

COMROD ACS007K

HF/VHF TX/RX antenna switch

Application:

The antenna switch is intended for use with 5 transceivers together with 1 or 2 antennas. During transmission the active transmitter is automatically connected to the antenna, while an inhibit signal is issued to the other transmitters—the receivers are either disabled, or connected to the (optional) receive antenna.

The receive signal is amplified and distributed to all receivers with a low noise amplifier.

It is possible to give priority to one transmitter. For fail-safe operation one transmitter is connected directly to the antenna in case of power failure.

The unit uses vacuum relays for fast/high power switching. RF sensors are used for TX/RX switching

Ethernet and USB connectors are available for remote control, and interfacing to the radio system. A ¼VGA display is also used for control and indication.

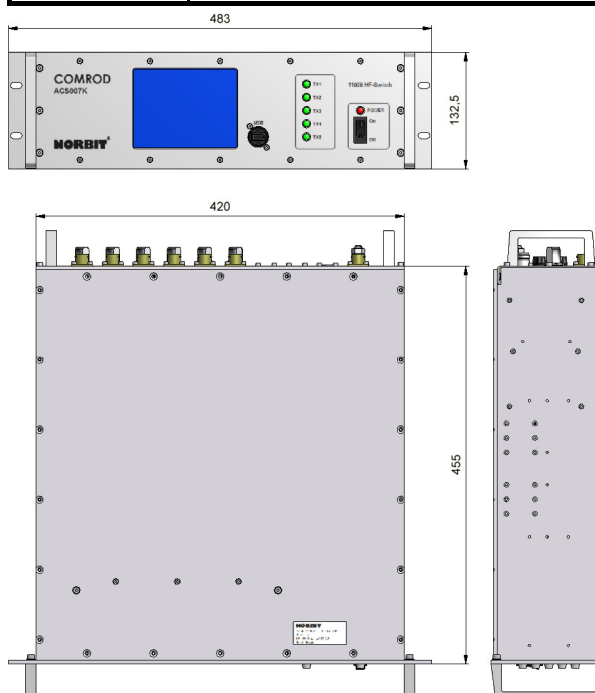


Electrical specifications:

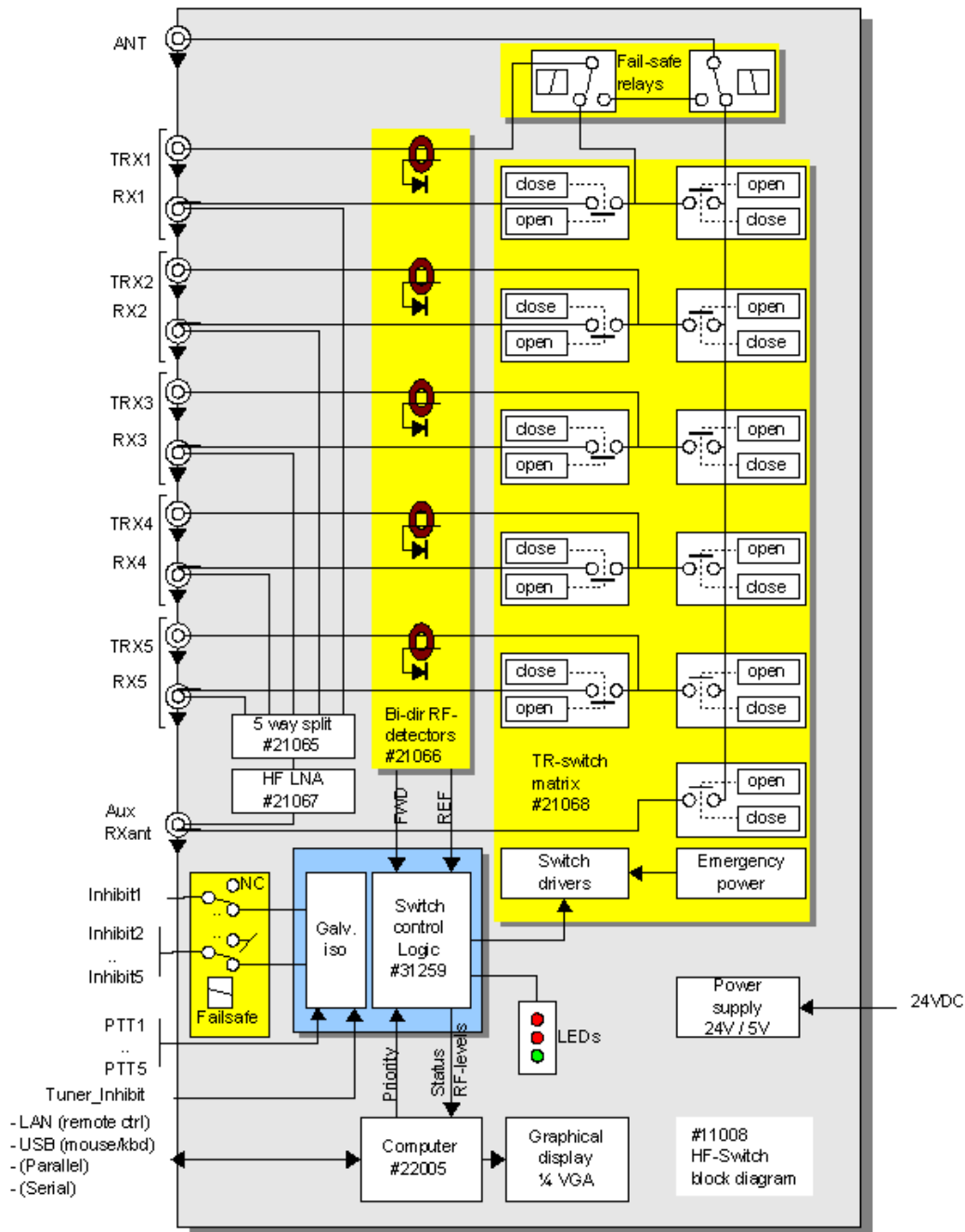
Frequency range	1.6-88MHz,
Nominal impedance	50 ohm
TX signal path	
Power rating	500W continuous, 1000W PEP
Loss	0.1dB typical @ <30MHz 0.2dB typical @ 30-88MHz2dB
TX/RX switching	
Switching speed	1ms typical
Switching level	37dBm ±3dB
SSB delay	0..2.55s configurable
RX signal path	
Gain	-4..2 dB
P -1dB, out	30dBm typical
IP3, out	40dBm typical
Isolation, out	>20dB @ 1.6-30MHz >10dB @ 30-88MHz
Max. inp. Power	30dBm continuous
Power supply	18-32V @ <2A, galvanic isolation
Connectors	
RF	N female is standard, others on request
Power	Amphenol 62GB series, others on request
Other	Circular, USB, RJ45

Mechanical specifications:

Size	3U, 19", 455mm depth (ex. handles and connectors)
Temperature	
Operational	-0°C.. +55°C (optional -20°..+70°)
Storage	-40°C.. +70°C



System description



During reception, the transceivers (TRX1..5) receive their signals from the LNA via the Automatic TR switches. The LNA may be connected to a separate RX antenna for duplex operation, or to a common TX/RX antenna via the vacuum relay switch (simplex only).

A transceiver in TX mode is detected by the Automatic TR switch that issue signals (PTT) to the Control Logic to enable a direct signal path to the antenna. A TX inhibit signal is issued to the other transmitters.

One of the transceivers may be configured for priority in TX mode. The TX signal is routed to the antenna independent of the mode of any other transceiver. These are instead issued the TX inhibit signal.

Relays on one input and the antenna port implements the fail-safe function.

When duplex operation is necessary an optional RX antenna can be fitted. The LNA is then configured the receive its signal from this instead of from the relay switch.

Connectors RX1..5 includes a mechanical switch making it possible to use both a single TX/RX coax or separate TX and RX cables from the transceivers.

A power supply provides galvanic isolation.