



External Antenna Measurement Results for the OpenScape DECT Base Station

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GC TO HD RF

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Overview

The goal of this measurement campaign was to confirm the data of the antenna manufacturer in a real environment connected to a DECT base station via a coaxial cable of a defined length.

It was found that the antenna diagrams were nearly identical and the measured gain matches quite well with the datasheets .

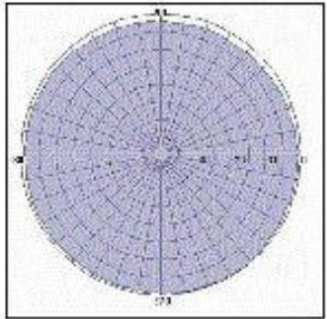
Therefore it can be assumed that by compensating the antenna gain with a minimum cable loss or additionally reducing the transmit output power by a few dB (if low loss cable is used) the radiated transmit power will stay below the national regulatory requirements (26 dBm EIRP/24dBm ERP).

Basic Configuration

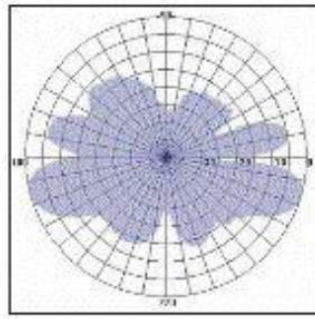


Datasheet:

Antenna diagram



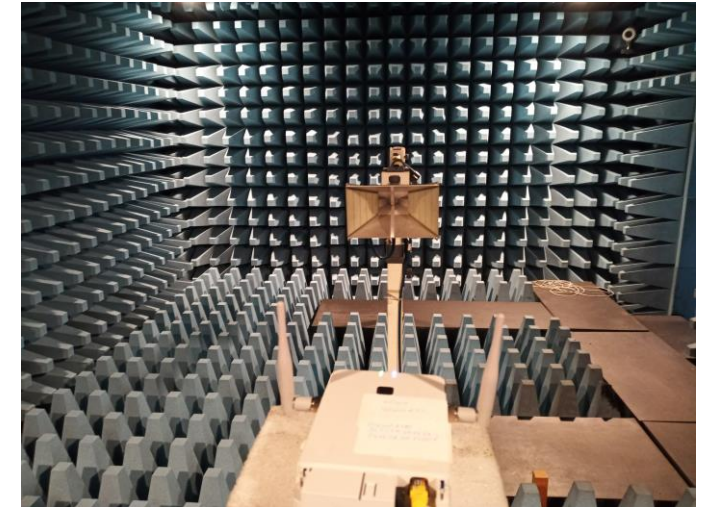
Horizontal Direction



Vertical Direction

Electrical characteristic

Frequency range (MHz)	1880 - 193
Input impedance (Ω)	50
V.S.W.R	≤ 1.5
Gain (dBi)	3
Protect raiden	Direct current
Polarisation type	Vertical
Max. input power (W)	50
Connector:	TNC



Measured values:

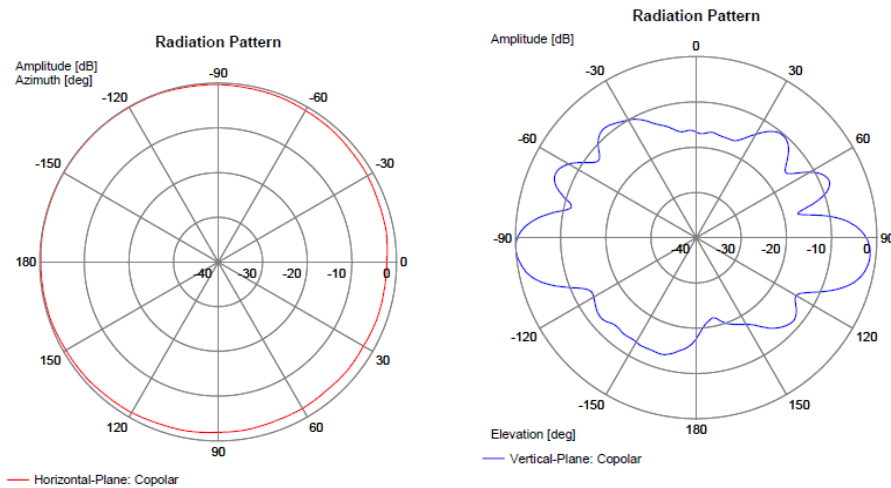
Transmit output power @ TNC-port:	22,4 dBm
Radiated Power:	25,5 dBm EIRP
Antenna Gain:	3,1 dBi

Omni-L DECT Antenna



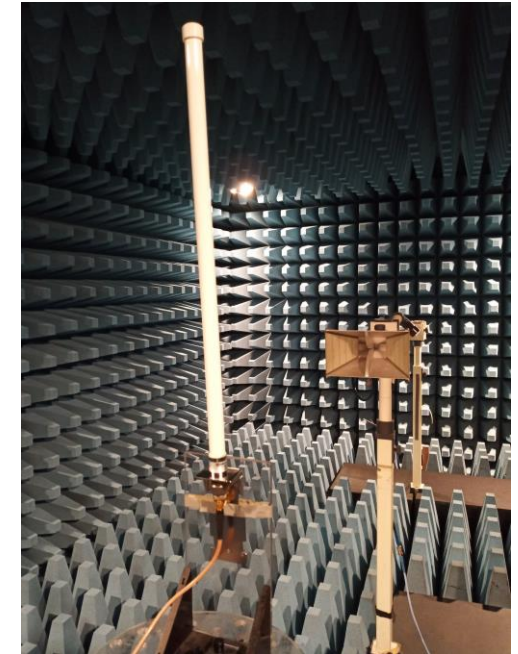
Datasheet:

Antenna diagram



Electrical characteristic

Frequency range (MHz)	1880 - 1930
Input impedance (Ω)	50
V.S.W.R	≤ 1.5
Gain (dBi)	7
Polarisation type	Vertical
Max. input power (W)	25
DC grounded	yes
Type:	1319.17.0121
Connector	N-jack female



Measured values:

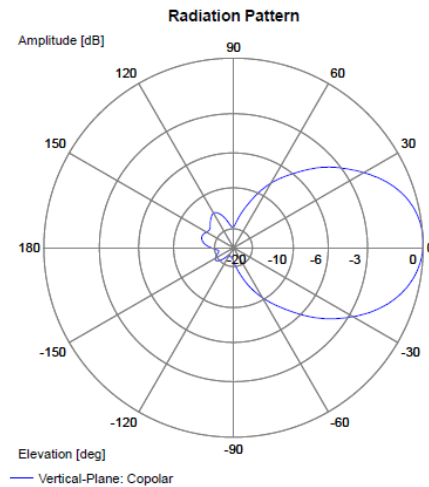
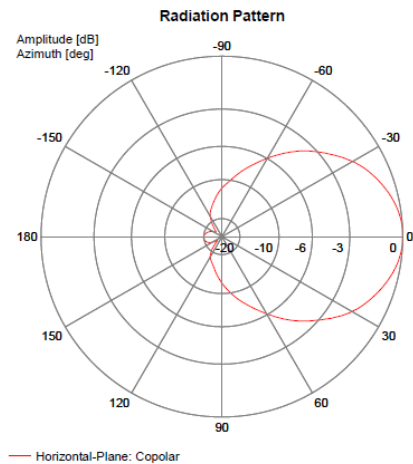
Transmit output power @ TNC-port:	22,4 dBm
Radiated Power:	29,3 dBm EIRP
Antenna Gain:	6,9 dBi

Directional Planar Antenna (outdoor)



Datasheet:

Antenna diagram



Electrical characteristic

Frequency range (MHz)	1755 - 1910
Input impedance (Ω)	50
V.S.W.R	≤ 1.5
3dB beamwidth (v) ($^\circ$)	70
Gain (dBi)	8
Polarisation type	Vertical
Max. input power (W)	50
DC grounded	no
Type:	1318.17.0015
Connector	N-jack female



Measured values:

Transmit output power @ TNC-port:

22,4 dBm

Radiated Power:

29,7 dBm EIRP

Antenna Gain:

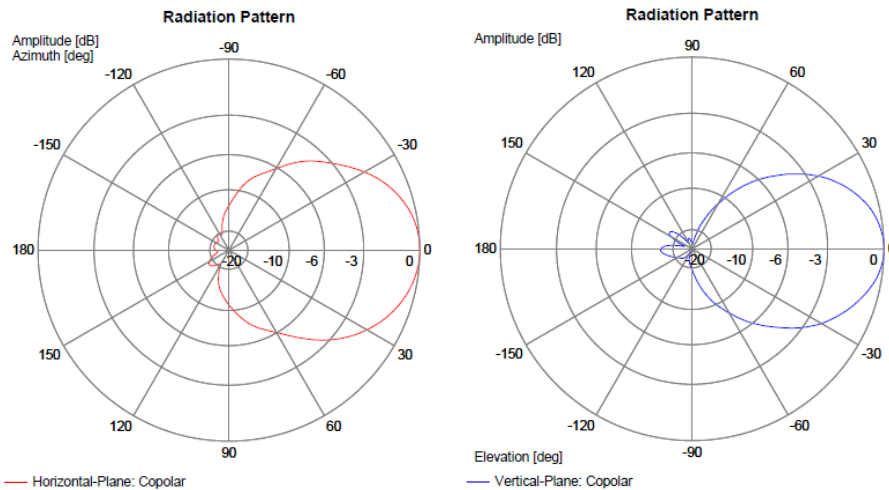
7,3 dBi

Directional Planar Antenna (indoor)



Datasheet:

Antenna diagram



Electrical characteristic

Frequency range (MHz)	1850 - 1990
Input impedance (Ω)	50
3dB beamwidth (v) ($^{\circ}$)	65
Gain (dBi)	8
Polarisation type	Vertical
Max. input power (W)	10
DC grounded	no
Type:	1318.17.0003
Connector	SMA-jack female

Measured values:

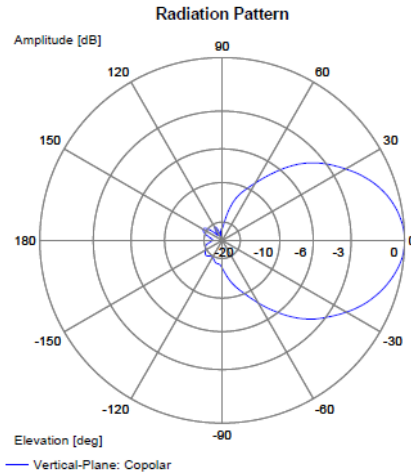
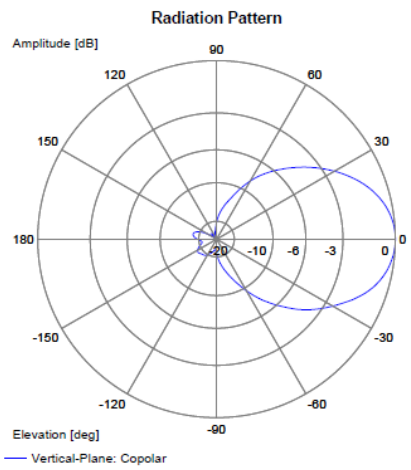
Transmit output power @ TNC-port:	22,4 dBm
Radiated Power:	29,9 dBm EIRP
Antenna Gain:	7,5 dBi

Directional Planar Antenna (dual, indoor)



Datasheet:

Antenna diagram



Auslenkung: links

rechts

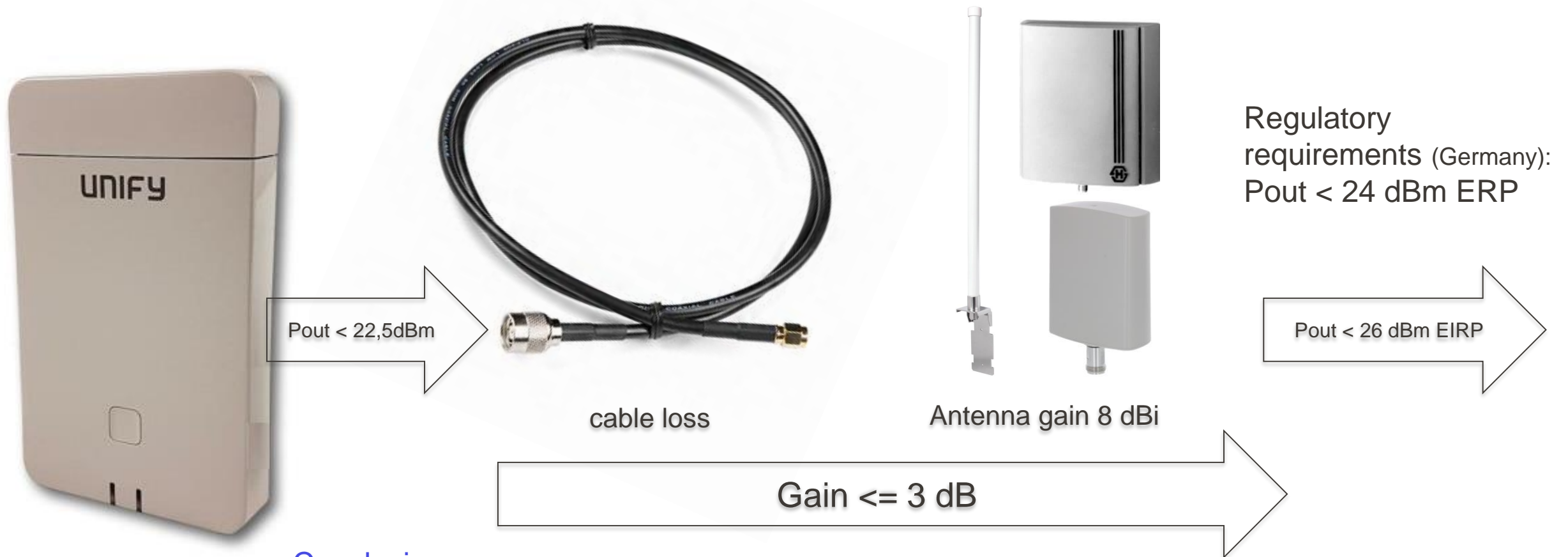
Electrical characteristic

Frequency range (MHz)	1880 - 1930
Input impedance (Ω)	50
3dB beamwidth (v) ($^\circ$)	75
Gain (dBi)	8
Polarisation ($^\circ$)	+/- 45
Max. input power (W)	10
DC grounded	no
Type:	1318.17.0027
Connector	2 x SMA-jack female

Measured values:

Transmit output power @ TNC-port:	22,4 dBm
Radiated Power:	29,4 dBm EIRP
Antenna Gain:	7,0 dBi

Required Power Reduction



Conclusion:

antenna gain - cable loss $\leq 3\text{ dB}$ or
antenna gain - cable loss - base power reduction $\leq 3\text{ dB}$