

N9910X-827

FieldFox Digital Compass for Direction Finding

Introduction

Interference hunting often requires switching between antennas to cover different frequency bands. Integrating a standalone digital compass simplifies manual direction finding, independent of the antenna in use.

A digital compass is an electronic sensor that calculates heading (azimuth) relative to magnetic or true north. It is a critical component in Radio Frequency (RF) Direction-Finding (DF).

The Keysight N9910X-827 digital compass connects via USB to a Keysight FieldFox handheld analyzer (equipped with Option 366). This setup enables easy manual triangulation on a digital map based on the received signal power. With simple one-button operation to draw or erase bearing lines, it serves as an essential productivity tool for efficient interference hunting.



*: Dimensions are not to scale.

- Heading accuracy of ± 5 degrees
- 100 Hz maximum heading update rate
- Sensor fusion of 9-degree-of-freedom
- A general-purpose digital compass that supports DF solutions from Keysight or customers

Key Characteristics

N9910X-827

Item	Characteristics (in nominal)
Heading accuracy	±5°
Heading update rate	100 Hz maximum
Heading type	Absolute (Aligned to Magnetic North)
Heading output format	Quaternion
Sensor type	Micro-Electro-Mechanical Systems (MEMS)
Degree of Freedom (DOF)	9 (3-axis magnetometer, 3-axis accelerometer, 3-axis gyroscope)
Reference frame	ENU (East/North/Up)
Data interface	USB Type-C
Input voltage	+5 V (supplied via the USB interface)
Maximum input current	48 mA
Calibration method	Dynamic calibration
Control buttons	Dual buttons: right for draw/erase; left for saving calibration (long press)
Dimension (L x W x H)	95 x 52 x 29 mm (3.74 × 2.05 × 1.14 in)
Net weight	81 g (2.86 oz)

Regulatory Information

EMC:

Complies with the essential requirements of the European EMC Directive and the UK Electromagnetic Compatibility Regulations 2016 as well as current editions of the following standards (dates and editions are cited in the Declaration of Conformity):

- IEC/EN 61326-1
- CISPR Pub 11, Group 1, class A

Caution: This equipment is not intended for use in residential environments and may not provide adequate protection to radio reception in such environments.

- AS/NZS CISPR 11
- CAN ICES/NMB-001(A)

This ISM device complies with Canadian ICES-001.

Cet appareil ISM est conforme à la norme NMB-001 du Canada.

NOTE: This is a sensitive measurement apparatus by design and will have some performance loss (inaccurate readings) when exposed to ambient magnetic phenomenon in the range of power line frequencies (50/60Hz), similar to those tested per IEC 61000-4-8.

South Korean Class A EMC declaration: This equipment has been conformity assessed for use in business environments. In a residential environment this equipment may cause radio interference.

사 용 자 안 내 문
이 기기는 업무용 환경에서 사용할 목적으로 적합성평가를 받은 기기로서 가정용 환경에서 사용하는 경우 전파간섭의 우려가 있습니다.

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<http://www.rra.go.kr/selform/Kst-WN261086>

SAFETY:

Complies with the following standard (dates and editions are cited in the Declaration of Conformity): IEC/EN 61010-1

To find a current Declaration of Conformity for a specific Keysight product, go to:

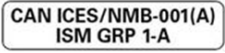
<http://www.keysight.com/go/conformity>

Environmental Information:

Samples of this product have been type tested in accordance with the Keysight Environmental Test Manual and verified to be robust against the environmental stresses of Storage, Transportation and End-use; those stresses include but are not limited to temperature, humidity, shock, vibration, altitude and power line conditions.

Test Methods are aligned with IEC 60068-2 and levels are similar to MIL-PRF-28800F Class 2.

Marking Table

Marking	Description
	The CE marking is a registered trademark of the European Community (if accompanied by a year, it is the year when the design was proven). It indicates that the product complies with all relevant directives.
	The UK conformity mark is a UK government owned mark. Products showing this mark comply with all applicable UK regulations.
	The Keysight email address is required by EU directives applicable to our product.
	The RCM mark is a registered trademark of the Australian Communications and Media Authority.
	This is a combined marking to indicate product compliance with the Industry. Canadian Interference-Causing Equipment Standard (ICES/NMB-001). This is also a symbol of an Industrial Scientific and Medical Group 1 Class A product (CISPR 11, Clause 5).
	The crossed out wheeled bin symbol indicates that separate collection for waste electric and electronic equipment (WEEE) is required, as obligated by the EU DIRECTIVE and other National legislation. Please refer to http://www.keysight.com/go/takeback to understand your Trade in options with Keysight in addition to product takeback instructions.
	China Restricted Substance Product Label. The EPUP (environmental protection use period) number in the center indicates the time period during which no hazardous or toxic substances or elements are expected to leak or deteriorate during normal use and generally reflects the expected useful life of the product.
	Universal recycling symbol. This symbol indicates compliance with the China standard GB 18455-2001 as required by the China RoHS regulations for paper/fiberboard packaging.
	South Korean Certification (KC) mark. It includes the marking's identifier code.

Required FieldFox Model/Option

FieldFox Models	Options Required
N991xD/N995xD	233 (Spectrum analyzer), 366 (interference finder, manual mode), 307 (GPS receiver)
N993xD/N996xD	366 (interference finder, manual mode), 307 (GPS receiver)
N991xC	233 (Spectrum analyzer), 366 (interference finder, manual mode), 307 (GPS receiver)
N993xC	366 (interference finder, manual mode), 307 (GPS receiver)
N991xB/N995xB	233 (Spectrum analyzer), 366 (interference finder, manual mode), 307 (GPS receiver)
N993xB/N996xB	366 (interference finder, manual mode), 307 (GPS receiver)
N991xA/N995xA (excluding N9912A)	233 (Spectrum analyzer), 366 (interference finder, manual mode), 307 (GPS receiver)
N993xA/N996xA	366 (interference finder, manual mode), 307 (GPS receiver)

Carry Precision with You

For further technical and configuration information about the Keysight FieldFox handheld analyzers, either the combination analyzers or signal analyzers, please check the documents listed below.

Related Literature	Publication Numbers
FieldFox Handheld Analyzers (D-Series), Configuration Guide	3125-1447.EN
FieldFox Handheld Analyzers (B- and C-Series), Configuration Guide	5992-3701EN
FieldFox Handheld Analyzers (A-Series), Configuration Guide	5990-9836EN

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