

NX04/10 Antenna

User Guide

MN73-xxx Rev A

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Before returning any equipment to GSSI, a Return Material Authorization (RMA) number must be obtained. Please call the GSSI Customer Service Manager who will assign an RMA number. Be sure to have the serial number of the unit available.

Regulatory Information

The use of GSSI antennas is governed by different regulatory agencies around the world. Specific antenna models must be certified for legal operation in your country. Please read and understand the following regulatory passages that pertain to your antenna. A listing of certified antennas by region can be found at www.geophysical.com/regulatoryinformation.htm.

Notice

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development [ISED] Canada's license-exempt RSS(s). Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

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Geophysical Survey Systems, Inc, ci-après dénommé GSSI, garantit à l'acheteur original de ce produit que, pendant une période de 24 mois à compter de la date de livraison, ce dernier sera exempt de défauts de matériaux et de fabrication. EXCEPTÉ POUR CETTE GARANTIE LIMITÉE, GSSI REJETTE TOUTE GARANTIE, EXPLICITE OU IMPLICITE, Y COMPRIS TOUTE GARANTIE DE QUALITÉ

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Avant de retourner tout équipement à GSSI, une autorisation de retour matériel (RMA) doit être obtenue. Appelez s'il vous plaît le service clientèle GSSI qui attribuera un numéro de RMA. Soyez sûr d'avoir le numéro de série de l'unité.

Informations réglementaires

L'utilisation des antennes GSSI est régie par différents organismes de réglementation à travers le monde. Certains modèles d'antenne spécifiques doivent être certifiés pour un fonctionnement légal dans votre pays. Merci de lire et comprendre les passages suivants de réglementation qui s'appliquent à votre antenne. Une liste des antennes certifiées par région peut être trouvée sur www.geophysical.com/regulatoryinformation.htm.

Avis

Cet appareil contient des émetteurs/récepteurs exempts de licence qui sont conformes aux Spécifications sur les normes radioélectriques exemptes de licence d'Innovation, Sciences et Développement économique Canada. Son fonctionnement est soumis aux deux conditions suivantes : (1) cet appareil ne doit pas causer d'interférences nuisibles, et (2) cet appareil doit accepter toute interférence, y compris les interférences susceptibles de provoquer un fonctionnement indésirable de l'appareil.

Canadian Emissions Requirements

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada

GPR UWB Compliance Notice

The FCC has granted Geophysical Survey Systems, Inc a waiver of sections 15.503(d), 15.31(c) and 15.521(d) rules, certifying the NX04/10 antenna for GPR UWB transmission. This action was adopted and released by the Chief of the Office of Engineering and Technology (OET) on 31 July 2023 and is described in waiver DA 23-650. This waiver is subject to the following conditions:

1. The GSSI GPR device was certified by an authorized Telecommunications Certification Body. A copy of Waiver DA 23-650 was submitted with the application for certification.
2. The NX04/10 antenna operates with stepped frequency CW modulation in 1-40 MHz steps between 30-6000 MHz.
3. The NX04/10 antenna dwell time on any one frequency does not exceed 2 microseconds.

4. The dwell time during any NX04/10 antenna frequency step does not exceed 0.04 percent of the device's minimum scan/cycle rate.
5. For certification testing, the measurement of emissions from the NX04/10 antenna was conducted with the stepping function active for all possible frequency step sizes.
6. The NX04/10 antenna complies with all other technical and operational requirements applicable to UWB GPR devices under Part 15, Subpart F of the Commission's rules.
7. Operation of the NX04/10 antenna is limited to GPRs and wall imaging systems operated for purposes associated with law enforcement, fire fighting, emergency rescue, scientific research, commercial mining, or construction. Parties operating this equipment must be eligible for licensing under the provisions of part 90 of § 15.509.
8. Sales of the GSSI GPR device authorized under this waiver are subject to an annual limit of 5,000 devices for each of the first two years and 10,000 devices each year thereafter.

The NX04/10 antenna is not a toy. The NX04/10 antenna cannot be used on ships or aircraft.

FCC Class A Compliance

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment or residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the introduction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

Coordination Requirements

- (a) UWB imaging systems require coordination through the FCC before the equipment may be used. The operator shall comply with any constraints on equipment usage resulting from this coordination.
- (b) The users of UWB imaging devices shall supply detailed operational areas to the FCC Office of Engineering and Technology who shall coordinate this information with the Federal Government through the National Telecommunications and Information Administration. The information provided by the UWB operator shall include the name, address and other pertinent contact information of the user, the desired geographic area of operation, and the FCC ID number and other nomenclature of the UWB device. This material shall be submitted to the following address:

Frequency Coordination Branch, OET Federal Communications Commission, 445 12th Street, SW
Washington, D.C. 20554 ATTN: UWB Coordination

- (d) Users of authorized, coordinated UWB systems may transfer them to other qualified users and to different locations upon coordination of change of ownership or location to the FCC and coordination with existing authorized operations.
- (e) The NTIA/FCC coordination report shall include any needed constraints that apply to day-to-day operations. Such constraints could specify prohibited areas of operations or areas located near authorized radio stations for which additional coordination is required before operation of the UWB equipment. If additional local coordination is required, a local coordination contact will be provided.

Notice: Use of this device as a through-wall imaging system is prohibited by FCC regulations.

Ground Penetrating Radar Coordination Notice and Equipment Registration (for U.S. Customers only)

Note: This form is only for **domestic United States** users. The Federal Communications Commission (FCC) requires that all users of GPR who purchased antennas after 15 July 2002 register their equipment and areas of operation. It is required that you fill out this form and fax or mail to the FCC.

Failure to do this is a violation of Federal law.

1. **Date:**
2. **Company Name:**
3. **Company Address:**
4. **Contact Information [Name and Phone Number]:**
5. **Area of Operation [State(s)]:**
6. **Equipment Identification:**

Brand Name: Geophysical Survey Systems, Inc.

Antenna Model: List all NX antennas being registered.

Check Boxes for Included Models	NX Antenna Model	Serial Number	Center Frequency (MHz)	FCC ID
☐	NX04/10		350/1000	QF7NX0410
☐	Flex NX		2500	QF7FLEXNX
☐	Flex LT		2500	QF7NXLT
☐	NX25		2500	QF7NX25
☐	NX15		1500	QF7NX15

7. Receipt Date of Equipment:

Fax this form to the FCC at: 202-418-1944 or mail to:

Frequency Coordination Branch, OET Federal Communications Commission, 445 12th Street, SW
Washington, D.C. 20554 ATTN: UWB Coordination

Do not send this information to GSSI.

Introduction

Thank you for purchasing NX04/10, the newest antenna in our industry-leading Powered by Nexus portfolio. Along with pertinent regulatory information and guidelines, this manual provides antenna specifications, a list of included and optional accessories, and an overview of antenna hardware features and antenna setup.

Our promise to you is to provide comprehensive training, unrivaled customer support and world-class expertise. That's why the NX04/10 antenna includes our industry-leading two-year warranty, complimentary training when purchased as a complete Compass NX system, and technical support access. For more information, visit us at www.geophysical.com.



Our team of dedicated technical trainers is ready to work with users of all experience levels, and GSSI Academy classes are offered on an annual schedule. Check out the GSSI Academy offerings at www.geophysical.com/gssi-academy or scan the accompanying QR code with your smartphone.

What's in the Box

The standard NX04/10 antenna ships with the following:



NX04/10 Antenna



NX04/10 4-Cell Li-Ion Batteries (2x)



NX04/10 Battery Charger and AC Adapter

Optional Accessories

The following accessories are available for NX04/10 and are sold separately:

NX04/10 Sled



Antenna Specifications and Features

Feature	Description
Unit Type	Ultra-Wideband Antenna
Measuring Type	Ground Penetrating Radar (GPR)
Antenna Technology	Stepped Frequency Continuous Wave [SFCW]
Communication	Wi-Fi to mobile device
External Features	Power button; 2x RS232 serial port; USB C port, Encoder port;
Operational Modes	Single or dual channel display
Trigger Modes	Encoder-based Distance; Time-based (continuous)
Samples per Scan	1024
Scans per Second	140
Time Range	Channel 1 (1000MHz): 100ns; Channel 2 (350MHz): 200ns
Max Depth	1000MHz antenna: 0-500cm; 350MHz antenna: 0-1000cm
Time Zero	Fixed; not field adjustable
Internal GPS	No
GPS Connections	To antenna: RS232 serial; To mobile device controller: Bluetooth
Display	No integrated display; External mobile device required
Storage	No user-accessible onboard storage
Operating Temperature	-20°C to +50°C (-4°F to +122°F)
Storage Temperature	-40°C to +60°C (-40°F to +140°F)
IP Rating	IP65 (fully sealed against dust and low-pressure omnidirectional water)
Battery Access	User-removable
Battery Performance	Up to 4 hours per battery (two rechargeable 4-cell batteries included)
Dimensions	47cm x 40cm x 23cm (18.5in x 15.75in x 9in)
Weight	6.8kg (15lbs)
Hardware Warranty	2 years from date of purchase

NX04/10 External Features



Antenna Setup and Use

In adherence with domestic and international shipping restrictions the two included 4-cell batteries were shipped to you at <30% charge level. Begin by charging the batteries using the supplied battery charger. The charger's LED lights will flash while charging; the lights will be solid when charging is complete. Battery charging could require 2 to 4 hours depending on the charge status.

Insert a fully charged battery into the battery compartment and press the Power On/Off button. The LED state will transition to a solid color when the antenna is ready for operation. NX04/10 will then broadcast a Wi-Fi SSID using the antenna model and serial number, such as NX0410_000141. To determine your antenna model and serial number please refer to the decal located on the top of the antenna.

To interact with the NX04/10 antenna you must install the GSSI NX Control app on an Android or iOS mobile device. Before launching the NX Control App, connect to the NX04/10 Wi-Fi network and enter ***geophysical*** when prompted for a password. For more information please refer to the NX Control app documentation.



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