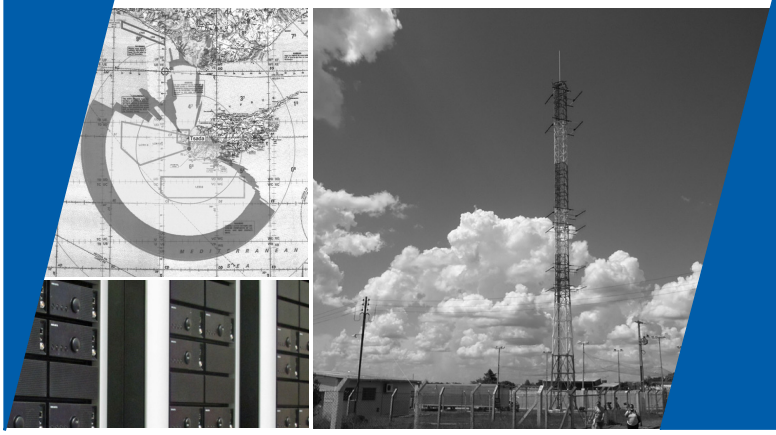
THE VALUE OF PERFORMANCE

NORTHROP GRUMMAN



Park Air T6

VHF Software Defined Radios

Introduction

The latest evolution in the T6 range of professional ATC ground-to-air radios sets new standards for bringing high levels of safety, efficiency and performance into a compact unit.

A full range of VHF transmitters, receivers and transceivers are available for both civil and military settings.

Each model has all of the features expected from a professional ATC voice and data radio, with the flexibility for any ATC scenario including regional and international airports, and country-wide networks.

All this is integrated into the smallest, lightest package Park Air has ever produced.

Summary of Benefits

Efficiency

Low whole life costs	High efficiency and low power consumption combine to reduce the initial and ongoing costs of power and air conditioning. The combination of up to a ten-year service interval and fifteen-year service lifetime also lowers the cost of ownership.
Strong environmental performance	The low power consumption is a result of ongoing work to improve environmental standards. Another outcome of this work is the use of no materials specified in the Restriction of Hazardous Substances (RoHS 2) directive in the T6 radio.

Quality of communications

Class leading RF performance	The radio RF design allows excellent interference and co-site performance in the increasingly crowded ATM spectrum, reducing the need for external filtering.

Connectivity and expansion

Designed for future networks and systems	The T6 radio has been developed with the future in mind. The crucial parameters of network connectivity, environmental sustainability and long service life have all been central to design and specification decisions. Three independently addressable IP ports are available: two on the rear for autonomous network connectivity and one on the front for easy access to the built-in maintenance web-server.
Software defined waveforms	As well as traditional AM-Voice, a number of data waveform options are also available, anticipating the continued growth of data-link services. These include ACARS, VDL-M2 and Wideband AM Data.
Remote firmware upgrade	The ability to update radio firmware from a remote location reduces the need for radio site visits. Connection to an IP network is all that is required.
IPv6 core capability	IP connectivity, both for VoIP audio and 'monitor and control' data is based on IPv6 as well as IPv4, ensuring compatibility with latest-generation networks and systems.

Security

The most secure Park Air radio ever	In addition to front panel screen and interface port locks, there is also support for the latest secure web protocols. These include SNMPv3 with enhanced encryption and authentication, and a secure web server interface with HTTPS and IPv6/IPv4 compliance.

Safety

Flexible main/standby features	These include integral RF/line changeover for low cost solutions and external changeover units for high availability applications.
Advanced temperature control	Digital power management and computer controlled airflow ensure that the radios run cool. This extends component life and reduces the risk of failures.
Intelligent built-in-test	The T6 radio continually monitors its own environment and performance. If any issues are detected, the radio enters a 'reduced service' state, decreasing the power output and alerting the operator with diagnostic information before failure occurs.
Simultaneous call transmission (SCT) detection	The Park Air SCT technology option alerts the operator to the possibility of call blocking and the loss of vital communications between pilot and the ground.

Simple installation, set-up and usability

The T6 radio is half the size and weight of previous models	This means that more channels can be housed in the available cabinet space. An innovative mounting system means that no tools are required for cabinet installation.
Intuitive user interface	A high resolution OLED graphical display is supplemented by a main rotary input control, context-specific soft buttons and indicator icons. There are visual indications of radio activity to accompany the audio.
Loudspeaker to monitor voice transmissions	As an aid to maintenance staff, all T6 radio models (transmitter, receiver and transceiver) provide a loudspeaker so that voice transmissions can be monitored locally when necessary.

Key Specifications

General characteristics	
Operating frequencies	118 MHz to 137 MHz 112 MHz to 137 MHz 118 MHz to 156 MHz 112 MHz to 156 MHz
Waveforms	AM-Voice (25 kHz/8.33 kHz channel spacing) AM Wideband ACARS VDL-M2
Interfaces	Self-locking Lemo for microphone/headset 4-Wire E&M for voice and data Three individually addressable Ethernet ports for VoIP and RCMS E1 for voice and RCMS Two N-type coaxial antenna connectors
Radio pair operation	Autonomous selection of main/standby or transmit/receive radio with internally controlled audio and RF switching
Power supply	99-264 Vac, 21-32 Vdc
Standards	ICAO Annex 10 EN 300 676; EN 301 489 ED-137
Transmitter characteristics	
Output power	50 W (maximum depending on waveform and options)
Duty cycle	100%
Mod depth	5% to 95%
Broadband noise	<-160 dBc/Hz at 1% f_0 offset
Adjacent channel power	<-110 dBc/Hz (for 8.33 kHz channels)
Receiver characteristics	
Sensitivity	<-107 dBm (for 10 dB SINAD with ITU-T weighting)
Blocking rejection	>105 dB (at 200 kHz from reference frequency)
Cross modulation rejection	>115 dB (at 200 kHz from reference frequency)
Physical and environmental	
Dimensions	210 mm wide (half rack), 420 mm deep, 79 mm high (2U)
Weight	
Transmitter	<5.5 kg
Transceiver	<6.0 kg
Receiver	<3.5 kg
Temperature range	
Operating	-20 to +55°C

Part numbers	
VHF Transmitter	T6-TV
VHF Receiver	T6-RV
VHF Transceiver	T6-TRV
Options	
T6-O-112-137	112 MHz - 137 MHz Frequency Range for T6 Radios
T6-O-112-156	112 MHz - 156 MHz Frequency Range for T6 Radios
T6-O-118-137	118 MHz - 137 MHz Frequency Range for T6 Radios
T6-O-118-156	118 MHz - 156 MHz Frequency Range for T6 Radios
T6-O-10W	10 W Maximum Power Output for T6 Radios*
T6-O-25W	25 W Maximum Power Output for T6 Radios*
T6-O-30W	30 W Maximum Power Output for T6 Radios*
T6-O-50W	50 W Maximum Power Output for T6 Radios*
T6-O-AMV	AM-Voice Waveform for T6 Radios
T6-O-VDLM2	VDL-Mode 2 Waveform for T6 Radios
T6-O-AMA	ACARS Waveform for T6 Radios
T6-O-AMW	AM-Wideband Waveform for T6 Radios
T6-O-SCT	Simultaneous Call Transmission Detection Algorithm for T6 Radios†
Accessories	
T6-A-CK	Connector Kit for T6 Radios
T6-A-CMA1	Cooper B-Line Cabinet Mounting Adaptor for 1 or 2 T6 Radios
T6-A-CMA2	19" Cabinet Mounting Adaptor for 1 or 2 T6 Radios

* T6-TV and T6-TRV only
† T6-RV and T6-TRV only

Note:

The information and specifications provided in this document represent the minimum performance of Park Air Systems' equipment. Park Air Systems reserves the right to change the specifications of its equipment from time to time in its discretion without any notice. It is the customer's responsibility to request and obtain the latest applicable specifications from Park Air before placing orders for Park Air Systems' equipment. Neither this document, nor any of the information presented in it, should be regarded as an offer or commitment or a representation on the part of Park Air Systems (or any other person) to enter into a contractual arrangement. For further details please see the Northrop Grumman website.

For more information, please contact:

Northrop Grumman, Park Air Systems Ltd., Northfields, Market Deeping, Peterborough, PE6 8UE, United Kingdom

44 (0) 17 78 34 54 34 sales@parkairsystems.com www.northropgrummaninternational.com

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