SATCOM

TACTICAL MILITARY
SDR RADIO

HF *20W* / **VHF** *20W*

Cheetah 3+ HV

30 MHz to 170 MHz (1.6MHz - 30MHz Capable)

VERSATILE MILITARY COMMUNICATIONS

The **Cheetah 3+ HV** is the ideal tactical radio for special operation forces.

The wideband radio covers 1.6 to 170MHz and has the highest Transmit power at 20W in its class, while weighing only 2.3kg.

It's Li-Ion battery provides 30hrs mission time. The enclosure is milled from T6-Aluminium; surface treated and powder-coated. The design ensures ingress protection up to a depth of 20meters for more than 3 hours.

ECCM – UNCOMPROMISED COMMUNICATION

- Standard integrated features include Data Modem and Satellite Positioning Receiver.
- TRANSEC: Frequency Hopping (FFH) for stealth transmissions while evading frequency jamming.
- COMSEC: Secure Digital Voice (SDV) for highest level of security to counter unwanted decryption.
- ENCRYPTION options such as Advanced Encryption Standard (AES) and One-Time-Pad (OTP) encryption controlled by end user ensures complete and stealth mission security.
- All the advanced features can be engaged simultaneously in end to end secure and reliable communication.

COMBAT NET, TACTICAL CHAT, FILE TRANSFER & BATTLEFIELD AWARENESS

Basic TEXT capabilities are included in all radios as standard. Advanced Tactical Chat, File Transfer, E-Mail with front line Battle Field Awareness capabilities with external Tactical terminal and PC applications are user options. LEGACY RADIO networks can be tied into the Cheetah3 Combat Net with the Sat-Com Tactical Terminal (ST-1 and ST-4) for seamless and secure communications.

MISSION TIME

The advanced power and battery management system incorporated into the radio design ensures a low stand-by power consumption of 300mW, while maximum power consumption at full power is limited to 90W. The Li-Ion battery has a capacity of 13Ah allowing up to 30hrs of mission time depending on features and configurations in use. The Cheetah's internal battery charger will replenish the fitted battery if supplied by a DC 9-35V source. The satellite position data can be displayed in Latitude/Longitude, UTM or MGRS formats. This data can be remotely acquired from a radio in the field or obtained by radio operator initiation.

ANTENNAS

Various wideband or band-specific high gain antennas are available depending on the application and requirements.

HANDSETS AND HEADSETS

The radio interface can accommodate a wide variety of audio devices which includes but is not limited to military-standard handsets, headsets with passive and active Noise Reduction, as well as VOX and Bone Transducer technology for a hands-free operation.

REPEATERS AND RE-BRO

A tactical repeater or re-broadcasting configuration can be created by connecting any two Satcom radios with an AUX cable and minimal menu settings. Purpose made repeater racks include a duplexer, band pass filter, power supply and charger for medium to long term repeater deployments. Repeaters and Re-bro systems utilising a Cheetah and any legacy radio is possible using a cross patch box.

CONFIGURATION SOFTWARE APPLICATION (MISSION PLANNER)

The Configuration Software runs on PC's, Laptops or Field Tablets with Windows, enabling users to configure radios with all network parameters such as Channels, Address Book, Quick Messages, Call Sign, ALE network, and Encryption.

KEY GENERATOR SOFTWARE APPLICATION

The Key-Generator is embedded in the Configuration Software and enables the user to create and manage their own secure AES128, 256 and the OTP encryption keys for COMSEC and TRANSEC modes.

FEATURE SUMMARY (STANDARD)

Combat Net Radio	STANAG 5066 PC Data Application
Frequency Range	1.6-170MHz
Channel	200 Programmable
Frequency Stability	0.5 ppm / 0.05 ppm*
Modes	USB/LSB, AM, CW, FM, FSK, MSK (BPSK, QPSK, PSK, QAM, DSSS)*
Power Source	12 VDC (nom) 10 – 36 VDC (operational)
RF Impedance	50-ohm nominal, unbalanced
Dimensions	125w x 210h x 73d mm (excluding Battery) 125w x 296h x 73d mm (13 Ah Battery)
Weight	2.3 kg (excluding Battery)
Interfaces	Serial RS232, (*USB1.1, *Ethernet 10Base-T)
A/F Power + Distortion	External speaker 8 W in 4 ohm, THD 1% Internal Speaker 1 W in 8 ohm, THD 10%
Battery Capacity	Li-Ion (13.0 Ah) 1.2 kg each (Small Battery Pack)
Typical Mission Time	48 hrs (1:1:30) with 13 Ah Battery in Standby mode. 24 hrs (1:1:30) with 13 Ah Battery in full COMSEC MODE
Power Consumption	340 mA @12 V (Conditional muted
Standard Modem	
Modes	FSK/MSK
Bit Rates	2400 bps / 1200 bps
Audio Scrambling	Fixed tone inversion Hopping tone inversion*

TRANSMITTER

Power Output	Power output 2, 5, 20W 1.6 -170 Mhz User Defined: 1.6 -170 Mhz
Audio Bandwidth	300 to 2550/3000 Hz (Selectable)
Harmonic Suppression	>45 dB (undefined for 1.6-30MHz)
Undesired Side-band Suppression	>45 dB
Spurious Suppression	>45dB (undefined for 1.6-30MHz)

RECEIVER

Sensitivity	12 dB SINAD@-119 dBm (FM) TYP. 10 dB SINAD@-116dBm (AM) TYP. 10 dB SINAD@-122dBm (SSB) TYP.
Image Rejection	>80 dB
IF Rejection	>80 dB
Blocking	>90 dB
Audio Output	Handset: Via 6-way connector Internal Speaker: Selectable on/off External Speaker via 5-way connector
Noise Reduction	DSP Proprietary Compander (2:1)
Squelch Modes	Syllabic Voice Detect RF Signal Level CTCSS

ENVIRONMENTAL

Shock, Vibration & Immersion	MIL-STD-810G
EMI/RFI	MIL-STD-461E
Operating Temperature	-30 to +65˚C
Storage Temperature	-40 to +85˚C

TRANSEC*

FFH (Fast frequency Hopping)

Hop Sequence	OTP (One Time Pad), AES128, User Specific
Hop Rate	1/2/5/10/20/50/100/200/400/600 hops per second
Hop Widths	100khz, 1,2,5,10,20,40Mhz wide / User defined frequency bands*
Hopping Key	8-digit decimal Key on OTP (One-Time-Pad) or AES128 More than 40,000 nets.
Synchronization	SPHS (Satellite-Pulse-Hopping-Synchronization; GPS / GLONASS) OTAHS (Over-The-Air-Hopping-Synchronization) *

COMSEC*

SDV* (Secure Digital Voice)	AES256 Encryption

VOCODER*	DATA RATES (B/S)
MELPe	2400, 1200, (600, 480, 300) *
TWELP	2400, 1200, (600, 480, 300) * (Export Controlled)

DATA CAPABILITIES*

Advanced Modem	HF / VHF
Narrowband Data	Up to 64000 bps in 12kHz
Wideband Data	Up to 128000 bps in 24 kHz
SUPPORTED WAVE FORMS	PSK / MSK / QAM Proprietary
Standards and Compliance	
MIL-STD & STANAG	

OPTIONAL MODEM AS IMPLEMENTED IN CHEETAH 3+*

INTEROPERABILITY

All VHF/UHF Features are inter operable with the Cheetah3 and Leopard1 Radio.

Interoperability with other Military Radios is subject to their implementation of MIL-STD and STANAG protocols.

IMPLEMENTABLE HF FEATURES*

SSB data Up to 9600 bps in 3 kHz
ISB data Up to 19200 bps in 2x3 kHz
Standards and Compliance MIL-STD & STANAG

SUPPORTED WAVE FORMS

MIL-STD-110A	STANAG 4415	STANAG 4481
MIL-STD-110B	STANAG 4285	STANAG 4065
MIL-STD-110C	STANAG 4529	STANAG 4539

SOFTWARE OPTIONS:

Automatic Link Establishment (ALE)*
Radios operates in full COMSEC (SDV) and TRANSEC(FFH) Modes during ALE operations.
Radio can offer either one or both standards of ALE.

3G ALE (ARCS)
STANAG 4538 FLSU xDL

2G ALE
MIL-STD-188-141B / FED-STD 1045 / FED-STD 1049

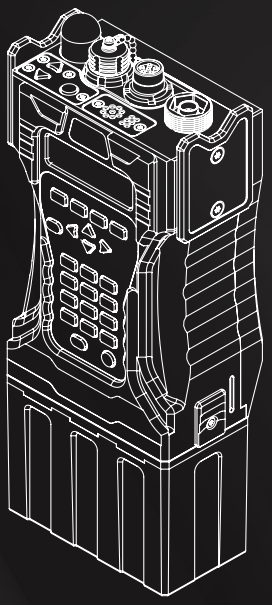
TacTalk
Messaging, Chat, E-mail, File Transfer

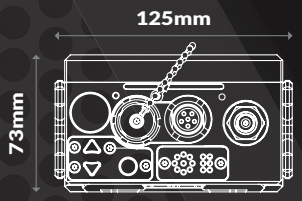
RC50
Messaging, Chat, E-mail, File Transfer

TacTalk-plus
Messaging, Chat, E-mail, File Transfer plus Front line Battlefield Awareness.

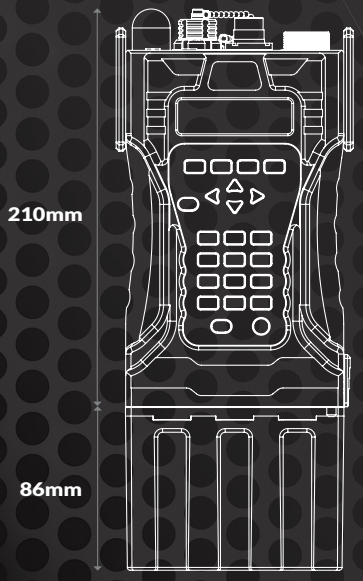
** Optional Choices*

Product specifications are correct at time of print. Please verify specifications with our sales department.

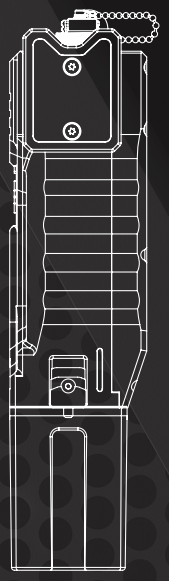




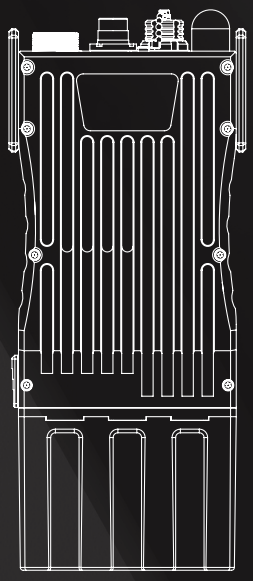
TOP VIEW



FRONT VIEW



SIDE VIEW



REAR VIEW

Management System ISO 9001:2015

TÜVRheinland CERTIFIED

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