

**SATECOM**

**WIDEBAND MILITARY**  
SDR RADIO

**PANEL / 19" RADIO**



**Badger**  
LAND

**Shark**  
SEA

**Hawk**  
AIR

H - 1.6 MHz to 30 MHz / HV - 1.6MHz to 170 MHz / VU - 30MHz to 512 MHz

HU - 1.6 MHz to 512 MHz / GTAV - 112MHz to 160MHz / GTAU - 225MHz to 400MHz

VERSATILE MILITARY COMMUNICATIONS



This range of radios are designed for panel and rack mount applications with standard low power capabilities.

The performance, features and capabilities are exactly the same as the Leopard1 SDR. The only difference is the larger control head, display and keypad for convenient operations in base stations and mobile applications.

## ERGONOMICS

The considerably large display and keypad offer ease of operation for mobile and naval applications. Front peripheral connectivity has been duplicated at the rear of the Badger to allow connection of accessories from either side. This feature permits a clean installation with minimal to no cables protruding from the instrument panel. Additionally, the Badger boasts a built-in three-way antenna switch, capable of automatically selecting the appropriate RF-output for either the HF, VHF or UHF band antennas.

## RACK CONFIGURATIONS

The Badger has been specifically designed to be rack or panel mounted, an extension kit facilitates standard 19" rack installation. Various rack configurations for tactical or 19" mountable racks are available with or without additional power amplifier for mobile, base station and cross-band repeater applications. Tactical Racks feature a rapid release (Jerk-And-Run) capability for radios and the Power Amplifiers.

## INTEGRATED SATELLITE POSITION RECEIVER

Various satellite positioning systems can be implemented. (GPS, GLONASS\*, GPS & GLONASS\*, BDS\*) The satellite position receiver is integrated and provides timing, position and heading information which can be viewed in the field. The front mounted GPS antenna is highly sensitive, but can be remotely mounted for reception when the Badger is installed in armored vehicles or bunkers. 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 is possible by connecting any two Satcom radios with the AUX cable, and requiring minimal menu set-up. 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 this radio and any other legacy radio is possible using a cross patch box.



**Badger**



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**Hawk**



**Shark**

## CONFIGURATION SOFTWARE APPLICATION

The Configuration Software runs on Ruggedised 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 and ALE network.

## 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.



### BATTLESHIP GREY

AMS STD 595A  
#36076



### SKY GREY

FED STD 595C  
#36473



### DESERT TAN

FED STD 595C  
#33446



### OLIVE DRAB

FED STD 595C  
#34088

MODEL	H	HV	HU	VU	GTAV	GTAU
1.6 - 30MHz (30W)	●	●	●			
30 - 88MHz (18W)		●	●	●		
88 - 170MHz (10W)		●	●	●		
170 - 512MHz (5W)			●	●		
112 - 160MHz (15W AM)					●	
225 - 400MHz (15W AM)						●

## FEATURE SUMMARY

Combat Net Radio Channel	STANAG 5066 PC Data Application 200 Programmable
Link Establishment	3G ALE 1 channel every 1.35 sec. 2G ALE 2 / 5 CH per second. SELCALL EIA (EEA, CCIR, ZVEI1, ZVEI2) *
Frequency Stability Modes	0.5 ppm / 0.05 ppm* USB/LSB, AM, FM, FSK, MSK (BPSK, QPSK, PSK, QAM, DSSS)*
Power Source	12 VDC (nom) 10 – 36 VDC (operational)
RF Impedance	50-ohm nominal, unbalanced
Dimensions	367W x 85H x 243D mm (excluding Battery) 367W x 85H x 334D mm (13 Ah Battery)
Weight	4.2 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) Li-Ion (26.0 Ah) 2.2 kg each (Large Battery Pack)
Expected Mission Time	72 hrs (1:1:30) with 26 Ah Battery in Standby mode. 20 hrs (1:1:30) with 26 Ah Battery in full COMSEC MODE
Standard Modem included	
Modes	FSK/MSK
Bit Rates	2400 bps / 1200 bps
Audio Scrambling	Fixed tone inversion Hopping tone inversion*
Power Consumption	340 mA @12 V (Conditional muted)

## TRANSMITTER

Audio Bandwidth	300 to 2550/3000 Hz (Selectable)
Harmonic Suppression	>50 dB
Undesired Side-band Suppression	>60 dB
Spurious Suppression	>60 dB
Antenna Tuning Capability	3 m Whip (3 to 30 Mhz) Profiled Tune Automatic Antenna Tune
	1.6 to 60 Mhz Tuner bypass selectable

## RECEIVER

Sensitivity	-125 dBm (SSB) 10 dB SINAD TYP. -116 dBm (AM) 10 dB SINAD TYP. -118 dBm (FM) 12 dB SINAD 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

## STANDARDS

Environmental	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

## INTEROPERABILITY

All VHF/UHF Features are inter operable with the Cheetah3, Cheetah 3+ and Leopard1 Radios.

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.

<b>3G ALE (ARCS)</b> STANAG 4538 FLSU xDL	<b>2G ALE</b> MIL-STD-188-141B / FED-STD 1045 / FED-STD 1049
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## TacTalk

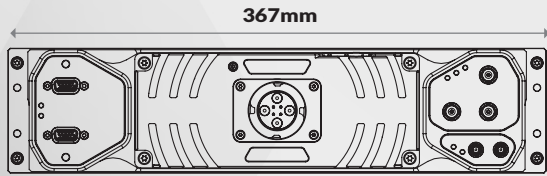
Messaging, Chat, E-mail,  
File Transfer

## TacTalk-plus

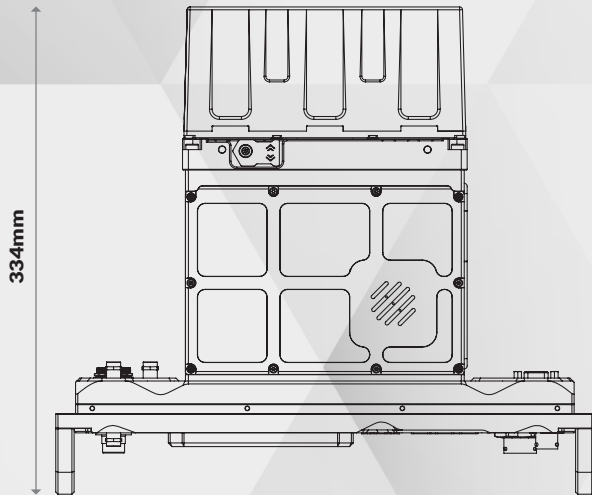
Messaging, Chat, E-mail, File Transfer plus Front line Battlefield Awareness.

### \* Optional Choices

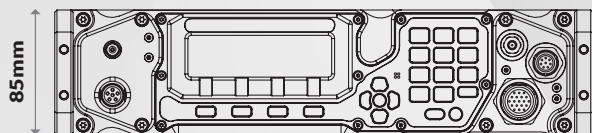
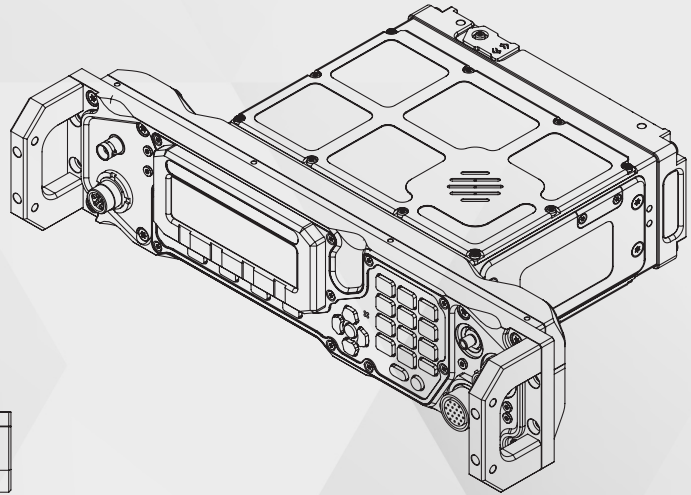
Please verify specifications with our sales department.



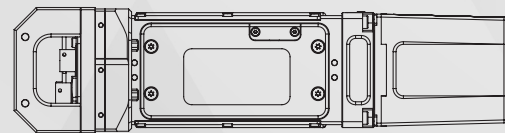
REAR VIEW



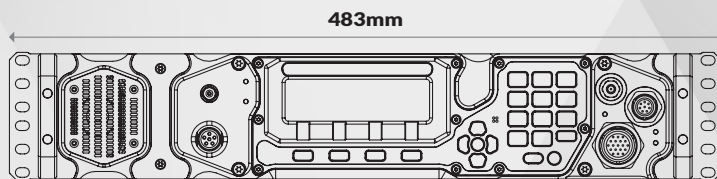
TOP VIEW



FRONT VIEW



SIDE VIEW



19" Extension Kit



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