OTE ARES

AIR-GROUND
RADIO EQUIPMENT FOR SINGLE SKY

OTE ARES (Air-ground Radio Equipment for Single-sky) is the 5th generation of VHF and UHF radio equipment family, representing the top quality Leonardo product line for ground-to-air civil and defense communications.
Thanks to its software-defined radio architecture, conceived with a new design concept, the latest Leonardo radio equipment series can be used for transversal system solutions, suitable for both ATC and Defense markets.

OPERATIONAL CONTEXT

OTE ARES (Advanced Radio Equipment for Single-Sky – VHF band) is the latest generation of Leonardo ATC equipment, meeting present and future ATC communications requirements.
OTE ARES equipment has been developed on a DSP-based software radio approach, such to satisfy both functional and operational requirements in any possible configuration.
This translates into a high degree of flexibility and functionality, an easy and intuitive HMI (Human Machine Interface) user interface, remote control capabilities and functions, integrated tests, maintenance operations.

PERFORMANCE OUTLINES

- State-of-the-art processing, networking and Operation & Maintenance capability.
- 8 channels transceiver/transmitter Ground Station or 16 channels receiver Ground Station deployed with 1+1 Embedded Changeover redundant configuration. This includes cavity filters and systems for network access, control and monitoring.
- High flexibility in terms of configuration. Namely capability to arrange 2 transceivers, or 2 transmitters, or 4 receivers, or insert a cavity filter module in place of one radio in a single 2U high, 19" wide cabinet.
- High efficiency and low consumption, achieved by means of a Leonardo patented power converter module based on Pulsed Wide Modulator (PWM) technology.
- High redundancy at radio and interfacing line level (cross-failure tolerant concept), achieved by means of an "Embedded Changeover" Leonardo patented functionality.

LEONARDO

KEY FEATURES

- Double physical Ethernet interface for VoIP, using bonding technology for fast and seamless connectivity redundancy purposes.
- Dual backbone for smooth transition between legacy connections and new IP networks.
- Embedded line delay tuning capable to manage different propagation characteristics (ground and satellite based connections).
- Easy configuration of radio parameters with a simple web browser providing automatic configuration upload capabilities.
- Fully compliant with EUROCAE ED137C standard (100% tests passed during FAA VoIP Interoperability Event, May 2019), with the following additional features:
  - Up to 8 simultaneous VoIP connections towards different VCSS, with embedded audio conferencing capability;
  - VoIP Recorder Interface according to ED137C.4 standard.
- IPv6 and IPsec ready.
- Voice (AM-DSB 25 & 8.33 kHz for VHF, AM-DSB 25 for UHF) and data-link (VDL2 and ACARS for VHF) operating modes.

TECHNICAL SPECIFICATIONS

Frequency range	VHF 112 Mhz to 156 MHz
	UHF 225 MHz to 399.975 MHz
Frequency stability	VHF < 1 ppm / <0.3 ppm (on demand)
	UHF < 1 ppm
Operating temperature range	- 20°C to +55°C
	(relative humidity: 5 to 90%
Supply voltage	AC 88 to 265 VAC 50/60 Hz (full range)
	DC 20 to 32 VDC
	(automatic changeover on
	AC source failure)
Power consumption AC	VHF 200 W max. (TX state)
	50 W (standby and RX state)
	UHF 300 W maximum (TX state)
	50 W (standby and RX state)
DC	VHF 180 W max. (TX state)
	45 W (standby and RX state)
	UHF 250 W maximum (TX state)
	45 W (standby and RX state)
Mechanical dimensions	½ 19" standard rack (42TE),
	2U (88.9 mm),530mm depth
	(connectors included)
Weight	10.5 Kg maximum
MTBF (100% duty cycle)	VHF 83.450 h @ +20°C
	UHF 79.800 h @ +20°C
MTTR (typical)	8 minutes

LEONARDO