

Datasheet

CELLULAR(2G/3G/4G) / GNSS(GPS/GLONASS) Antenna

CGN 7026 SF S
Pt no.
920-641-xxx

- Combination antenna for positioning and data-services
- Terrestrial based transmission and satellite based positioning
- Designed for installation on vehicles in harsh environmental



Subject to alterations

Technical data (920-641-001)

GNSS

Frequency range	GPS: 1575,42 MHz $\pm$ 1,023 MHz, (L1-band) GLONASS: 1598,1 - 1605,4 MHz
Center frequency	1590,0 $\pm$ 5 MHz
Antenna gain	typ. 2 dBic (Gain of passive antenna element)
Polarization	right handed circular (RHCP)
Axialratio	min: 2 dB (In zenith at center frequency)
Power supply	3,0 V - 5,5 V
Current consumption	typ. 35 mA $\pm$ 3 mA
LNA gain	typ. 21 dB $\pm$ 2 dB (Input and output 50 Ω)
Noise figure	$\leq$ 3,0 dB, typ. 2,8 dB (Input and output 50 Ω)
P1dB output	$\geq$ 11,5 dBm (F = 1575 MHz)
IP3 input	$>$ 2 dBm (Test tones: F ₁ : 1590 MHz / -30 dBm F ₂ : 1591 MHz / -30 dBm)
LNA stopband rejection 1590MHz $\pm$ 60MHz	$>$ 60 dBc (Input to output of LNA)
Isolation GNSS/ Cellular @ GNSS connector in the GNSS frequency ranges)	$>$ 20 dB(S ₂₁ of active antenna from Cellular to GNSS
Isolation GNSS / Cellular @ 2G/3G/4G Frequencies connector in the Cellular frequency ranges)	$>$ 50 dB(S ₂₁ of active antenna from Cellular to GNSS
Output impedance	50 Ω
Output VSWR	$\leq$ 1,5

CELLULAR

Frequency range	LTE (700 MHz): 698 - 862 MHz GSM 900: 880 - 960 MHz GSM 1800: 1710 - 1880 MHz UMTS: 1920 - 2170 MHz LTE: 2500 - 2690 MHz
Gain	LTE (700MHz): 0 dBi GSM 900: +3 dBi GSM 1800: +3 dBi UMTS: +3 dBi LTE (2500MHz): 0 dBi
Polarization	Linear vertical

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Impedance	50 Ohm
Return loss	LTE (700 MHz): > 3 dB GSM 900: > 10 dB GSM 1800: > 10 dB UMTS: > 10 dB LTE (2500MHz): > 5 dB
Input power	2 W
Diagnosis Resistor	10 kOhm

Mechanical

Round mounting hole diameter / mm	typ. 20 max. 20,5
Thickness holder mm	min. 0,5 max. 6,0
Radius of curvature / mm	min. 1500 max. planar
Free space under mounting place / mm	min. h=25 x Ø35
Nut	PA6.6 GF30 white
Thread bolt diameter	18 x 1.5 mm
Tightening torque / Nm	min. 6 max. 7
Connector pulling force	typ. > 80 N
Cable type	RG 174
Cable pulling force	typ. > 80 N
Weight	ca. 296 g
Dimensions	95 mm x 57 mm x 69 mm

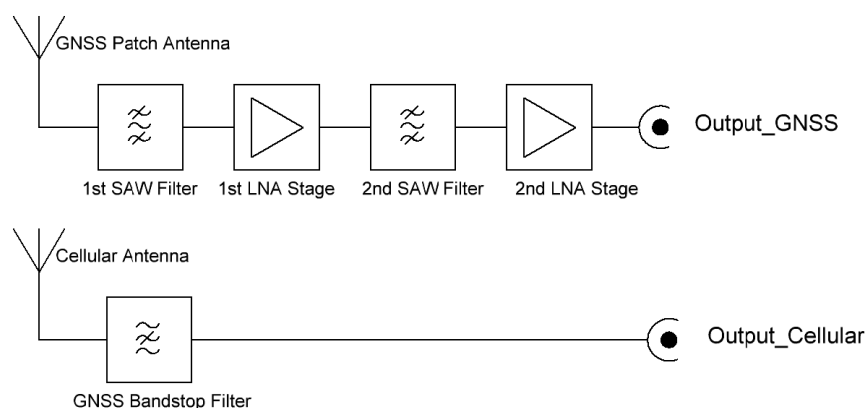
Environmental

Operation and storage temperature range	min. -40°C max. 80°C
Humidity	Non-condensing 55 °C 95% RH
Protection levels	For all antenna parts placed outside of the vehicle: IP 6K9K (ISO 20653)
Scope of supply	For the cable inlet of the antenna: IP67 Antenna with hexagonal nut

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Block Diagram



Installation

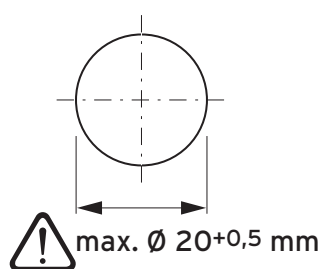


Fig. 1

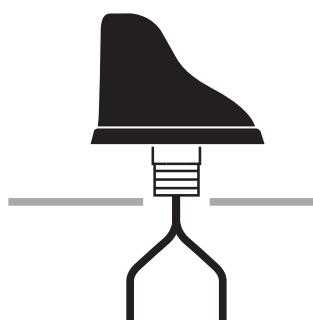


Fig. 2

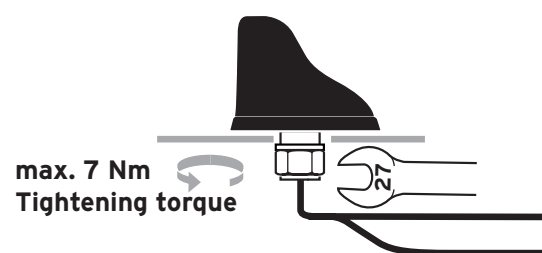


Fig. 3

Ordering

Part no.	Packaging	Service	Cable length	Connector
920-641-101	1 pc in polybag	CELL	200 mm	FAKRAm, Code D
	25 pcs. carton	GNSS	150 mm	FAKRAm, Code C

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Antenna diagrams

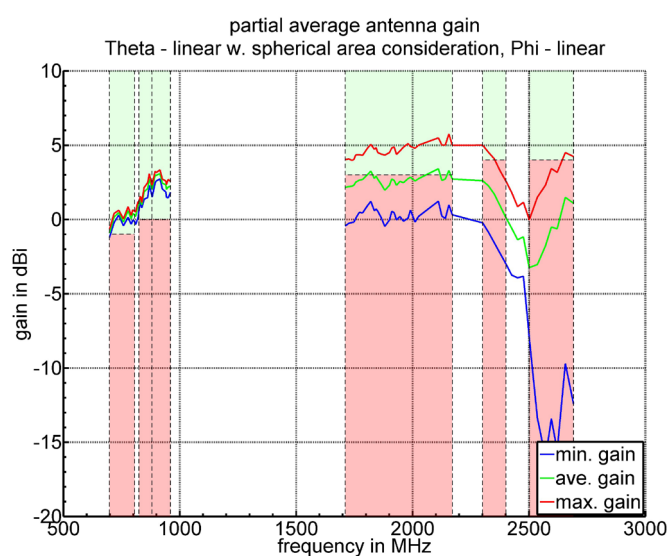
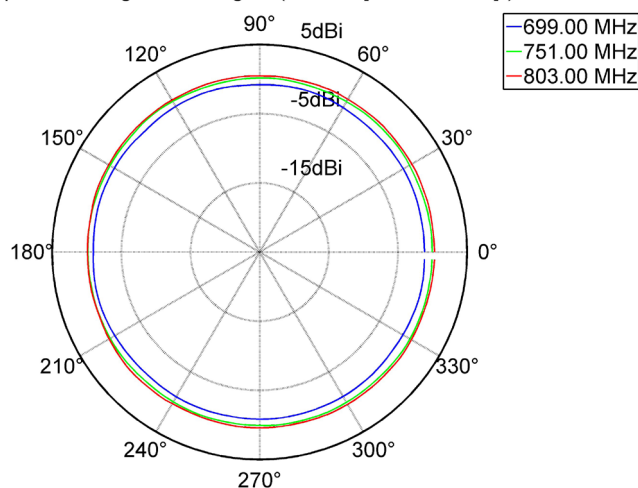


Fig. 1 4G, Gain over frequency, ANTENNA GNSS/GSM

radiation pattern of frequency band [699.0 - 803.0] MHz
partial average antenna gain (Theta = [70.00 - 90.00]°)



radiation pattern of frequency band [824.0 - 960.0] MHz
partial average antenna gain (Theta = [70.00 - 90.00]°)

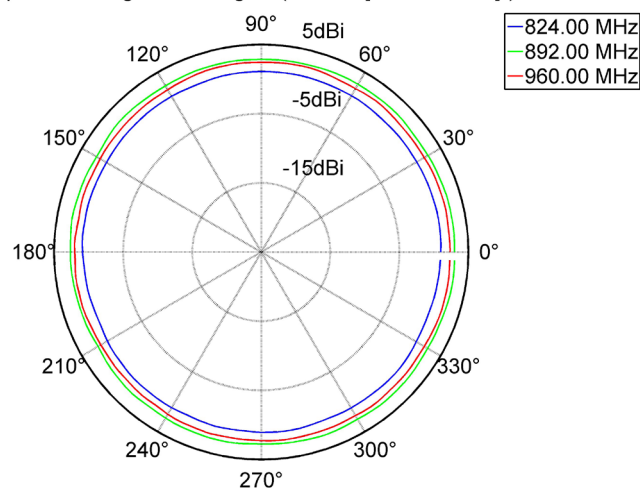
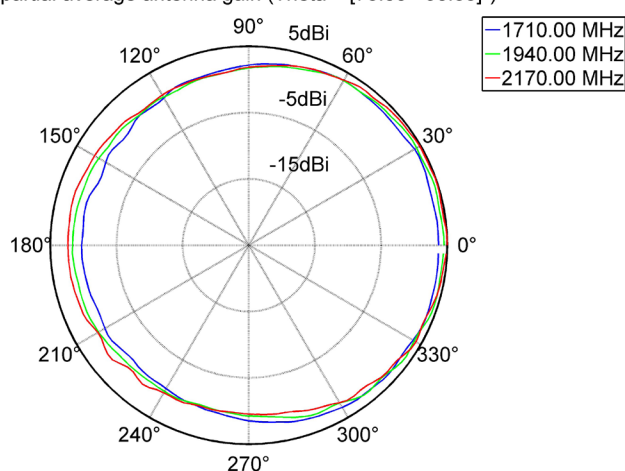


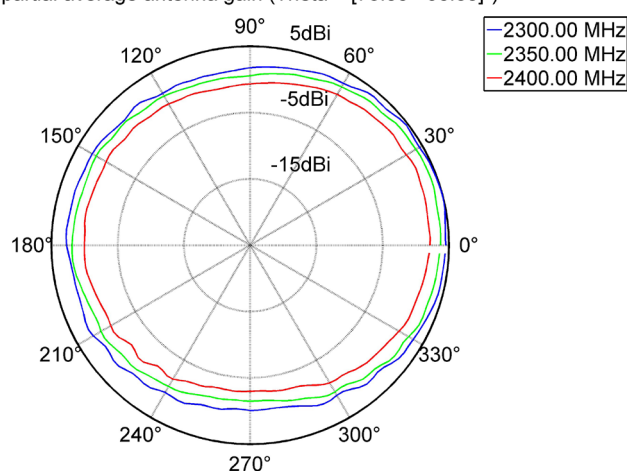
Fig. 2 4G, Gain over phi, ANTENNA GNSS/GSM

Antenna diagrams

radiation pattern of frequency band [1710.0 - 2170.0] MHz
partial average antenna gain (Theta = [70.00 - 90.00]°)



radiation pattern of frequency band [2300.0 - 2400.0] MHz
partial average antenna gain (Theta = [70.00 - 90.00]°)



radiation pattern of frequency band [2500.0 - 2690.0] MHz
partial average antenna gain (Theta = [70.00 - 90.00]°)

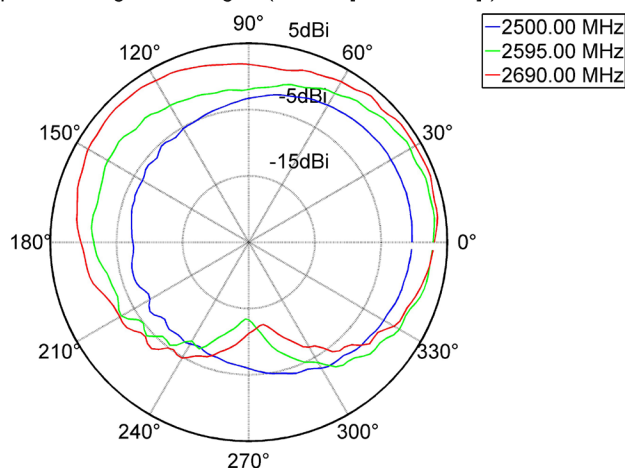


Fig. 3 4G, Gain over phi, ANTENNA GNSS/GSM

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Antenna diagrams

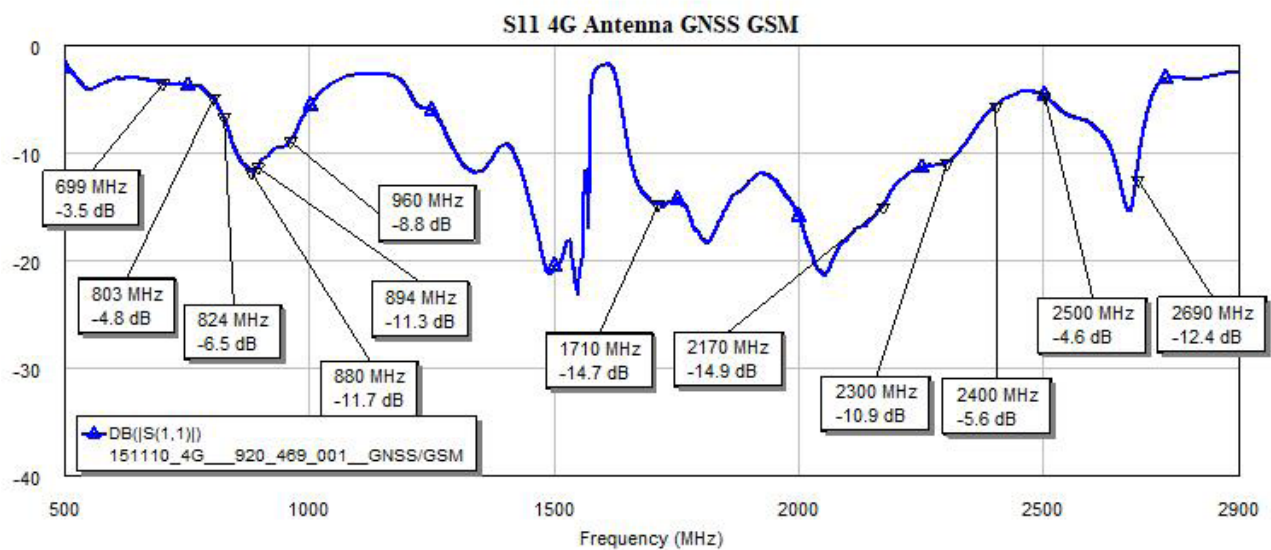


Fig. 4 4G, S11, ANTENNA GNSS/GSM