✔ IPMax – TCP Acceleration as Standard Feature with Adaptive Window Sizes, Flow Control and Selective Retransmission
- ✔ TDM/FDMA DAMA for Efficient Bandwidth Utilization among a large number of Remotes
- ✔ Automatic Multi-queue QoS for all traffic to ensure prioritization
- ✔ Web and Telnet Based Network Management including M&C for Outdoor Units
- ✔ SNMP Support for Centralized NMS with Kromos NMS or other third party products
- ✔ (Optional) Dial-up Access for Out-of-band Monitoring & Control
- ✔ Complete VoIP Solution with Kromos IPX Switch, PSTN Access
- ✔ Low Latency in DAMA Mode for mission critical applications.



# 2002L Satellite IP Router

## Detailed Specifications

|                            |   |  |
|----------------------------|---|--|
| <b>Key Features</b>        | IPMax – TCP Acceleration, DAMA or SCPC Mode, QoS - Priority for VoIP/Video/Multi-media, Web Server, Built-in Routing,                       |  |
| <b>Network Management</b>  | SNMP, Web, Telnet and Dial-up access via PSTN for out of band Access, M&C Support for Outdoor Equipment (if supported by Outdoor Equipment) |  |
| <b>Interfaces</b>          | Ethernet (RJ-45), RS-232 x 2, RJ-11 (Optional For Dial-up), Keyboard, Monitor, Tx IF – TNC 50 Ohm, Rx IF – Type F 75 Ohm                    |  |
| <b>IF Center Frequency</b> | 950-1700 MHz, Programmable in 2.5 kHz Steps.  | <b>Diff Encoding</b> Selectable: on/off  |
| <b>Output Level Range</b>  | 0 to -25 dBm into 50 ohms (0.5 dB Steps)  | <b>Spectral Inversion</b> Selectable: on/off   |
| <b>Spurious Outputs</b>    | <-40 dBc  | <b>Scrambling</b> Selectable: on/off   |
| <b>Modulation</b>          | QPSK, or none (pure carrier)  | <b>FEC (Viterbi &amp; Reed-Solomon)</b> Selectable: Viterbi R $\frac{1}{2}$ , R $\frac{3}{4}$ , R $\frac{7}{8}$ , Concatenated Reed-Solomon Outer Code (219, 201), (194,178), (126, 112), (204, 188), (219, 200) |
| <b>CW Mode Operation</b>   | 950-1700 MHz, Frequency and Power adjustable in steps of 2.5 kHz and 0.5 dB steps respectively.   | <b>DC Power on Center Conductor</b> 0 to 60v @ 3Amps (resettable fuse). External DC power to connector on faceplate of PCA.  |
| <b>Acquisition Range</b>   | +/-50 kHz with adjustable sweep width   | <b>10 MHz on Center Conductor</b> Selectable on/off (Internal/External)  |
| <b>Data Rate</b>           | Variable rate: 128 kbps to 5 Mbps in 2 kbps steps.  | <b>10 MHz Reference</b> +/- 0.01 ppm,  |

### Eb/No Performance in dB vs BER for Various Coding Rates

|  | BER      | R $\frac{1}{2}$ | R $\frac{3}{4}$ | R $\frac{7}{8}$ |
|--|----------|-----------------|-----------------|-----------------|
| Performance with Viterbi Only                          | 1.00E-09 | 7.8             | 9.4             | 10.3            |
|  | 1.00E-08 | 7.25            | 8.75            | 9.6             |
|  | 1.00E-07 | 6.65            | 8.1             | 9.0             |
| Performance with Viterbi and RS (219,201) Outer Coding | 1.00E-09 | 4.5             | 5.9             | 6.7             |

## Environmental Specifications

|                             |   |
|-----------------------------|---|
| <b>Operating Conditions</b> | 0 to +50 deg. C amb. To 95% humidity non-condensing (typical) |
| <b>Storage Temperature</b>  | -25 to + 85 deg. C. amb                                       |
| <b>Dimensions</b>           | 18.9" x 19" x 3.5"  |
| <b>Power Consumption</b>    | 62W   |
| <b>Shipping Dimensions</b>  | 24" x 23" x 9.5"  |
| <b>Shipping Weight</b>      | 33 Lbs  |



**ANACOM, INC.**

Phone: +1 408-519-2062 FAX: +1 408-519-2063  
<http://www.anacominc.com>