

# *navXperience*

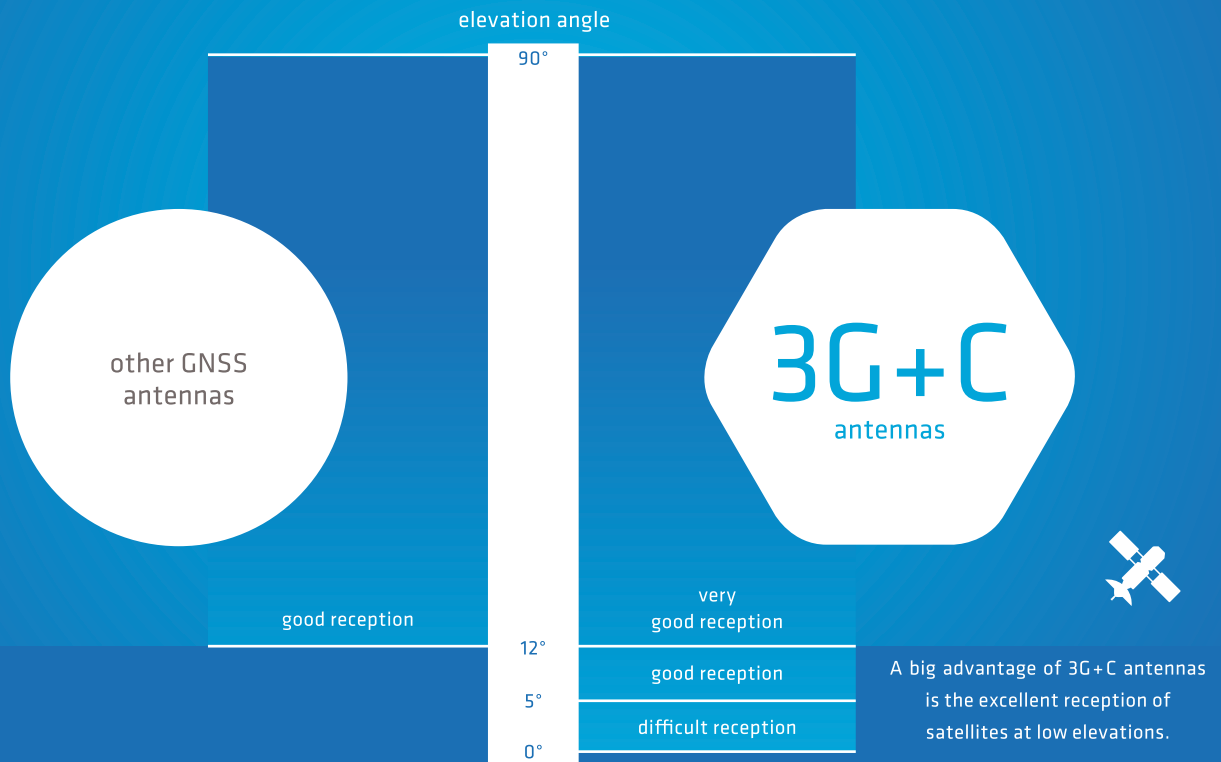
next-generation GNSS antennas

INNOVATIVE ENGINEERING - MADE IN GERMANY

control | maritime | defense | mobile | reference

3G+C SERIES

# The 3G+C products in comparison



## Enables precise positioning for all GNSS applications

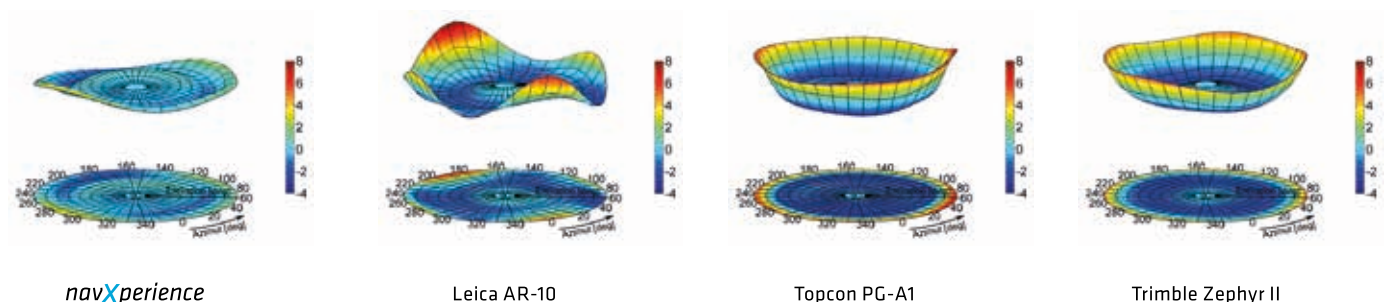
One of the antenna's numerous advantages is excellent reception of satellites at low elevations, i.e. weak GNSS signals. This is an outstanding property, because the reception characteristics for these satellites are generally poor due to a longer path through the atmosphere.

The 3G+C antenna enables weak signal tracking of GNSS satellites to the horizon (0° elevation) with sufficient quality, while other high-precision antennas typically lose track at 7° elevation or are providing such poor signal quality that the GNSS receiver cannot use it.

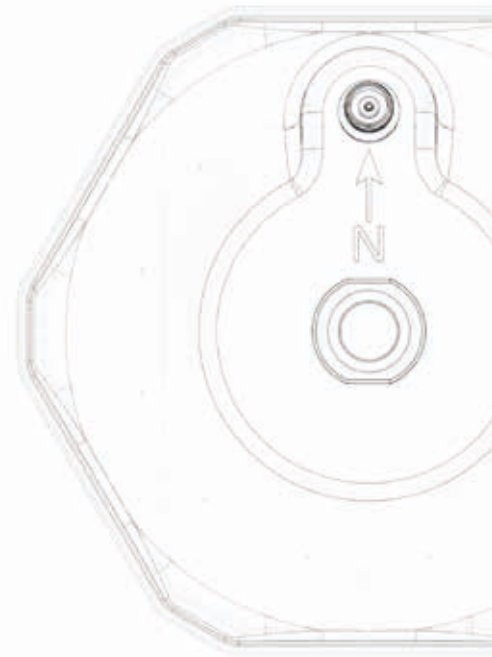
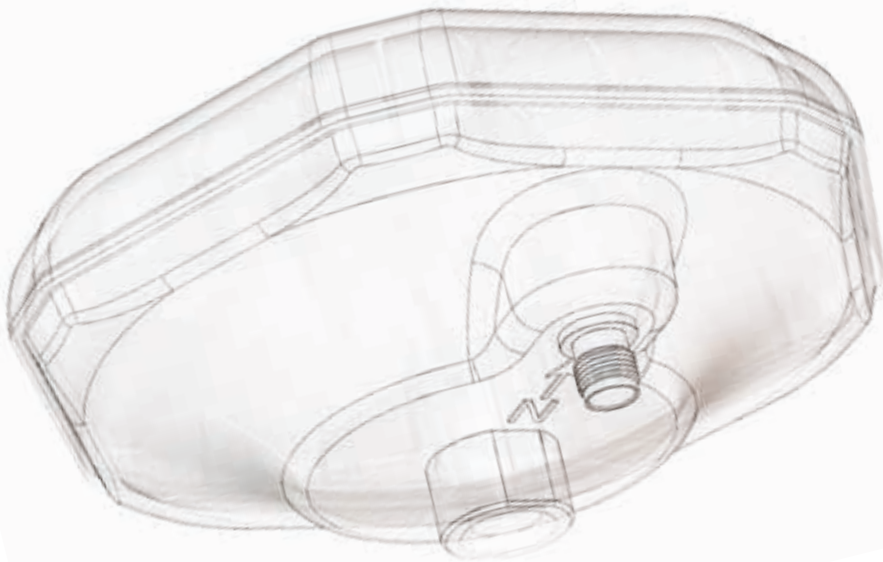
This unique attribute of the 3G+C antenna results in improved productivity for the user, because it will enable more satellites being tracked and faster positioning with better signal quality (C/No).

In applications experiencing roll and pitch motion, such as machine control or on-board of ships, low elevation satellite tracking with good signal quality allows the GNSS receiver to determine its position more accurately and with less noise.

## phase center variation



The world's only antenna where the housing is laser-welded.

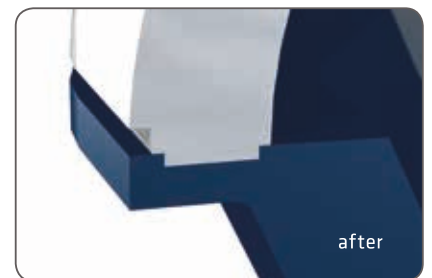


### Neither air, dust or water can penetrate inside the antenna

The production of the 3G+C series meets the highest quality standards with respect to processes and materials used. The housing material is designed to be extremely durable, UV resistant and color true. Even after years of use it will appear like new. The upper and lower housing are laser-welded which is unique among all GNSS antenna manufacturers. Neither air, dust, or water can penetrate its interior, even at pressure differences of 2.5 bar (36 psi).



before



after

This is also true for the standard TNC connector, because it is integral to the case and was specifically designed for this housing. Thus, the 3G+C series complies with IP69k and all tests of MIL-STD 810g.

# Our precise GNSS antennas

## 3G+C SERIES



### 3G+C mobile

Typical applications for this mobile antenna are surveying, installations on vehicles and wherever only short cable lengths (typically under 10m) are required.

Like all 3G+C series antennas, it receives all frequencies from all satellite navigation systems.

The 3G+C mobile is the standard antenna for all dynamic or mobile, high precision, GNSS applications.

Order number: navX-007

### 3G+C maritime

The 3G+C maritime is designed for use on all types of maritime vehicles. A gain of 42 dB enables the customer to use (low loss) RF cables with a length of up to 60 m, and still have excellent quality RF signals at the GNSS receiver. Neither storms, cold, heat or salt water will have an effect on this antenna.

Many years of testing under the most extreme conditions have proven that this antenna will work flawlessly for more than a decade.

Order number: navX-027

### 3G+C reference

The 3G+C reference is designed for use in network applications, i.e. to be installed at fixed sites for many years. Its gain of 48 dB enables using (low loss) RF cables with a length of up to 100 m without needing additional amplification.

When selecting the electronic components, we especially paid attention to durability, which allows us to provide a 5-year warranty when it is used as a reference station antenna.

Order number: navX-037



### 3G+C control

This antenna is designed and built for machine control applications. Due to its design, using all surface-mounted parts, it is virtually insensitive to vibration and strong acceleration.

The housing is 100% watertight and dust-proof. This antenna can be used in the toughest environments and on the heaviest machines.

Order number: navX-047

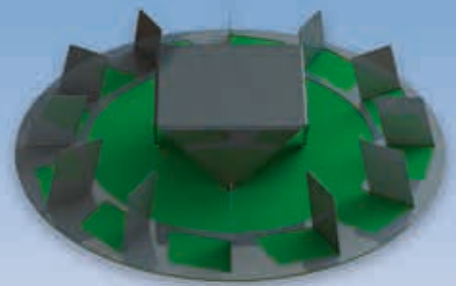


### 3G+C defense

The 3G+C defense is built for military applications. This antenna has successfully passed all pertinent requirements of MIL-STD 810g.

The use of expensive RF filters, with sharp roll-offs, as part of the LNA, makes this antenna less sensitive to jamming and interference.

Order number: navX-077



### 3G+C OEM mobile

We provide an OEM version of our 3G+C series, i.e. the antenna element without its housing.

It includes an LNA (low-noise amplifier) with a gain of 29dB. This antenna is offered to customers who want to build their own GNSS system.

Order number: navX-003

## The Bumper

With the bumper the antenna withstands a drop from a height of 10 m on concrete without sustaining damage.



### Bumper black

Order number: navX-050



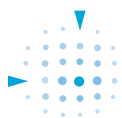
### Bumper green

Order number: navX-051

# Technical Data

# 3G+C SERIES

	<b>defense &amp; mobile</b>	<b>control &amp; maritime</b>	<b>reference</b>
Bandwidth	1150 - 1300 MHz 1525 - 1610 MHz	1525 - 1610 MHz 1150 - 1300 MHz	1150 - 1300 MHz 1525 - 1610 MHz
Galileo Frequences	all	all	all
GPS Frequences	all	all	all
GLONASS Frequences	all	all	all
BeiDou Frequences	all	all	all
L-Band Correction Data Signals	all	all	all
Active Gain	29 dB	42 dB	48 dB
Passive Gain	3,8 dbic	4,2 dbic	4,5 dbic
Polarisation	RHCP	RHCP	RHCP
VSWR (max)	1,5:1	1,5:1	1,5:1
VRV	> 13 dB	> 13 dB	> 13 dB
XPD	> 15 dB	> 15 dB	> 15 dB
10 dB Beamwidth	160° to 180°	170° to 180°	170° to 180°
Axial Ratio	3 dB (max)	3 dB (max)	3 dB (max)
LNA Noise factor	< 2 dB	< 2 dB	< 2 dB
Power	3,3 - 20 Volt	3,3 - 20 Volt	3,3 - 20 Volt
Current draw	< 50 mA	< 50 mA	< 50 mA
Operating temperature	-45° to 85° C	-45° to 85° C	-45° to 85° C
Connector type	TNC	TNC	TNC
Dimensions (mm)	Durchmesser: 172 Höhe: 72	Durchmesser: 172 Höhe: 72	Durchmesser: 172 Höhe: 121
Weight	380 g	380 g	385 g
100% Water- and Dustproof	IP69K MIL-STD 810g	IP69K MIL-STD 810g	IP69K MIL-STD 810g



# OSR

# Open Source Receiver

tested for  
**space**

## Triple frequency GNSS Receiver

receives all GNSS frequencies

The front-end receives all GNSS signals as well as all L-band correction data signals. The first version of the receiver will be delivered with GPS / GLONASS L1 and L2.

## navXweb Interface

for complete control

The state-of-the-art interface of navXweb allows the user, either via smartphone or PC, direct access to all receiver settings and functions. The modern HTML 5 user interface adapts to the screen size and allows the display of graphical Skyplots.

## LINUX OS

enables end-user software developments

By integrating the open source Linux operating system, we enable end-users and developers to install their own software and existing applications on the GNSS board.

## OSRP Open Source Receiver Protocol

provides open software interface

By OSRP allows end-users and developers access to all GNSS raw data, if required. At the same time, they can also integrate and synchronize other sensors via this protocol.

## LifeTime Updates

guaranteed free lifetime updates

We offer free software updates through our website over the entire life of the product! This feature will keep your GNSS receiver always up to date.

## UMP Coaxial

The newly developed UMP coaxial radial is much better suited to the environment of our antennas than the usual MCX or MMCX connector. The advantages include its lower height, better electrical connection, and its robustness, which makes it insensitive to vibrations and high acceleration forces.

This connection is designed for safety-critical applications and is already used in the German automobile industry.



## Technical Data

Galileo Signal	All
GPS Signal	All
GLONASS Signal	All
BeiDou Signal	All
L-Band Correction Data Signals	All
Accuracy Standalone	Horizontal: 1,2 m Vertical: 1,9 m
Accuracy SBAS	Horizontal: 0,6 m Vertical: 0,8 m
Accuracy Velocity	Horizontal: 0,04 km/h Vertical: 0,06 km/h
Accuracy Time Measurement	12 nsec
Maximal Data Update Rate	50 Hz
Dimensions	Length: 60 mm Width: 50 mm Height: 10 mm
Weight	50 g
Power	3,3 to 5,5 Volt
Current Draw	<2 Watt
Operation Temperature	-40° to 85°
Connector Type	UMP



#### **Contact**

navXperience GmbH  
Querweg 20  
13591 Berlin  
Telephone: + 49 30 375 896 7-0  
Telefax: + 49 30 375 896 7-1  
info@navXperience.com  
www.navXperience.com

**Distributor information**