

PANTHER EDR

PANTHER P (BCC 69) VHF FREQUENCY HOPPING SECURE EPM TRANSCEIVER

KEY FEATURES

- Frequency range 30 to 87.975MHz
- Dual role: integrated transceiver
 - Handheld
 - Manpack
- Dedicated GPS interface
- LCD graphical display
- Smallest and lightest 5 Watt EPM manpack available
- Technology: >95% SMD



Communications

- Fully automatic synchronisation
- Combat proven optimised frequency hopping algorithms
- Free channel search with frequency hopping interoperation
- Integral high level 16kbps digital encryption
- Custom crypto solutions
- Interoperable with fixed frequency transceivers (STANAG 4204)
- Interoperable in all Jaguar V EPM modes
- Hailing facility (STANAG 4292)
- Two frequency simplex operation
- Channel scanning capability

Advanced Data Services

- Tactical Internet data service support
- Dual 115kbps RS232 interface
- 9.6kbps data throughput with comprehensive FEC
- Integral CSMA for Packet data applications
- Multiple simultaneous data calls (MSA)
- TDMA support for weapon / sensor systems (option)
- Automatic voice/data recognition

Application Support

- Windows™ based Messaging / Email / file transfer application
- Packet data overlay support
- Situation awareness (GPS)
- Command Information Systems support
- Slow scan video transmission

Management Systems

- Windows™ based radio programmer software (option)
- Windows™ based extended control software development tool kit (option)
- Comprehensive Over The Air Re-programming with secure / hopping protection (OTAR)
- Key generation software (option)
- Comprehensive multi-level BIT
- Integral Electronic Log Record (ELR)
- Software upgrade package (option)

Advanced User Services

- Simultaneous multiple selective voice calls (MSA)
- Programmable net names
- Operator authentication and identification
- Alarm and alert functions (option)
- Commander break-in facility (option)
- Software radio architecture upgradeable for customer specific functionality
- Situation awareness (external)
- Panther Short Message Service





INTEGRATED COMMUNICATIONS SYSTEMS

The Panther P is a 5 watt radio providing full over the air compatibility with the frequency hopping and encryption modes of Panther V in the 30 to 88MHz frequency band. Panther P is the first compact and lightweight 5 watt frequency hopping encrypted mini-manpack radio available in the world. Add to this the unparalleled voice, data, and user services of the new Panther EDR family, Panther P has truly become the man portable radio for the future fighting soldier.



THE HANDHELD SOLUTION

Panther P can be used as a handheld EPM radio and, with 5 watts of RF power available, will provide far superior communication ranges than lower powered handheld EPM transceivers.

The Panther P radio has a built in speaker and microphone for use in the handheld role. Alternatively, if a handset or headset is used, the speaker and microphone are disabled. The two radio connectors provide interfaces to audio, data, video and GPS ancillaries.



THE MINI-MANPACK SOLUTION

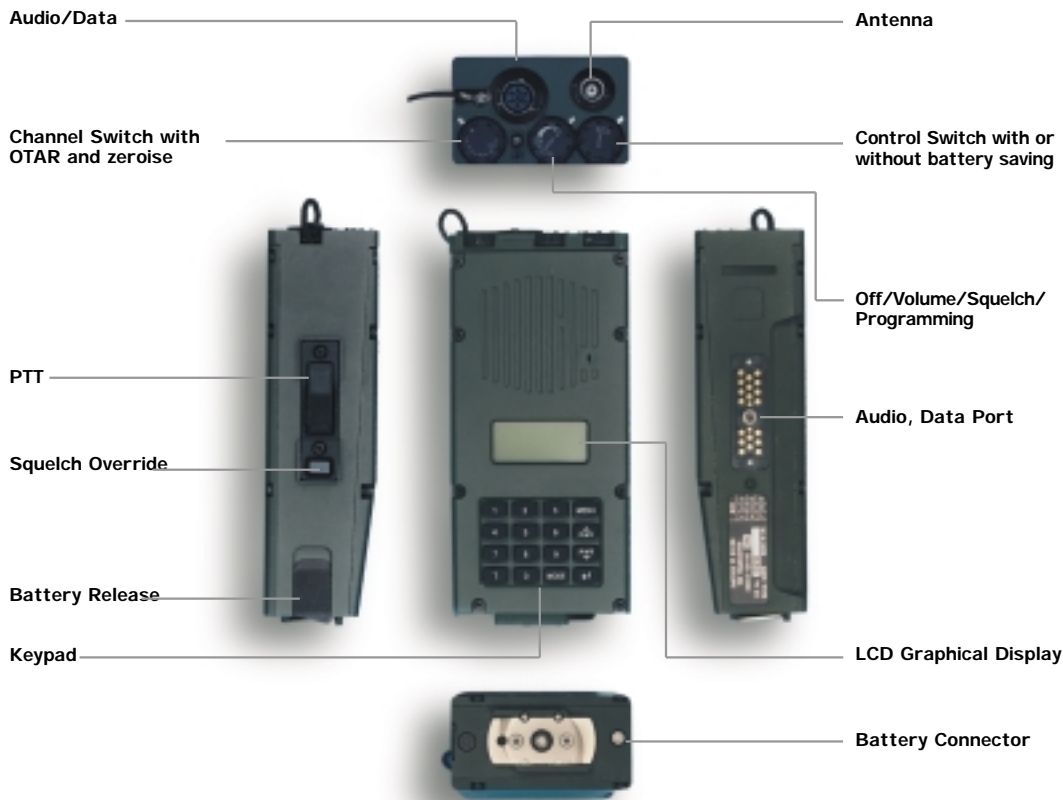
Panther P provides all the facilities of a latest generation manpack radio at a fraction of the size and weight.

The radio can be fitted into a compact manpack frame to provide the traditional 5 watts of RF power into a 2.4 metre whip antenna.

Panther P mini-manpack technology is now being tailored by Thales for both the United Kingdom Bowman programme, and the United States Force XXI programme. The world's forward thinking Armed Forces have now accepted the Panther P type of radio as their standard Infantry manpacks.



Panther EDR



“Panther P is easy to use”

The Panther P, as well as being the most capable radio of its type available, has been designed to be extremely easy to use by integrating the Panther V's simplicity of operation. Fully automatic initial and late entry synchronisation in all EPM modes, coupled with the user friendly controls, ensures that communicating is easy and reliable even for inexperienced operators.

The advanced capabilities provided with the Panther P are designed to ease operation in the field. They include a full dot matrix graphical display for mode indication / radio channel names/status information and a bayonet style battery that can be changed in a matter of seconds.

Technology

The Panther P incorporates the very latest in Digital Signal Processing technology providing a truly software configurable digital architecture radio design. To a customer this means that the flexible design and processing power available will ensure that future upgrades, to meet specific operational requirements, can be achieved throughout the in service life of the radio.

Software upgrades are achieved without the need to open the radio, thus ensuring that future requirements can be met in the field.

To achieve the compact design and high reliability of the radio, comprehensive use of surface mount technology has been made with over 95% of the components being SMDs.

For maximum operational performance Panther P uses the very latest Lithium Ion rechargeable battery technology providing the same in-field operation in a package close to half the weight and volume of traditional Nickel Cadmium batteries.

Tailored Customer Options

- Thales provides tailored language options for the Panther P display, keypad and switches
- Thales provides tailored encryption solutions to meet national security requirements
- Thales provides tailored functionality to meet both current and future needs
- Thales provides tailored Integrated Logistic Support solutions
- Thales provides transfer of technology, in partnership with industry, to manufacture the complete Panther P in a customer's country





TECHNICAL SPECIFICATION

Frequency range:

30 to 87.975MHz fixed frequency and frequency hopping 2320 frequencies at 25kHz spacing

Preset channels:

8 programmable nets storing all operational information and synchronisation status

On air communications modes

Fixed clear (FC) & fixed secure (FS) multimedia (voice, data, video, messaging, situation awareness)
 Frequency hopping secure (FHS) multimedia - optimised at 100hps
 Mixed Free Channel Search (FCS), frequency hopping automatic net operation

On air interoperability:

Fixed clear voice (STANAG 4204 interoperable - F3E Simplex)
 Frequency hopping hailing (STANAG 4292)
 Jaguar V EPM modes
 Channel Scanning Mode (8 channels - FC)
 Two Frequency Simplex (FS)

Frequency hopping:

All frequency hopping
 4/16/256 user specified frequencies
 256 channels orthogonal hopping (8 guaranteed orthogonal sets)
 256 channels narrow band hopping (in 9 bands)
 32 barred bands per programmed channel

Synchronisation:

Fully automatic for both initial set up and late entry procedures
 Passive and active late entry
 Independent of external time of day information
 All synchronisation takes place using the chosen frequency hop set at the full hop rate
 Synchronisation can be achieved without a Master Station in the radio net
 Radio silence - indefinite

Encryption:

High level digital stream cypher encryption covering all media transmissions
 Number of keys greater than 10²²

Baseband interfaces:

Dual audio input
 Dual RS232 data ports with flow control
 Connection to Combat Net Radio Interface / Radio Access Point (option)
 Gateway capability to Allied Forces EPM CNR (option)

Data:

Baseband data connections up to 115kbps
 Asynchronous / synchronous data throughput up to 16kbps
 Asynchronous / synchronous data throughput up to 9.6kbps with FEC
 Reed Solomon Forward Error Correction (FEC), binary block coding and interleaving
 Multiple Simultaneous Access (MSA) - up to 100 selective FHS data calls per net
 Carrier Sense Multiple Access (CSMA) with dynamic net management
 Automatic voice / data recognition

User services:

Selective call and radio banning
 Multiple Simultaneous Access (MSA) - up to 100 selective FHS voice calls per net
 Integral Over the Air Re-keying (Frequency, key, and net information)
 Authentication with operator and transceiver identification
 Panther Short Message Service

Integrated logistic support:

Comprehensive multi-level Built In Test (BIT)
 Integral Electronic Log Record, includes: serial number, user defined record, automatic fault log, radio duty cycle
 In field software upgrade capability

Remote control:

Extended control and programming from a PC based Windows application

Transmit:

RF Output Power:	100mW, 500mW, 2W, 5W at 11V DC
Harmonic Suppression:	Better than 50dB below carrier
Spurious Emissions:	Better than 60dB below carrier for greater than 100kHz offset
AF Response:	Voice 300Hz to 3.0kHz

Receive:

Sensitivity:	Better than -115dBm at 10dB SINAD
Spurious Response:	Image and IF rejection better than 80db
AF Response:	Voice 300Hz to 3.0kHz
AF Output Power:	10mW max in to 300 ohms
Squelch:	Carrier, 150Hz tone and 16kb/s

Power supplies:

Batteries:	11V DC nominal Primary or rechargeable batteries
Protection Against:	Supply polarity reversal Open/Short circuit RF connection RF input +37dBm

Environmental:

Temperature range:	-30°C to +70°C Full Specification -40°C to +70°C Operational
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Environmental Specification:

Nuclear Hardened:	MIL STD 810E
EMI/EMC:	EMP protected MIL STD 461D

Physical characteristics (nominal):

Transceiver:	
Height	170mm
Width	76.3mm
Depth	47mm
Weight	0.9kg
Volume	0.57 litres



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