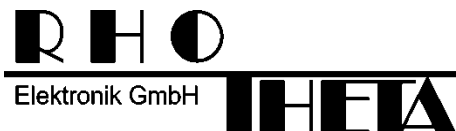


# User Manual

# AIS Suppression (Notch)



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## **Note**

The manufacturer reserves the right to make modifications at any time and without previous information of the here described product.

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## 1 General Description

The AIS Suppression Notch is a cavity filter, which sufficiently suppress AIS signals at 161,965 MHz to 162,035 MHz by a notch filter function with a very low insertion loss in its pass band.

The usage of the AIS suppression filter allows the installation of the direction finder antenna close to AIS transmitter stations and also allows the interference-free operation of the DF. It is recommended to install the AIS suppression filter if the distance between AIS transmitter with an EIRP of 10W and the Direction Finder is less than 200m (s. Chapter Installation).



## 2 Installation

### 2.1 System Integration

The AIS – Suppression (Notch) is a reciprocal filter. Thus, the operating direction plays no role. Both BNC RF connectors can be used as input or as output.

The integration into the RT-1000 Multichannel system requires the installation of the AIS filter inside the cabinet between the “Line Protection Box” and the RF Splitter (s. Figure 1).

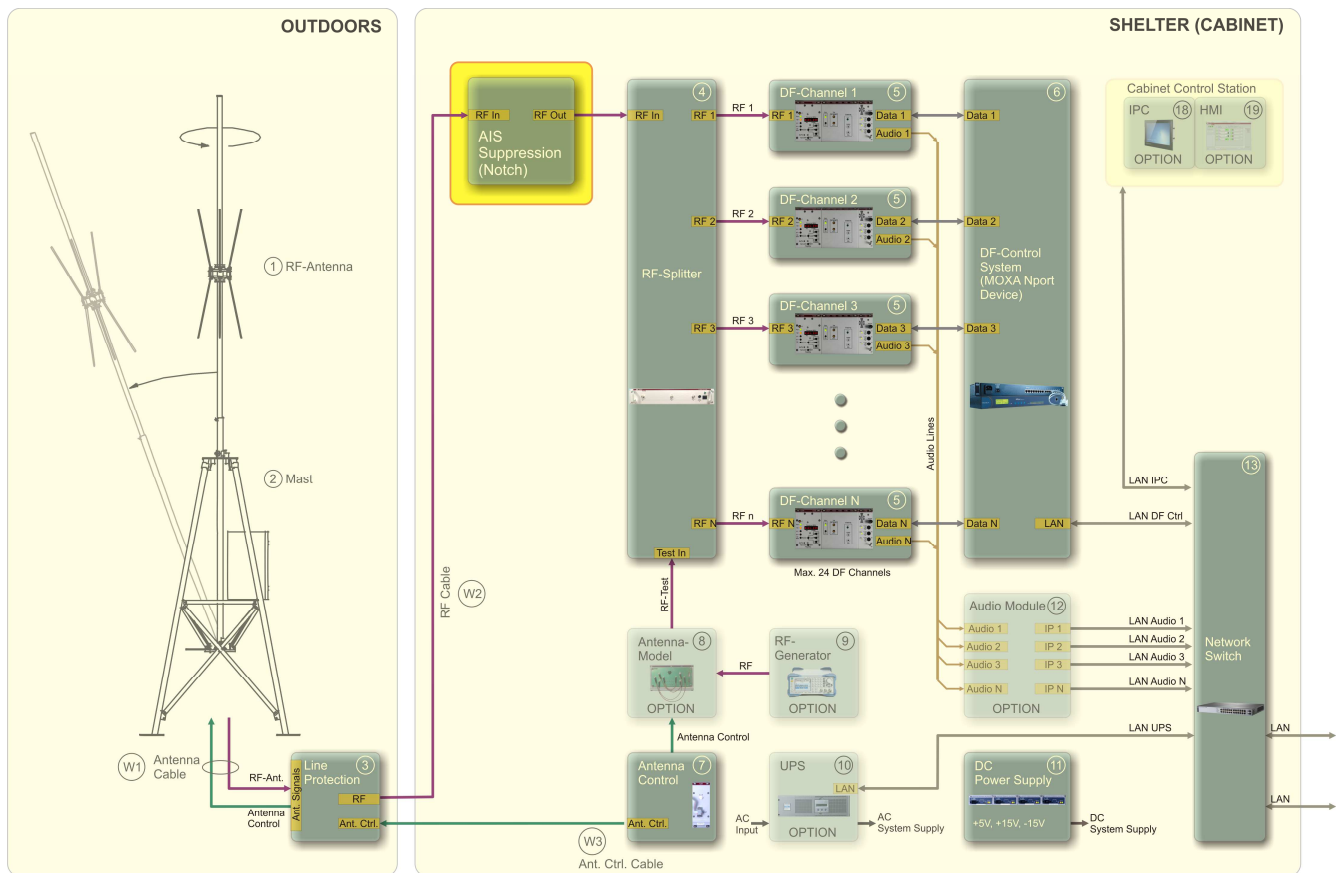


Figure 1 "Integration into the RT-1000 Multichannel System"

The integration of the AIS filter into RT-1000 A and RT-1000 C systems requires the installation of the filter between the DF-Antenna and the receiver input of the appropriate system. Please review the user manual of the desired system.

## 2.2 Installation Site Requirements

The AIS filter allows the installation of the DF antenna close to the AIS transmitter station. However, the installation on site should comply with the following requirements in order to provide an interference-free operation of the DF system (s. Figure 2).

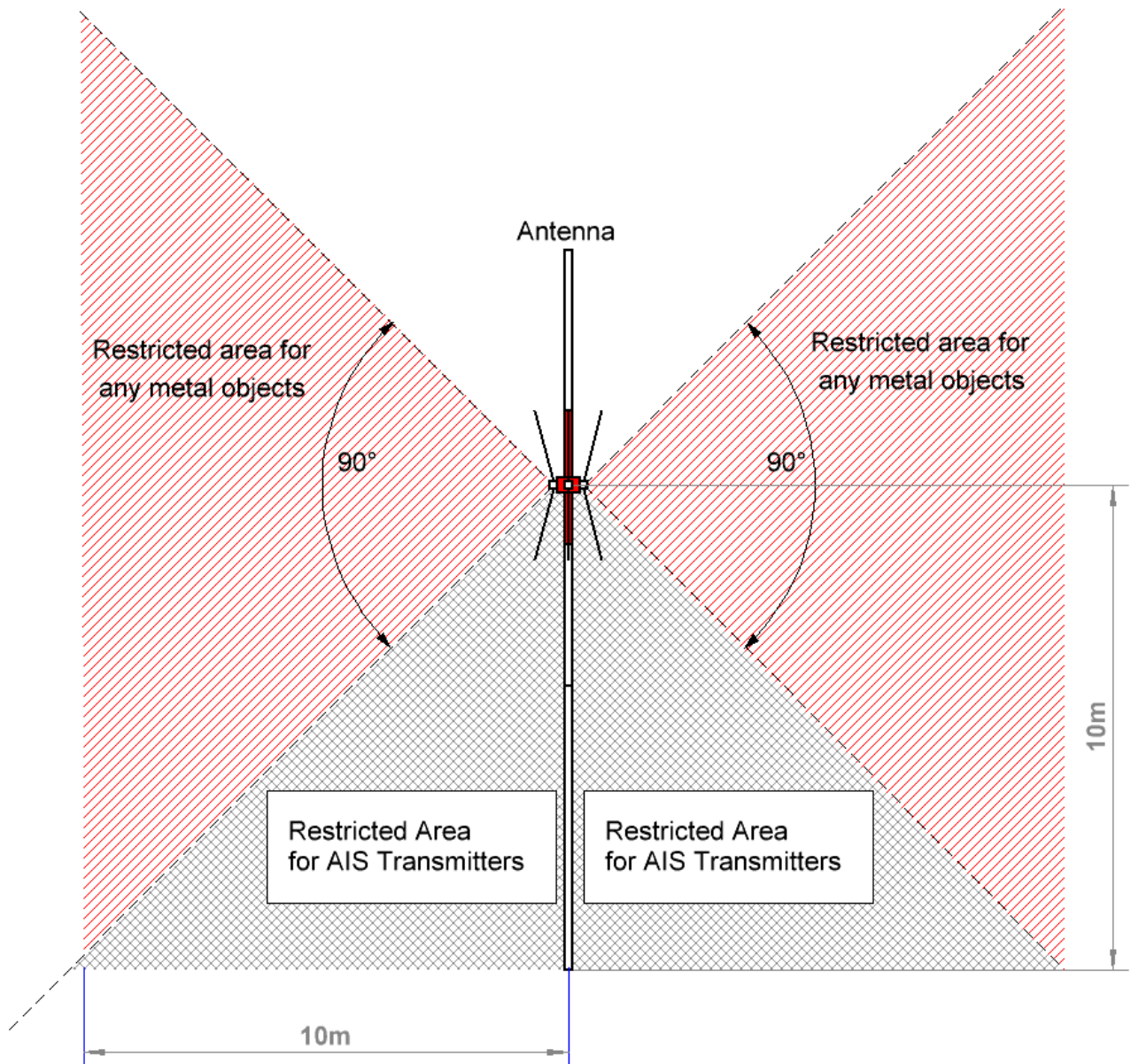


Figure 2 "Restricted Areas for AIS Transmitters"

The figure 2 applies to AIS-Transmitters with following characteristics:

- EIRP:  $\leq 10W$
- Phase Noise:  $\leq -145 \text{ dBc / Hz @ desired receiving frequency}$
- Spurious:  $\leq -105 \text{ dBc @ desired receiving frequency}$

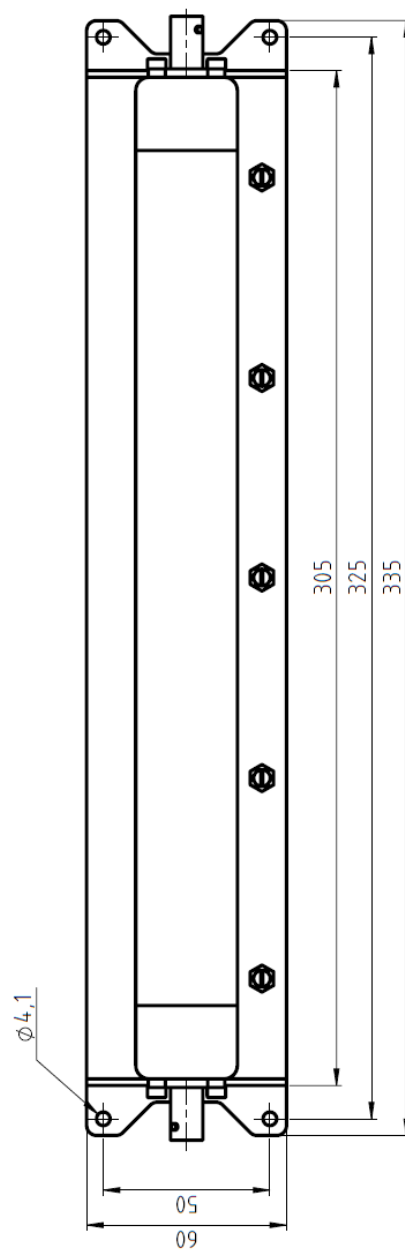
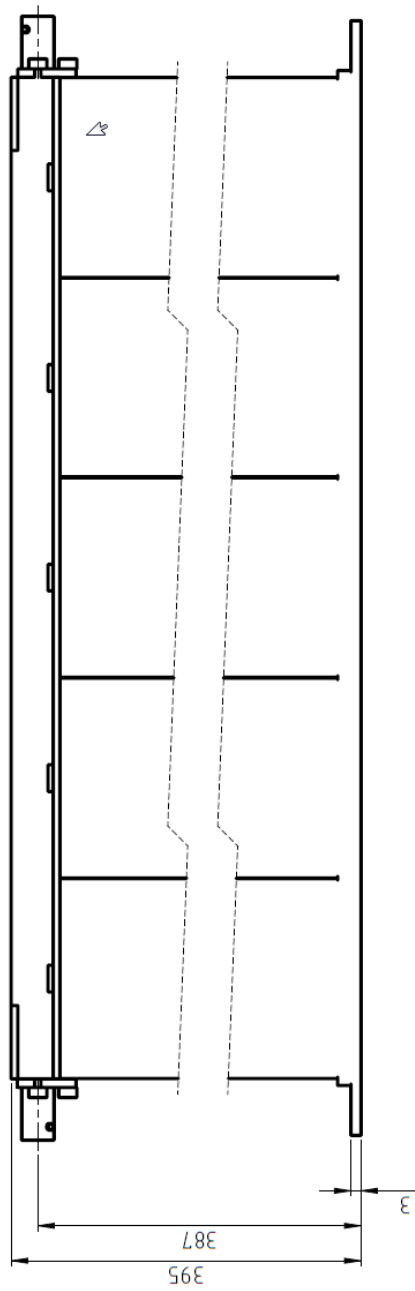
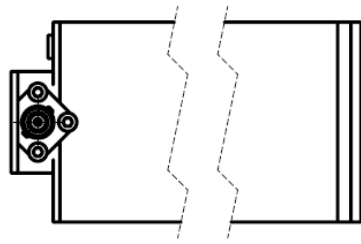
### 3 Electrical Characteristics

AIS Suppression (Notch)			
Parameter	Condition	Limit	Typical
Insertion Loss (Lower pass band)	DC ... 157.5 MHz	$\leq 0.75$ dB	$\leq 0.5$ dB
	157.500 MHz ... 161.600 MHz	$\leq 3,5$ dB	$\leq 3.0$ dB
Insertion Loss (Upper pass band)	162.500 MHz ... 166.600 MHz	$\leq 3,5$ dB	$\leq 3.0$ dB
	166.600 MHz ... 470.000 MHz	$\leq 0.75$ dB	$\leq 0.5$ dB
Attenuation (Stop band)	161.965 MHz ... 162.035 MHz	$\geq 20$ dB	$\geq 30$ dB
AIS Suppression	161.975 MHz (Channel 87B)	$\geq 20$ dB	$\geq 30$ dB
	162.025 MHz (Channel 88B)	$\geq 20$ dB	$\geq 30$ dB

### 4 Environmental and Mechanical Characteristics

Environmental and Mechanical Characteristics	
Parameter	Value
Temperature Range	-10°C ... +60°C
Connectors	BNC (female)
Dimensions	395 mm x 335 mm x 60 mm
Weight	7.7 kg

## 5 Mechanical Drawing





## 6 Notes