



# Armadillo Advantage™

## Ruggedized Hybrid VSAT For All-Weather Connectivity

The SageNet Armadillo Advantage™ is an integrated hybrid VSAT encased in a durable, weatherproofed housing. It includes three main state-of-the-art components: a SkyEdge® II VSAT, an Inmarsat BGAN™ terminal, and a remotely managed Router. Designed for primary use with SageNet's advanced custom network and standard Spacenet Satellite Services™, this unique Ku-band terminal also features integrated BGAN capabilities. This innovative technology provides seamless switchover from primary VSAT connectivity to alternate and different satellite connectivity. The Armadillo Advantage hybrid approach provides customers in any location and any environment with fast, secure and highly reliable networking.

The Armadillo Advantage VSAT supports a wide range of applications including: SCADA, video surveillance, military applications, and any other use where collection and transmission of critical data at remote outdoor locations is needed.

### Combines Ku-band Affordability with BGAN Availability

The use of both Ku-band satellite as well as Inmarsat BGAN services allows the Armadillo Advantage to achieve unprecedented network availability at the lowest possible cost. The Armadillo Advantage VSAT will automatically switch the service to BGAN service whenever Ku-band satellite service is not available. (For example, when severe weather temporarily disrupts Ku-band transmissions.) Service will automatically switch back to Ku-band as soon as connectivity is resumed. This "failover" capability also greatly reduces on-site field maintenance requirements by providing diagnostics and out-of-band management/re-pointing via its alternate path BGAN Remote Access capability.

### All-weather SCADA, Data, Voice and Video Support

The Armadillo Advantage VSAT incorporates the latest VSAT, BGAN and Router technologies, therefore achieving very high efficiency at the lowest possible cost of ownership. The Armadillo Advantage VSAT, and the services it utilizes, are designed to support a wide range of applications and needs, from low throughput, time-critical SCADA applications to high throughput broadband access - with native support for data, voice and video. Extensive built-in acceleration and QoS tools allow the user to tailor the service to meet their specific needs.



### Benefits

- Ruggedized Outdoor VSAT Hybrid
- High-speed, broadband connectivity
- Fully functional router for LAN management
- Supports data, VoIP and video
- Provides 100% network availability
- Combines Ku-band VSAT (primary) with BGAN VSAT (backup)
- Automatic switchover between WAN connections
- QoS support for performance optimization and minimization of BGAN usage

## Technical Specifications

### Ku-band VSAT:

#### OUTBOUND CARRIER

|                      |   |
|----------------------|---|
| <b>Standard:</b>     | DVB-S2 (ACM)                                      |
| <b>Carrier Rate:</b> | 256kspss to 45mspss (in 1kspss steps)             |
| <b>Modulation:</b>   | QPSK, 8PSK, 16APSK, 32APSK                        |
| <b>FEC:</b>          | 1/4, 1/3, 2/5, 1/2, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 |

#### INBOUND CARRIER

|                      |                                      |
|----------------------|--------------------------------------|
| <b>Standard:</b>     | MF-TDMA DVB-RCS (3 dimensional ACM)  |
| <b>Carrier Rate:</b> | 128kspss to 2.56kspss                |
| <b>Modulation:</b>   | QPSK, 8PSK                           |
| <b>FEC:</b>          | Turbo coding 1/2, 2/3, 3/4, 4/5, 6/7 |

#### DATA RATES

|                  |                               |
|------------------|-------------------------------|
| <b>Receive:</b>  | Up to 7.5mbps TCP, 20mbps UDP |
| <b>Transmit:</b> | Up to 3mbps                   |

#### RFT

|                     |                               |
|---------------------|-------------------------------|
| <b>Antenna:</b>     | External (typical 1.2 meter)  |
| <b>Transmitter:</b> | Linear, typical 2W, 4W or 10W |
| <b>Receiver:</b>    | Standard TVRO                 |

### BGAN Terminal:

#### FREQUENCY BAND

|                  |                       |
|------------------|-----------------------|
| <b>Receive:</b>  | 1525MHz – 1559MHz     |
| <b>Transmit:</b> | 1626.5MHz – 1660.5MHz |

#### RFT

|                 |                                 |
|-----------------|---------------------------------|
| <b>Antenna:</b> | Built-in patch antenna          |
| <b>GPS:</b>     | Integrated GPS receiver antenna |

#### DATA RATES

|                      |                            |
|----------------------|----------------------------|
| <b>Standard IP:</b>  |                            |
| <b>Receive:</b>      | 384kbps                    |
| <b>Transmit:</b>     | 240kbps                    |
| <b>Streaming IP:</b> | Symmetric 32kbps or 64kbps |

### Integrated Unit:

#### IP FEATURES

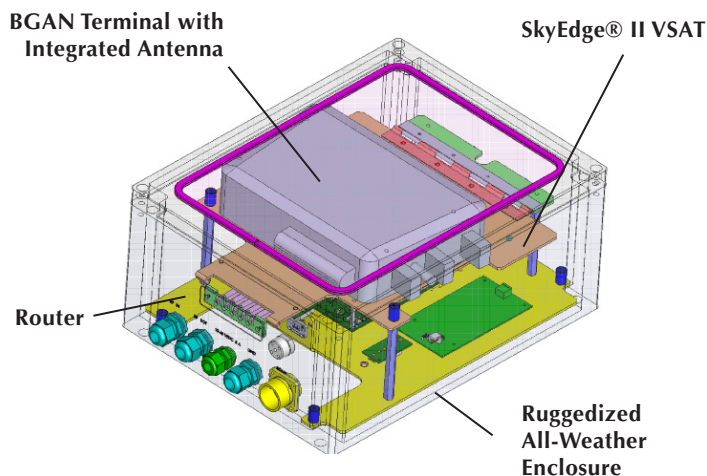
|                           |   |
|---------------------------|---|
| <b>Protocols:</b>         | RIP, IRDP, DHCP, NAT/PAT, IGMP, DDNS, NTP, IPSEC, SIP, SNMP, XOT (Async)                                |
| <b>Acceleration:</b>      | TCP, HTTP, compression  |
| <b>Advanced Features:</b> | IP prioritization, ACL, VLAN, DiffServ, automatic switch-over between primary and backup WAN connection |

#### ENVIRONMENT

|                                |                                       |
|--------------------------------|---------------------------------------|
| <b>Operating Temp.:</b>        | -40 to +60 degrees C                  |
| <b>Humidity:</b>               | Up to 100%                            |
| <b>Internal Temp. Control:</b> | Thermostat controlled internal heater |

#### INPUTS/OUTPUTS

|                           |   |
|---------------------------|---|
| <b>RF:</b>                | Two sealed F connectors, 75Ω, female                  |
| <b>Data:</b>              | Sealed RJ-45 Ethernet and two RS-232 Async            |
| <b>Operating Voltage:</b> | AC, 110V – 240V auto range or 10V to 59V DC           |
| <b>Power Consumption:</b> | Up to 70W (BGAN in transmit mode, Internal heater on) |



### Key Features Include:

- Software embedded within the unit (no external devices needed)
- Unit is remotely managed from service provider's teleport
- IP watchdog
- Can be configured to transport only critical applications when using backup WAN connection
- Suitable for -40 degrees Celsius (-40° F) and up to 60 degrees Celsius (140° F) in direct sunlight (housing design minimizes thermal loading from sun exposure)
- Availability of AC and DC power supplies
- Low power draw to provide low temperature rating (heating = 20 W)
- Internal heating and thermostat unit
- Environmentally sealed IP-66 enclosure and cable entrance
- Lightning protection

### Optional WAN Connection:

- Terrestrial (DSL, Cable, T1, etc.)
- Wireless 3G/4G
- Dial backup (backup WAN connection only)
- Fixed wireless

**To learn more about the SageNet Armadillo Advantage Hybrid VSAT, visit [www.sagenet.com](http://www.sagenet.com) or call 1-866-480-2263.**

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