



VERSATILE MILITARY COMMUNICATIONS

MANIS

R. Contraction of the second s

F

GROUND-TO-AIR SOFTWARE DEFINED RADIO

H - 1.6MHz to 30MHz HV - 1.6MHz to 170MHz VU - 30MHz to 512MHz HU - 1.6MHz to 512 MHz GTAV - 112MHz to 160MHz GTAU - 225MHz to 400MHz

> 11 1)

6



าต

Tel: +421 32 64 00 693 Mobile: +421 911 090 060 E-Mail: ba@becker-tech.eu Web: www.becker-tech.eu

RX1 🗐

1_2 ASC 3 D

7 mm 8 mm 9 mm 2

5 - 6 -

INTERFACE



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 Alces1 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 Manis 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 Manis 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 Manis 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 Pangolin 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 Becker Technologies 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.

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.







R

4

COMBAT NET RADIO STANAG 5066 PC Data Application **CHANNEL** 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 0.5 ppm / 0.05 ppm* MODES USB/LSB, AM, FM, FSK, MSK (BPSK, QPSK, PSK, QAM, DSSS)* POWER SOURCE 12 VDC (nom) 10 – 36 VDC (operational) **RF MPEDANCE** 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 **POWER CONSUMPTION** Hopping tone inversion* 340 mA @12 V (Conditional muted) STANDARD MODEM INCLUDED **MODES** FSK/MSK BIT RATES 2400 bps / 1200 bps AUDIO SCRAMBLING Fixed tone inversion Hopping tone inversion*

AUDIO BANDWIDTH 300 to 2550/3000 Hz (selectable) HARMONIC SUPPRESSION > 50 dB UNDESIRED SIDE-BAND SUPPRESSION >60 dB SPURIOUS SUPRESSION >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

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

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

STANAG 4065 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.

C SENSITIVITY

Ш 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 C IF REJECTION > 80 dB ш BLOCKING > 90 dB 1 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, CTCSS, **RF Signal Level**

STANDARDS

ENVIRONMENTAL MIL-STD-810G EMI / RFI MIL-STD-461 E **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 definedfrequency bands* SYNCHRONIZATION SPHS (Satellite-Pulse-Hopping-Syn- chronization; GPS / GLONASS), OTAHS (Over-The-Air-Hopping-Syn- chronization) *

COMSEC*

SDV* (SECURE DIGITAL VOICE) AES264 Encryption

VOCODER* 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

OPTIONAL MODEM

INTEROPERABILITY All VHF/UHF Features are inter operable with the Feles 3, Feles 3+ and Alces 1 Radios. Interoperability with other Military Radios is subject to their implementation of MIL-STD and STANAG protocols.

3G ALE (ARCS)

STANAG 4538 FLSU x DL MIL-STD-188-141B

TACTALK Messaging, Chat, E-mail, File Transfer

TACTALK-PLUS

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

2G ALE

FED-STD 1045 **FED-STD 1049**

RC50

Messaging, Chat, E-mail, File Transfer

