CNHF Vehicular

CNHF Vehicular is a modular wideband HF SDR for vehicles and base stations. Built on the proven CNHF Manpack core, it delivers infrastructure-independent long-range communications, automatic operation, and seamless mounted-to-dismounted continuity.

CNHF Vehicular is a modular, platform-integrated wideband HF SDR solution designed for wheeled and tracked platforms, mobile and fixed command/support sites.

CNHF Vehicular comprises

- CNHF Manpack transceiver
- Vehicular Mounting Bracket (**VMB**)
- Power Supply Unit (**PSU**)
- Power Amplifier Unit (**PAU**)
- Antenna Tuning Unit (**ATU**)

The system enables wideband HF communications over extended distances to support strategic and operational reach in demanding military operational environments. It is engineered for harsh field conditions and is designed and tested, as applicable, to meet the requirements of MIL-STD-810 and MIL-STD-461. It simplifies platform integration by standardising power distribution and control across all subsystems. The modular architecture allows CNHF Vehicular to be installed as a single integrated assembly or as distributed subsystems to fit vehicular platforms with limited installation space.

The **VMB** provides a mechanical mounting base for whole system or individual subsystems. The design incorporates integrated shock and vibration isolation via dedicated damping elements to support operation on mobile platforms. The VMB provides active cooling for both the Manpack transceiver and the PSU.

The **PSU** provides MIL-STD-1275 compliant input power protection for vehicular electrical environments and supports both 12 VDC and 24 VDC vehicle electrical systems across military and commercial platforms.

The **PAU** supports the full CNHF Manpack operational frequency range across HF and VHF, delivering 250W PEP output power on HF and 50W PEP on VHF. It features two separate 50-ohm RF output connectors. The unit is powered from a 28 VDC supply with MIL-STD-1275 compliant input protection and is actively cooled by forced airflow over external heatsink.

The **ATU** provides impedance matching for whip, dipole and long-wire antennas, with additional support for loop antennas. It typically tunes to a VSWR of 1.5:1 or better to reduce reflected power and improve RF efficiency. The ATU supports the full Manpack frequency coverage across HF and VHF and is power-rated to match the PAU output levels.

Part number: KNL-4001
Product name: CNHF Vehicular transceiver
NSN: -
Commodity code: -

TECHNICAL SPECIFICATIONS - GENERAL

Operation modes	Supports all CNHF-MP1 transceiver operation modes. For further information, see the product datasheet for CNHF-MP1 transceiver.	**Dimensions with handles**	CNHF-MP1, PSU & PAU: 218mm (H) x 382mm (W) x 404mm (D) ATU: 213mm (H) x 186mm (W) x 391mm (D)
PSU power input	11-36VDC	**Weight**	CNHF-MP1, PSU & PAU: ~28 kg with BB-2590 battery ATU: ~10 kg
Transceiver mounting	Quick release mechanism with thumb screw	**Material**	Aluminium & Stainless Steel
Cooling	Active heatsink cooling for the power supply and CNHF-MP1 transceiver	**Colour**	Military green
Mounting	Mounting to base with bolts. Available with hole patterns compatible with legacy vehicle radio system mountings.		

TECHNICAL SPECIFICATIONS - CNHF-MP1 TRANSCEIVER

For further information, see the product datasheet for CNHF-MP1 transceiver. The supported product variant is KNL-2001.

TECHNICAL SPECIFICATIONS - POWER AMPLIFIER UNIT

Frequency range	HF: 1.6 - 30 MHz, VHF 30 - 54 MHz	**Cooling**	Active heatsink cooling
TX Power output	HF: 250 W, VHF: 50 W (PEP)	**Control interface**	RS-485 serial line
RF Input	N connector (female) 50 ohm	**Other interfaces**	RS-485 serial line for antenna tuning unit Cooling fan interface 28VDC power input Grounding point
RF Output	RF OUT 1: N connector (female) 50 ohm RF OUT 2: N connector (female) 50 ohm		

TECHNICAL SPECIFICATIONS - ANTENNA TUNING UNIT

Frequency range	HF: 1.6 - 30 MHz, VHF 30 - 54 MHz	**RF Output**	ANT HV OUT: Threaded stud with insulator ANT 50Ω OUT 1: N connector (female) 50 ohm ANT 50Ω OUT 2: N connector (female) 50 ohm
Antenna types	4 to 10 m whip antennas wire antennas dipole antennas	**Cooling**	Passive heatsink cooling
Antenna matching capabilty	Typical VSWR tuned to 1:1.5	**Control interface**	RS-485 serial line
RF input power rating	Up to 250 W (PEP)	**Remote capability**	Up to 20 metres separation between the transceiver and the antenna tuning unit.
RF Input	N connector (female) 50 ohm	**Other interfaces**	RS-485 serial line for antenna 28VDC power input Grounding point

ENVIRONMENTAL & STANDARDS

Operational temperature range	-40...+55 °C
Environmental standards	MIL-STD-810H
EMC standards	MIL-STD-461G
Power supply	MIL-STD-1275

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