ELECTRONICS DIVISION

RT-700/A

DUAL-USE AIRBORNE V7UHF TRANSCEIVER WITH ETSOA

The RT-700 Airborne V/UHF Radio Systems Family consists of a range of advanced multi-band, multi-mode transceivers. Designed to cover the V/UHF 30-512MHz frequency band for fi xed-wing, UAV and rotary-wing avionic platforms, they are dedicated to military and dual-use applications.
The RT-700 provides aircraft with plain and secure voice and data communications over an extended frequency range through an external encryption unit.
Within the RT-700 family of V/UHF transceivers, the RT-700/A is a specifi c variant designed to provide voice communications in the ATC frequency band (117.975MHz to 137.000MHz), certifi ed in accordance with EASA ETSO-2C169a and ETSO-2C128.

KEY FEATURES

- Frequency range of 30MHz to 470MHz in AM and FM Modulation
- EASA ETSO 2C169a and ETSO 2C128 certifi ed (ETSOA 210.10057877)
- Designed in accordance with DO-178B and ED-80 with DAL “C”
- Fully compliant to ED-23C and ICAO annex 10 with FM immunity fi ltering embedded
- Several options available for channel spacing, guard frequencies and preset channels operation
- Cockpit control via dedicated control panel (see image on reverse), ARINC 429 Bus or RS-485 Serial Line
- Compatibility with crypto devices for operation in the base-band or diphase modes
- Compatibility with Link 11 modem
- Lightning indirect e ect protection
- Compact size and low weight
- Low power consumption.

LEONARDO

A unique feature of the RT-700/A transceiver is the presence of both ETSO and military functionality. This allows military aircraft to be equipped with VHF ETSO functions without the need for additional dedicated radio equipment. Typical examples of RT-700/A dualuse application are for Trainer or Government transport aircraft.

In the RT-700/A all functions are implemented i.a.w. DAL "C" (as per DO-178B and ED-80), this allows a simple and quick switch between ETSO and non-ETSO. functions based on selected frequency. In Voice Mode, communication in the ATC band (ETSO function) is initiated when a valid frequency in the 117.975MHz to 137.000MHz range is selected. Selection of a valid frequency outside the 117.975 to 137.000MHz range allows operation of non-ETSO functions.

An innovative, company patented technology reduces transmission power consumption of the whole RT-700 family by more than 35% compared to the previous design, reducing heat dissipation and improving reliability.

TECHNICAL CHARACTERISTICS

GENERAL

Frequency bands and modulations	
VHF-FM	30MHz to 88MHz
VHF-AM	108MHz to 118MHz (only Rx)
VHF-AM	118MHz to 156MHz
UHF-FM	156MHz to 174MHz
UHF-FM/AM	225MHz to 400MHz
UHF-FM	400MHz to 470MHz
Preset channels	99
Channel spacing	25kHz (8.33 in ATC band)
Guard channels (automatically selected with the operating band)	40.5MHz 121.5MHz 156.8MHz 243.0MHz
Emergency frequency	243.0MHz (Military) 121.5MHz (Civilian)
Frequency stability	1 part in 10^{-7}
Channel change time	20ms
Duty cycle	1 min Tx 5 min Rx without forced air cooling
8.33kHz operation	Compliant to ED-23C class H2
Power supply requirements	+28VDC (i.a.w. DO-160G)
Power consumption	125W max (Tx) 42W (Rx)
Reliability MTBF:	2000hr

DIMENSIONS AND MASS

Dimensions (H x W x L)	126mm x 126mm x 245.5mm
Mass	<4.3Kg

ENVIRONMENTAL CONDITIONS ED-14G/DO-160G

Temperature	-45°C to 70°C (continuous) -55°C to 85°C (storage)
Altitude	Up to 25,000 feet
Relative humidity	Up to 95%

EMI SPECIFICATION ED-14G/DO-160G

Lightning i. e. protection	A2J2L2 i.a.w. DO-160G

MAIN RECEIVER

Sensitivity (S+N)/N = 10 dB	0.6µV (FM) 1.5µV (AM)
Audio output distortion	5%
Spurious rejection	Better than 70dB in NB mode for frequency di ering 100kHz
Squelch	Operating both on base band signal-to-noise ratio and RF carrier level SNR Thresholds adjustable

GUARD RECEIVER

Sensitivity (S+N)/N = 10 dB	0.6µV (FM) 1.5µV (AM)
Spurious rejection	Better than 70dB in Narrow Band mode for frequency di ering 100kHz
Squelch	Operating both on base band signal-to-noise ratio and RF carrier level SNR Thresholds adjustable

TRANSMITTER

›Output Power	10W min in AM 15W min in FM
Spurious emissions	Less than -80dBc from 600kHz
Distortion	5% max
Signal/Noise ratio	45dB min for m = 0.8kHz in AM 30dB min at f = 6kHz in FM

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