ARKA

satTRAC®

MODEM / BASEBAND UNIT

High-performance, high-availability Modem / BBU

TT&C, payload, communications, and test

True software modem

Cloud native

FEATURES

CAPABILITIES:

The satTRAC® Modem / Baseband Unit (BBU), developed by AMERGINT Technologies, Inc., an ARKA Group company ("ARKA") is a software-defined, high-performance Modem/BBU that can interface at an RF or IF frequency to support a wide range of satellite TT&C, payload, communications, and test functions.

TRUE SOFTWARE MODEM:

The satTRAC software is the intelligence of the Modem/BBU. The modem and baseband processing algorithms (including modulation / demodulation and Forward Error Correction (FEC)) are implemented entirely in software, making the system a true software modem.

PROVEN COMPATIBILITY AND PERFORMANCE:

With years of operational heritage and demonstrated compatibility in satellite factories and on-orbit, our satTRAC systems provide a low-risk, long-term ground station solution. Programs like GPS, JPSS, GOES-R, JTAGS, AEHF, as well as many classified and SmallSat programs, rely on satTRAC for their most critical links.

BUILT-IN TOOLS:

The Modem / BBU offers a suite of intuitive tools to customize, monitor, troubleshoot, test, and analyze mission-critical data. Tools include AWG noise generation; a spectrum analyzer to assess and measure power levels, purity, frequency offsets, C/N0, distortion, and interference; data viewers to monitor raw command and telemetry data; I/Q sample recording and analysis; I/Q Constellation diagrams to test the quality of a signal; TestExec™ to automate testing, a UI editor to customize the user interface, and inSIGHT™ Analytics to collect, store, and visualize data to provide an in-depth look—real-time and historical—at how your data moves through your system.

THE POWER OF SOFTLINK®:

All ARKA systems are built on SOFTLINK, ARKA's flexible and configurable software-defined architecture. SOFTLINK leverages a vetted library of modular, scalable software applications (Apps) and services to tailor and evolve system capabilities with minimal risk and cost. SOFTLINK's open architecture and open API enable ARKA Apps to be truly "platform agnostic," meaning Apps can run on premise (our hardware or yours), on Virtual Machines (VMs), in containers, or natively in the Cloud.

VIRTUAL AND CLOUD DEPLOYMENTS:

When ARKA Apps / services are deployed in the Cloud, they can be hosted in VMs or orchestrated in containers—interoperating across network boundaries. Multiple instances of these environments can exist simultaneously in various locations to provide resilient, fail-safe solutions. What's more, ARKA Apps are "Cloud agnostic," allowing them to perform seamlessly across Cloud platforms.

BEYOND BEGINS HERE

AT-H9999-CORP-0069 V3

INTUITIVE AND CONFIGURABLE USER INTERFACE

The satTRAC Modem features an **intuitive** and **user-configurable** web-based User Interface (UI). Use the Overview window to **control and status** how data is flowing through the system and **drill down** into detailed parameters. The flow of data is visually represented using component blocks, arrows, and status indicators.
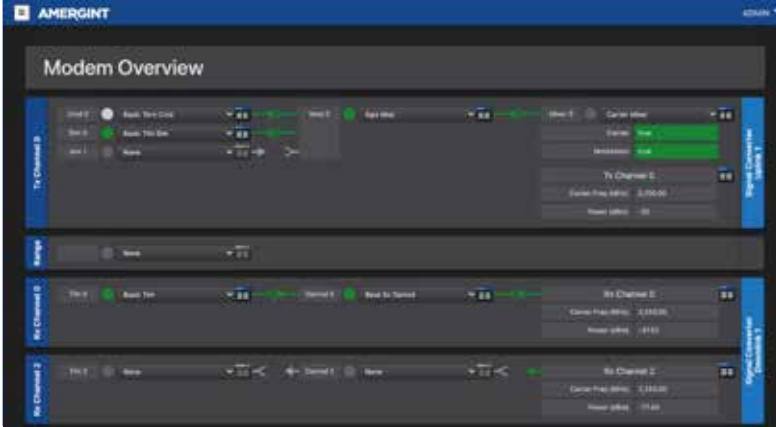
OVERVIEW WINDOW
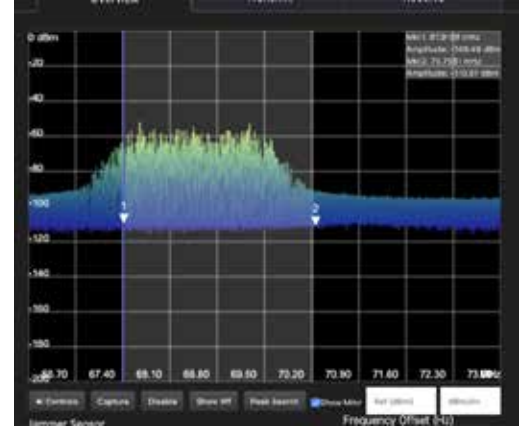
SPECTRUM ANALYZER

SPECIFICATIONS

satTRAC FREQUENCIES

- 70 MHz
- L-Band
- S-Band
- X-Band
- UHF
- Ask about additional bands

RF options may be combined.

BASEBAND PROCESSING

- CCSDS / TDM
- COP-1
- Crypto interfaces
- G3RUH
- HDLC
- SLE
- Randomization / scrambling
- RS-422 / TTL / ECL / LVDS
- FEC (Viterbi, RS, LDPC, Turbo, BCH, CRC)

satTRAC MODEM SOFTWARE

TEST:
- Channel Emulation
- Noise Injection

OPERATIONAL WAVEFORMS:
- BPSK / PM
- BPSK / FM
- BPSK / QPSK
- FSK
- FSK / AM
- GMSK
- UAQPSK
- SQPSK / OQPSK

Compatible with most small satellite radios and vehicles

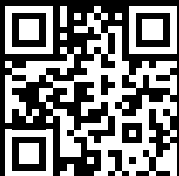**NASA WAVEFORMS:**
- C2V2
- TDRS
- DSSS

RANGING:
- ESA, ESA-like tone ranging
- CCSDS PRN
- SGLS PRN
- TDRS

COMMUNICATION / PAYLOAD WAVEFORMS:
- BPSK / QPSK
- 8PSK
- 16APSK
- 32APSK
- DVB-S2

CUSTOM WAVEFORMS:
- Ask about your waveform

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