NAV-ADF
Antenna Signal Generator

- ADF antenna signal generator with three signal outputs: sine/cosine signal for Lateral and Longitudinal Loop antennas and selectable sine/cosine waveform for Sense antenna
- Frequency range of 190 kHz to 1750 kHz
- Power level range of -30 dBm to +1.2 dBm (up to +10 dBm on request)
- Bearing accuracy 0.8°
- Output impedance 78 Ohm (± 5%)
- Conforms to ARINC 712 specification
- FAST Ethernet technology
- Embedded in ADS2 software environment
- Simulation interface to flight environment and other models
ADF Overview

The Automatic Direction Finder (ADF) is an airborne equipment to find angular directional information of the ground station (NDB – non-directional beacon). The direction information is determined by the reception strength of two loop antennas with special orientation and a sense antenna. The displayed angle depends on the direction of the aircraft nose to the ground station.

Functional Scope

The **NAV-ADF Antenna Signal Generator** device is designed for functional replacement and simulation of ADF antenna signals.

The device provides the following ADF signal outputs:

- RF output Sense antenna (sine or cosine)
- RF output Lateral Loop antenna (sine)
- RF output Longitudinal Loop antenna (cosine)
- COM/ID identifier via amplitude modulation

An ADS2 realtime workstation is used to control the device via FAST Ethernet.

### Technical Data

**RF Signal Generator**

- RF carrier frequency:
  - 190 kHz to 1750 kHz (programmable)
  - Tolerance: ±175 Hz
  - Spacing: 0.5 kHz
- RF outputs of 3 ADF antenna simulation signals:
  - Sense antenna signal: selectable sine or cosine waveform
  - Lateral loop antenna signal (sine)
  - Longitudinal loop antenna signal (cosine)
- RF output power level per channel:
  - -30 dBm to +1.2 dBm (up to +10 dBm on request), programmable, at 78 Ohm receiver input impedance
  - Tolerance: ±5%
- RF output impedance: 78 Ohm ±5%
- RF output isolation:
  - AC-coupled, symmetrical floating via transformer
  - Isolation resistance to Ground: 1 MOhm
- COM/ID:
  - Amplitude-modulated COM/ID identifier according to ITU standard A2A (audio Morse code)
  - Modulation frequency: 1020 Hz ±50 Hz
  - Modulation depth: 95%
  - Programmable identifier for up to 4 letters
  - Modulation ON/OFF mode
- Remote control via FAST Ethernet

**Physical Dimensions**

- Size: 1U, 19-inch rackmount design
- Width: 482.6 mm
- Height: 44.45 mm
- Depth: 168.0 mm
- Weight: 2.5 kg

**Power Supply**

- 230 V AC single-phase
- Max. consumption: 30 W

**Environmental Conditions**

- Operating temp.: 0 °C - 70 °C
- Storage temp.: -40 °C - 85 °C
- Max. humidity: 0 - 90% non-condensing

**Required Software**

- Windows®7 or CentOS RT
- Avionics Development System (ADS2) (PN 202112)

**Part Number**

- 403658

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**Data Sheet**

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