13.3 WLAN radiation characteristics of the HMI device

This section contains illustrations on the radiation characteristics of various antennas.

Note

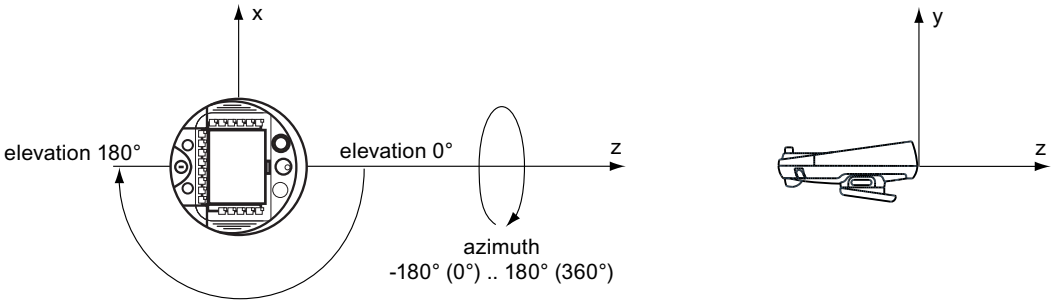
The radiation characteristics were determined under optimum conditions in a low reflection room in an antenna lab.

13.3.1 Radiation characteristics in the 2.4 GHz band

Antenna type	Dual port patch antenna
Polarization	Vertical and horizontal
Frequency band	2.4 to 2.483 GHz
Antenna gain, max.	3 dBi
Impedance	50 Ω

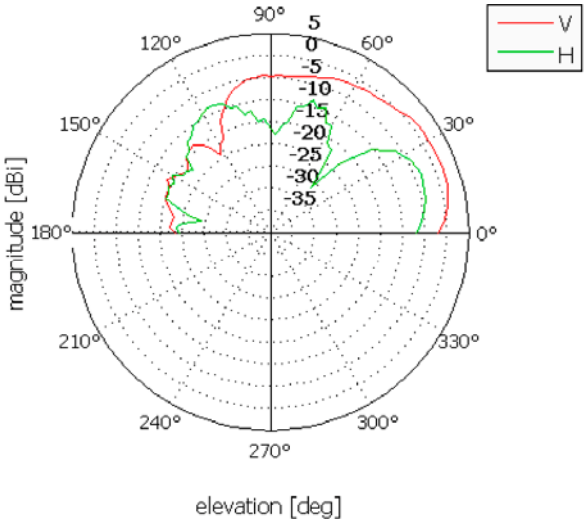
Range of the transmitter based on angle

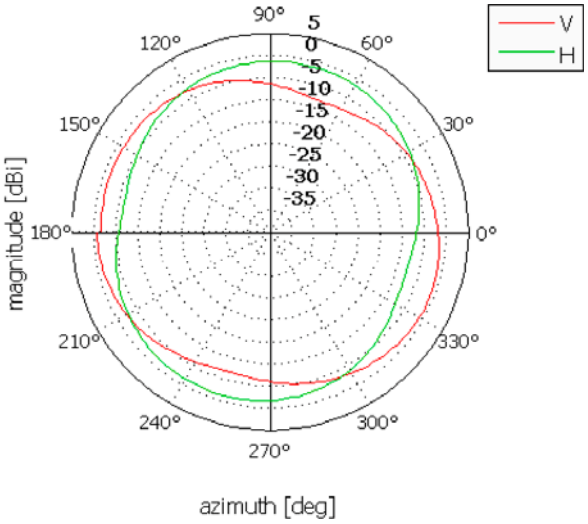
The figure below shows the coordinate system applied to the HMI device.



The figure below shows the range of the transmitter based on angle.

Range at 2.45 GHz



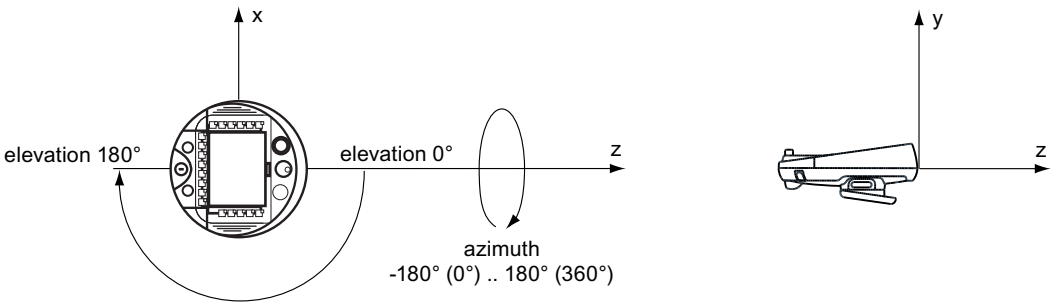


13.3.2 Radiation characteristics in the 5 GHz band

Antenna type	Dual port patch antenna
Polarization	Vertical and horizontal
Frequency band	5.0 to 5.6 GHz
Antenna gain, max.	5 dBi
Impedance	50 Ω

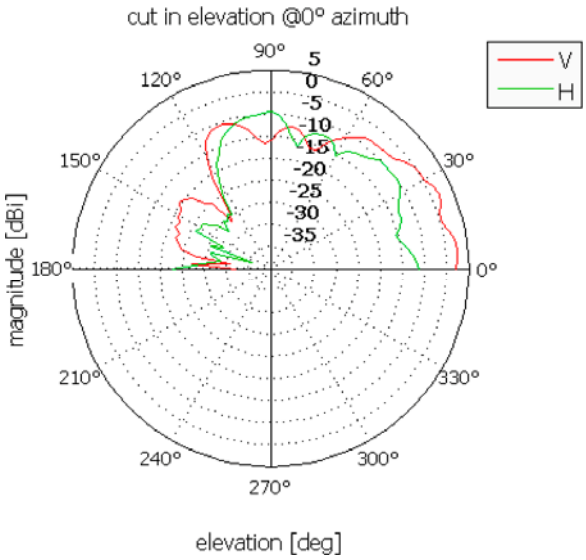
Range of the transmitter based on angle

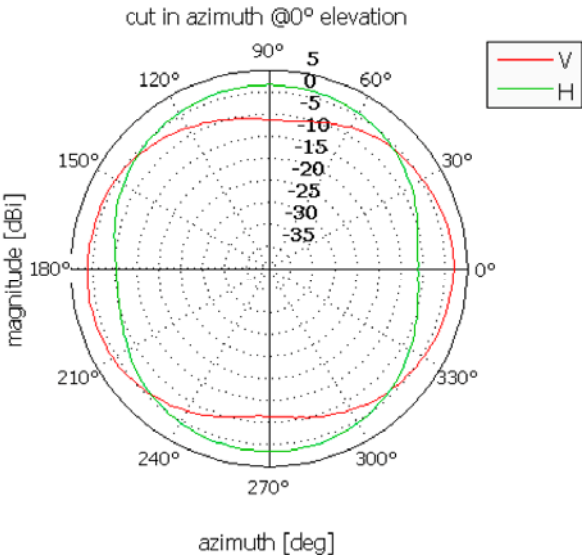
The figure below shows the coordinate system applied to the HMI device.



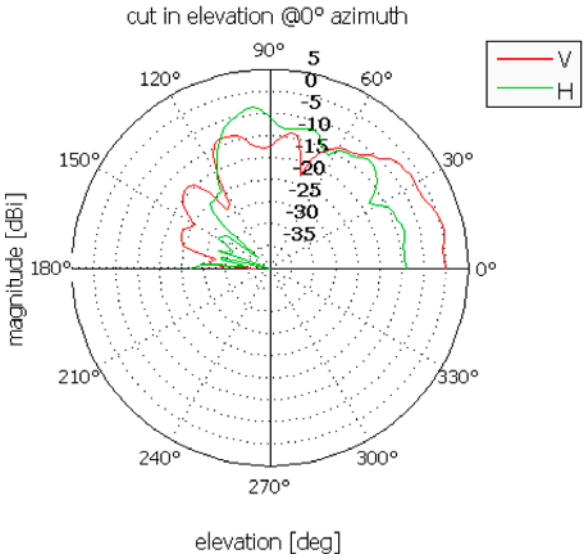
The figures below show the range of the transmitter for the various frequencies in the 5 GHz band based on angle.

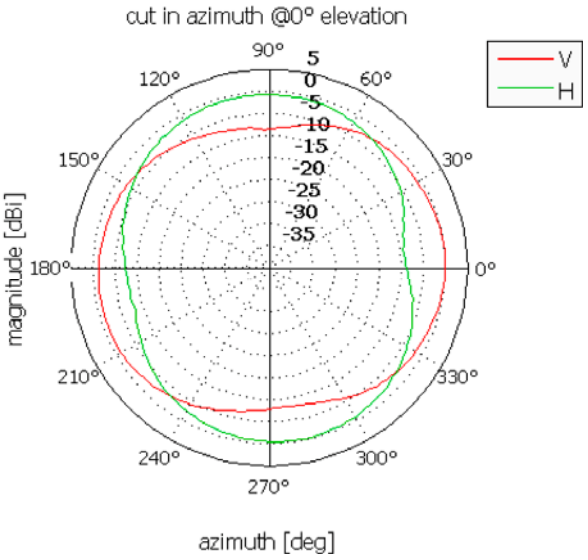
Range at 5.0 GHz



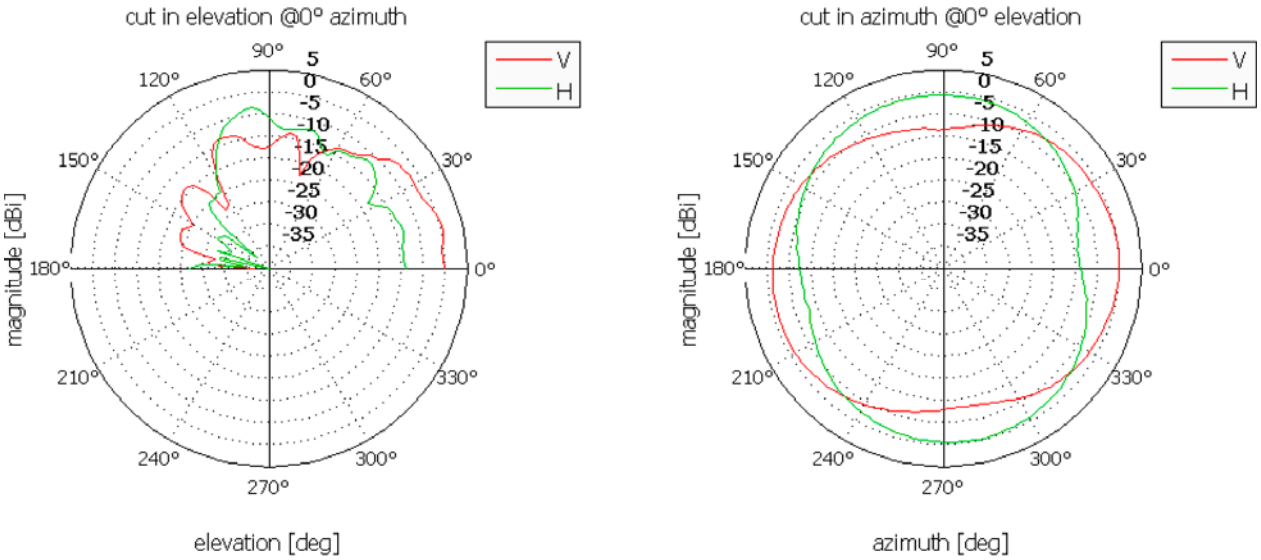


Range at 5.3 GHz





Range at 5.6 GHz



13.4 Radiation characteristics of the transponder system

This section contains illustrations on the radiation characteristics of various antennas.

Note

The radiation characteristics were determined under optimum conditions in a low reflection room in an antenna lab.

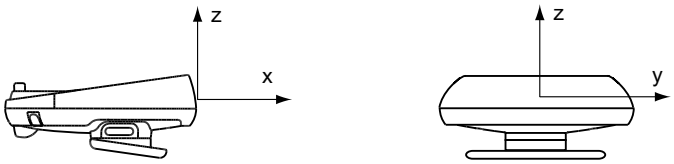
13.4.1 Radiation characteristic of HMI device

The radiation characteristics are in regards to the antennas for the transponder system.

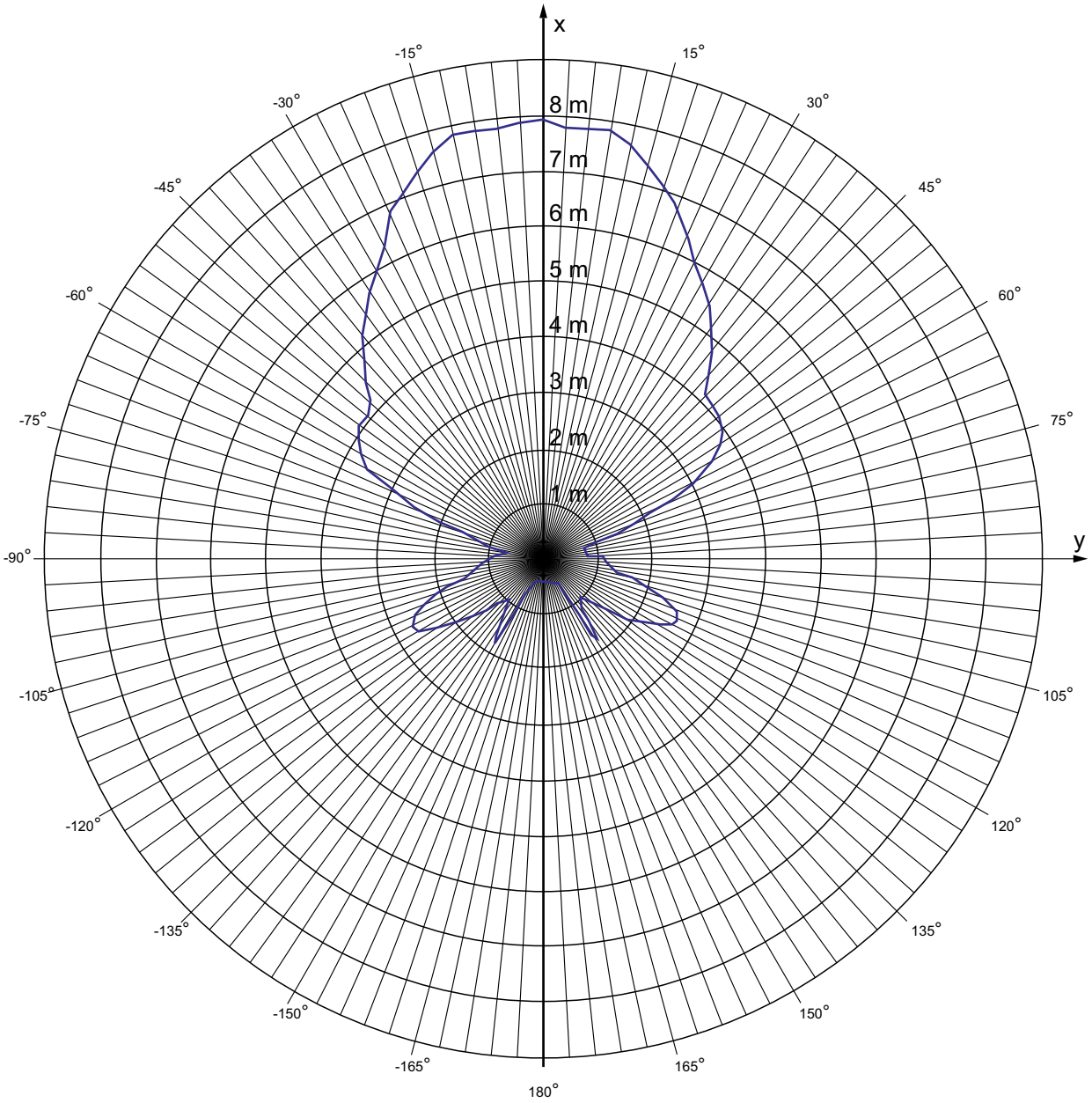
Antenna type	Dual port patch antenna
Polarization	Vertical and horizontal
Frequency band	2,400 to 2,483 MHz
Antenna gain in principle ray direction, max.	Port 1: 2,6 dBic
	Port 2: 2.7 dBic
Impedance	50 Ω
Full widths at half maximum, horizontal at 2.45 GHz	83°
Full widths at half maximum, vertical at 2.45 GHz	80°

Range of the transmitter based on angle

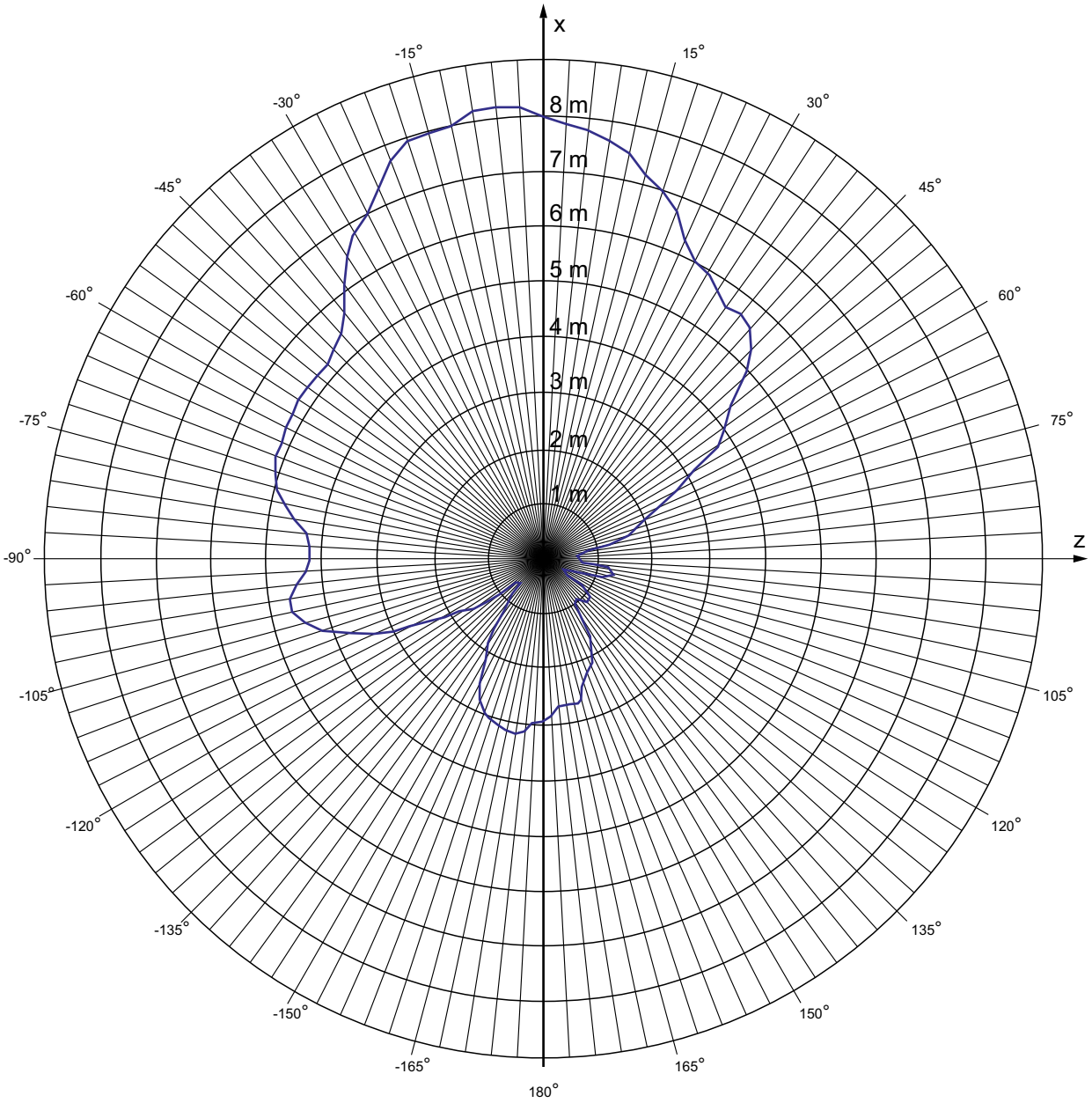
The figure below shows the coordinate system applied to the HMI device.



The figure below shows the range of the transmitter based on angle.



The figure below shows the HMI device range depending on the angular displacement to the main count direction in the z direction:



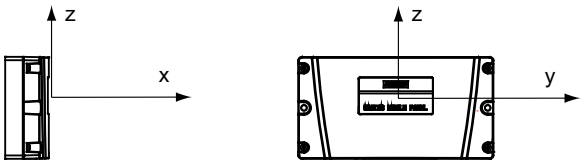
13.4.2 Radiation characteristic of the transponder

The radiation characteristics are in regards to the antennas for the transponder system.

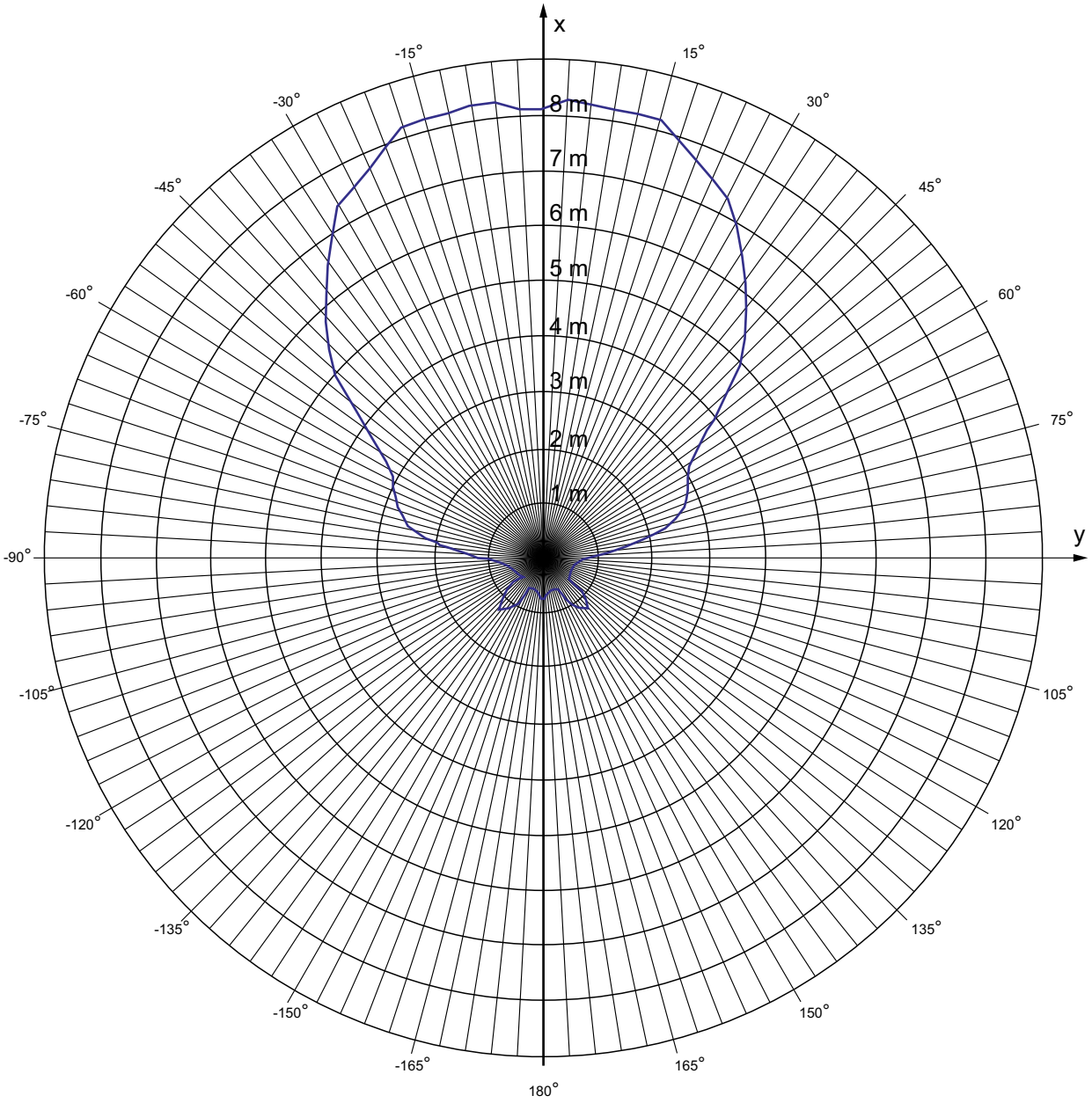
Antenna type	Dual port patch antenna
Polarization	Vertical and horizontal
Frequency band	2.4 to 2.483 GHz
Antenna gain in principle ray direction, max.	Port 1: 2,6 dBic
	Port 2: 2.7 dBic
Impedance	50 Ω
Full widths at half maximum, horizontal at 2.45 GHz	93°
Full widths at half maximum, vertical at 2.45 GHz	90°

Range of the transmitter based on angle

The following figure shows the coordinate system applied to the transponder.



The figure below shows the range of the transmitter based on angle.



The following figure shows the transponder range depending on the angular displacement to the main count direction in the z direction: