



AM/FM V/UHF TRANSCEIVER

The SRT-619/NV is a new-generation, multi-band, multi-role, multi-function 30W AM/100 W FM V/UHF Transceiver using the most advanced digital techniques to provide reliable voice/data LOS and SATCOM radio communications over the 108MHz to 400MHz frequency range for shipboard and ground-based military and military-type applications.

The SRT-619/NV is configured as a single, self-contained unit suitable for tabletop or 19" rack mounting. Keyboard, display and audio connectors are located on the front panel for local operation.

The human inter face is supported by interactive menus which greatly simplify the operating procedures. The equipment allows connection to a single V/UHF antenna or two separate VHF and UHF antennas. Operating over an extended frequency band, the V/UHF Transceiver integrates into a single package capabilities that in conventional systems require the use of two separate Transceivers covering the VHF band and the UHF band respectively.

Up to 3 guard receiving channels are also provided as an option. The SRT-619/NV provides specific applications in the following areas:

- Ground-Air-Ground UHF (225 MHz - 400 MHz) LOS secure voice/data communications between Air Defence Sites and flying aircraft for mission control/monitoring

- Ship-to-ship/ship-to-shore/ship-to-air UHF (225MHz - 400MHz) LOS secure data communications supporting the Command and Control function (LINK-11, LINK-22), in association with external DTS equipment
- UHF SATCOM secure voice/data communication for exchange of tactical/non-tactical information over the related satellite space segments.
- LOS voice communication with military/civil aircraft over the 118 MHz to 156 MHz band for Air Traffic Control (ATC)
- LOS voice communications over the 156MHz to 174MHz Maritime band with merchant ships and Port Authority stations.

MAIN FEATURES

- Digital Signal Processing (DSP) techniques used to implement IF/Audio filtering, modulation/demodulation, AGC functions; programmable to meet specific customer requirements
- Direct Digital Synthesis for channeling with increments of any size and frequency agility in the fast frequency hopping EPM mode
- Embedded PC technology with user-friendly human interface supported by interactive menus
- Capability for optional extension of the upper band limit to 470MHz

SRT-619/NV

- 70MHz inter face for connection to external modems (UHF SATCOM, Spread Spectrum, etc.)
- Compatibility with external NATO voice/data crypto equipment
- Bus architecture to simplify interconnections and to allow addition of new functions with minimum modification
- Compatibility with tunable high selectivity UHF filters for collocated operation and RF Booster Amplifier for increased communication reliability
- Plain/secure voice and data communication (up to 16,000bps) over V/UHF LOS and UHF SATCOM channels
- EPM frequency hopping facilities based on current NATO standards (HAVE QUICK, SATURN) or proprietary fast frequency hopping schemes, either built-in or remoted for security (upon request)
- Remote control of the operating functions over an RS- 422/ RS485/RS-232 inter face or by an optional Ethernet IP interface
- BITE system providing:
 - Indication of type and location of faulty module on the front panel display
 - Continuous, automatic monitoring of Transceiver functions.
 - Interruptive, operator-activated tests
 - Transfer of BITE data for remote diagnostics.

TECHNICAL SPECIFICATIONS

GENERAL CHARACTERISTICS	
Frequency ranges	108MHz to 173.975MHz 225MHz to 399.975MHz
Optional range extension	400MHz to 469.975MHz
Channel spacing	25kHz, 12.5kHz, 8.33kHz (VHF only), 5kHz
Preset channels	Up to 99 for LOS communication Up to 10 uplink/downlink for Satellite Communications
Link types	LOS (Line Of Sight), UHF SATCOM
Operation types	Fixed Frequency simplex/half duplex Frequency Hopping (optional) HAVEQUICK SATURN EASY IIN proprietary EPM mode
Modulation types	AM FM CPFSK (Continuous Phase Frequency Shift Keying) FSK
TYPES OF SERVICE	
Voice	Plain analogue Secure digital (VINSON compatible) by use of external crypto device
Data (external DTS/modem)	LINK-11, LINK-22 (optional), LINK-Y
Duty cycle	Continuous transmission
In/Out RF impedance	50ohm unbalanced
Frequency stability	Long-term (1 yr): Better than 1 part in 10 ⁻⁶ Short-term (20msec) Better than 1 part in 10 ⁻⁸
MTBF	Greater than 5000 hr
MTTR	Less than 30 minutes
Primary power	115/220 VAC ±10% 50/400Hz ±5% 28VDC ±10%
Power consumption	100VA on Rx, 700 VA on Tx (maximum)

TEMPERATURE	
Operating	-20°C to +50°C
Storage	-40°C to +75°C
Relative humidity	Up to 95%
Dimensions	420 x 132 x 544mm (W x H x D)
Weight	27kg maximum

TRANSMITTER CHARACTERISTICS	
RF carrier output power	100W on FM, 30W on AM
Power levels	10dB range in 1dB steps
Harmonic attenuation	Better than 80dBc
Spurious rejection	Better than 80dBc at ±10MHz off tuned freq
Broadband noise	Better than -160dBc/Hz ±10MHz off tuned frequency

MODULATION BANDWIDTH	
Narrowband	300Hz to 3,500Hz
Wideband	20Hz to 10,240Hz (baseband) 300Hz to 21,300Hz (diphase)
Audio inputs	Microphone: 100μV/150ohm Line: 0dBm / 600ohm balanced
VSWR protection	Underrated operation for VSWR up to 2:1 Graceful degradation for VSWR > 2:1

RECEIVER CHARACTERISTICS

SENSITIVITY	
AM narrowband	2.5μV/50ohm for (S=N)/N = 10dB, m = 0.3
FM narrowband	2.5μV/50ohm for (S+N)/N = 16dB, frequency deviation 3kHz

IF SELECTIVITY	
Narrowband	22kHz min at -6dB, 50kHz max at -60dB
Wideband	50 kHz min at -6dB, 100kHz max at -60dB
Spurious rejection	Better than 80dB at 5% off the tuned frequency
Image rejection	Better than 80dB
Signal-to-Noise Squelch threshold	Adjustable in a 6 dB to 15 dB range of the (S+N)/N ratio
Carrier level Squelch threshold	Adjustable in a 5 μV to 50 μV RF input level

AGC RESPONSE	
AM	Audio output variations of +/- 3dB max for RF input variations in the 5μV to 500mV range
FM	Audio output variations of +/- 3dB max for RF input variations in the 5μV to 500mV range

AUDIO DISTORTION	
AM	5% max
FM	5% max
RF input protection	No permanent degradation for RF inputs up to 20V emf from a 50ohm source