MICRA

CUTTING-EDGE CNS RADIO RECEIVER

MICRA is ALTYS Technologies' all-in-one aeronautical digital radio receiver based on innovative software-defined radio (SDR) technology. Supporting simultaneous operation over multiple modes and channels with the highest detection and decoding performance, MICRA is the most flexible and reliable digital radio receiver available to today's aviation industry.

Through digital signal processing (DSP) and with a powerful embedded computer, MICRA is able to simultaneously process VDL Mode 2 and ACARS communications over up to four frequencies as well as ADS-B (including 1090ES, UAT), and includes a provision to support GBAS monitoring. The equipment additionally supports advanced RF spectrum analysis and incorporates a new generation GNSS chipset for traffic timestamping, equipment synchronization, and tracking purposes. With its IP interface, MICRA offers a great ease of integration with aeronautical networks and ATC systems. It is also plug-and-play with ALTYS's aviation data processing solution, COSMOS – allowing real-time access to advanced KPIs.

ALTYS
TECHNOLOGIES
PROVIDING DEPENDABLE CNS SYSTEMS

- **Communications**
  4 simultaneous VHF frequencies, ACARS, VDL2 and more

- **Navigation**
  GNSS Receiver with GPS, GLONASS, or GALILEO constellations

- **Surveillance**
  ADS-B including 1090ES and UAT

GENERAL CHARACTERISTICS

DIMENSIONS	2U 19 inch rack mounting
	482.6 mm wide, 88.14 mm high
	350 mm deep
WEIGHT	≤5 Kg
SUPPLY VOLTAGE	110V/230V - 50/60 Hz
POWER CONSUMPTION	Max 300W (25 ºC)
TEMPERATURE RANGE	-40ºC to 70ºC
HUMIDITY RANGE	10% to 90% RH, non-condensing
COOLING SYSTEM	Upper side: Fan holes & internal CPU cooler
	Rear side: Case fan
TIME SYNCHRONIZATION	Multiple sources including embedded GNSS

CONFORMANCE

EC COMPLIANCE	Directive 2014/30/CE on Electromagnetic Compatibility (EMC)
	Directive 2011/65/EU on the Restriction of the use of Hazardous Substances in electrical and electronic equipment (RoHS)
	Regulation (EC) Nº 552/2004 on Interoperability of the European Air Traffic Management Network
	Directive 2006/95/CE on Voltage Limits

INTERFACES

RF CONNECTORS	BNC/F (VHF and ADS-B)
GPS CONNECTOR	SMA
SERVICE FACILITY CONNECTIONS (remote maintenance and updates; data transmission)	LAN & WAN Ethernet RJ45 connectors, USB connector

Plug-and-play to ALTYS COSMOS system and EUROCONTROL MOON

DATA OUTPUT

VHF DATA OUTPUT FORMATS	Raw Datalink data (UPX* format), interface to COSMOS
	I/Q data for RF analysis (optional)
ADS-B OUTPUT FORMATS	Raw protocol data (UPX* format), ASTERIX capable, interface to COSMOS

*ALTYS format

VHF RECEIVER

OPERATIONAL MODES	Full-Duplex Mode: Enables simultaneous reception of ACARS & VDL2 data
	Single Mode: Enables VDL2 data reception only; allows maximal performance levels
OPERATING FREQUENCY RANGE	118 MHz - 137 MHz
FREQUENCY ACCURACY	< 2.5 ppm
SENSITIVITY	< -130 dBm (with uncorrected BER < 10-3)
MODULATION	VDL2: D8PSK
	ACARS: MSK
RECEIVER DYNAMIC RANGE	100 dBm
ADJACENT CHANNEL REJECTION	ACARS: ≥ 60 dB
	VDL: ≥ 44 dB
SYMBOL RATE	10.5 ksym/s (VDL2)
BIT RATE	31.5 kb/s (VDL2), 2.4 kb/s (ACARS)
CHANNEL SPACING	25 kHz

ADS-B RECEIVER

OPERATING FREQUENCY RANGE	1090 MHz
FREQUENCY ACCURACY	< 2.5 ppm
SENSITIVITY	< -130dBm
MODULATION	PPM
RECEIVER DYNAMIC RANGE	100 dBm
BANDWIDTH	± 1 MHz

GNSS RECEIVER

RECEIVER CONSTELLATIONS	GPS/GLONASS/GALILEO
SATELLITE-BASED AUGMENTATION SYSTEMS	WAAS, EGNOS, MSAS
SENSITIVITY	-165dBm

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ALTYS
TECHNOLOGIES