



# 85574A Handheld Direction Finding Antenna

20 MHz (optional 9 kHz) – 8.5 GHz

## Introduction

The Keysight 85574A serves as a portable wideband antenna, functioning across a frequency range from 20 MHz (optional 9 kHz) up to 8.5 GHz. Primarily designed for RF direction finding (DF) and transmitter hunting, it seamlessly integrates with the Keysight FieldFox handheld spectrum analyzer with required options to empower network maintainers to efficiently pinpoint and locate sources of interference.



# Product Description

The Keysight 85574A is a handheld wideband antenna for direction finding and transmitter hunting in the 20 MHz to 8.5 GHz band. It combines several antennas in a neat housing, and some integrated electronics to make it more effective when used in conjunction with signal analyzers. A single RF output is provided, with internal switching selecting the appropriate antenna, and choosing to connect or bypass the pre-amplifier. The amplifier is a low-noise wideband amplifier that enhances system sensitivity in active mode. In passive mode, the amplifier is bypassed so that the antenna can be used in the presence of strong signals. Working with the Keysight N99xxA/B/C FieldFox handheld analyzer equipped with options 366 – the interference finding (manual), and 307 – GPS receiver, along with an external GPS antenna (N9910X-825), it empowers network maintainers to efficiently pinpoint and locate sources of interference.

If the suspected interference occurs below 20 MHz, the optional frequency extension module, the 85574A-209, becomes especially useful, extending the range from 9 kHz to 20 MHz. This module consists of a 300 mm diameter loop antenna. Additionally, the optional 85574A-211 is a durable Hard carrycase designed specifically for the 85574A, providing convenient and secure portability. For more detailed information about the equipment models and available options mentioned, please consult the ordering information table on page 7.

## Mechanical Features

- Small, light and easily operated by a single person
- Robust construction
- Waterproof

## Electrical features

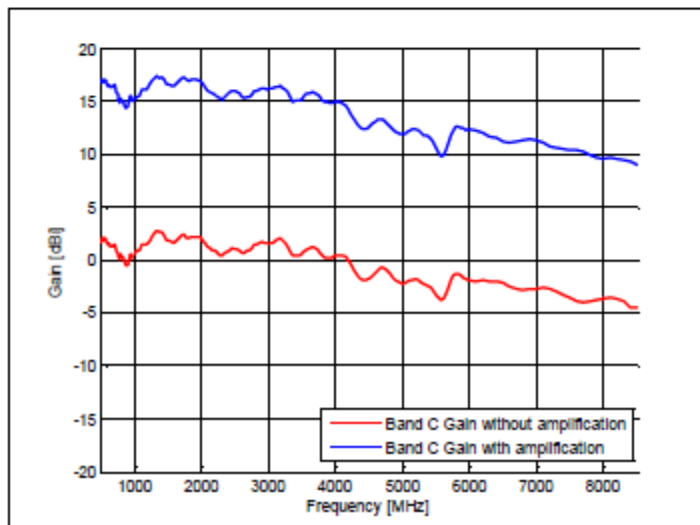
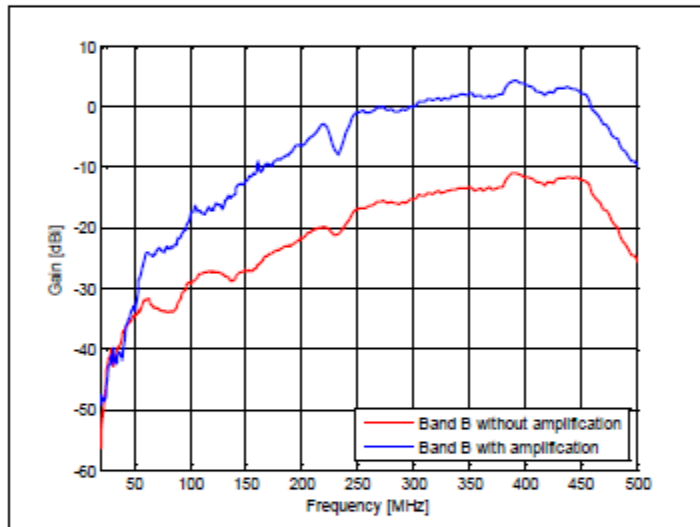
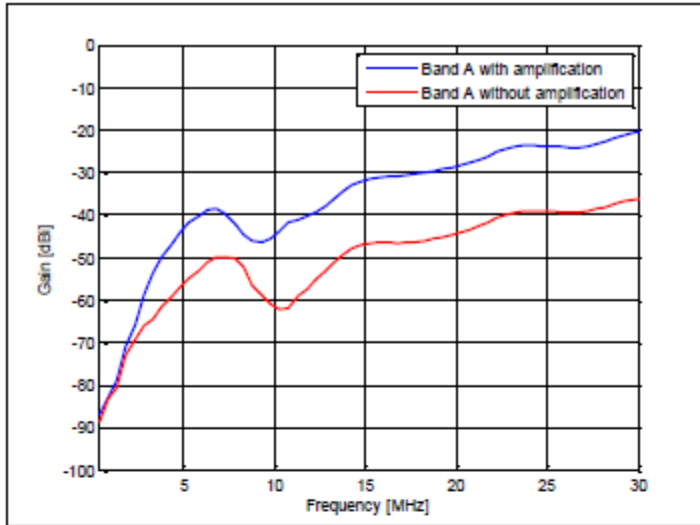
- Digital compass gives precise bearing to source
- Very wideband performance in a practical size
- Horizontal and vertical polarization
- Passive antenna if amplifier is switched off
- Excellent radiation patterns

# Specifications

Description	Specification	Note
<b>Frequency coverage</b>		
85574A-100	20 MHz to 8.5 GHz	Automatically included in an 85574A order
85574A-209	9 kHz to 20 MHz	Extension module, optional
<b>Electrical</b>		
Antenna type	Combined loop / LPDA	
Frequency range / Band		
Band A	9 kHz to 20 MHz	Option 85574A-209 required
Band B	20 to 500 MHz	
Band C	500 MHz to 8.5 GHz	
Input impedance	50 $\Omega$	Nominal
VSWR	<3.5:1	Typical
Polarization	Adjustable vertical or horizontal	
Antenna gain		
f < 600 MHz	Variable with frequency	
f > 600 MHz	6 dBi	
Amplifier	Low noise 8 to 18 dB, switch in/out	
Power supply	5V @ 200 mA maximum	Via USB
Control connection	USB	
User inputs	Frequency band selection by means of a rotatory switch Active/passive selection by means of a push button	
Angle detection	Digital compass (accuracy 3° RMS) <sup>1</sup> , integrated with antenna	
<b>Mechanical</b>		
Form factor	Handheld	
Dimensions (L x W x D)	543 mm x 320 mm x 60 mm (21.38 in x 12.60 in x 2.36 in)	
Weight	1.8 kG (3.97 lb)	
Supplied parts	Antenna, RF cable, USB cable	
Optional parts	Carry case	Option 85574A-211
	Band A extension	Option 85547A-209
<b>Environmental: designed to meet the following specifications</b>		
Operating temperature	-30°C to +55°C	
Storage temperature	-30°C to +71°C	
Ingress protection	IP56	
Mean time between failures (MTBF)	>50,000 hours	

<sup>1</sup> Compass accuracy typically 3° RMS, depending on calibration accuracy, magnetic environment, and environmental conditions.

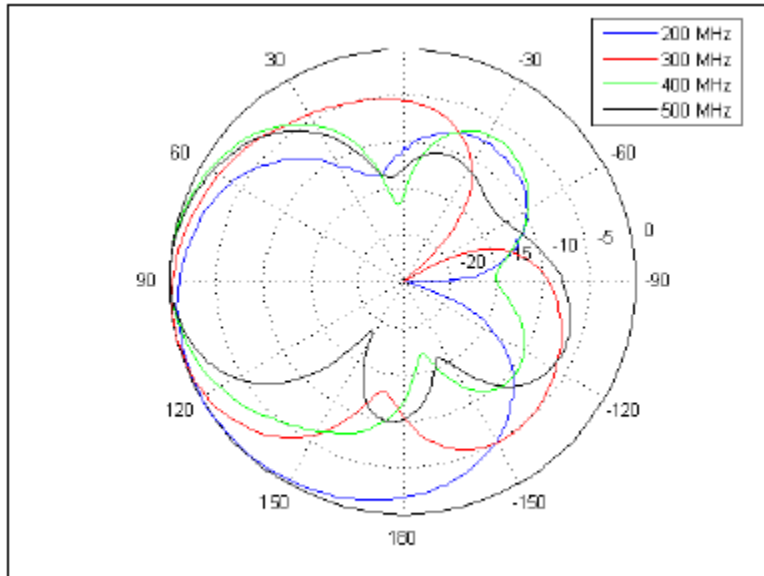
## Antenna gain:



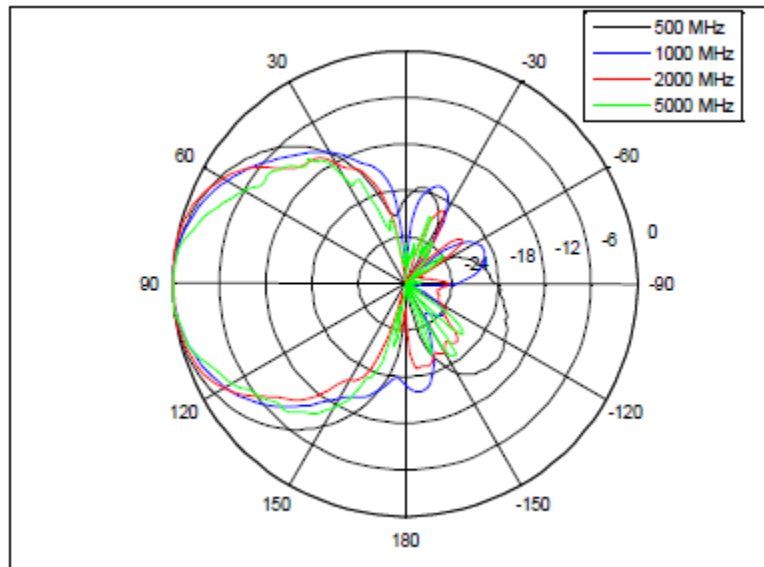
## Antenna radiation patterns (dB – normalized)

H-plane:

Band B:



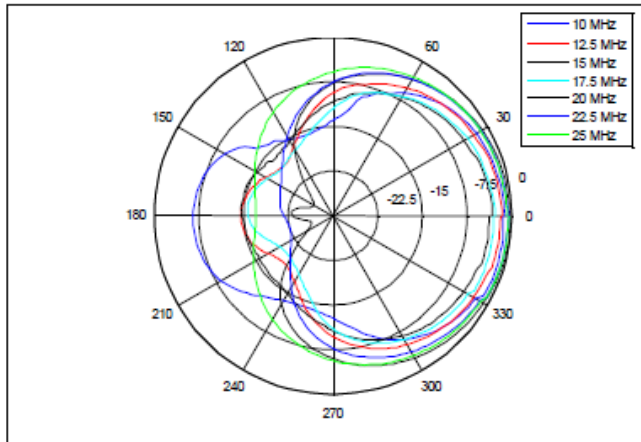
Band C:



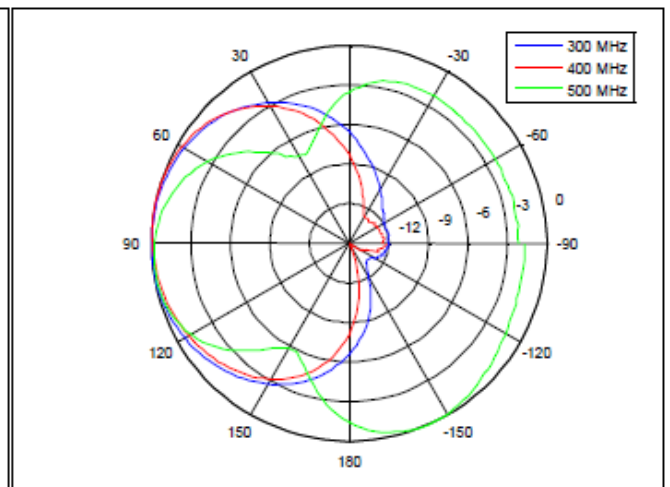
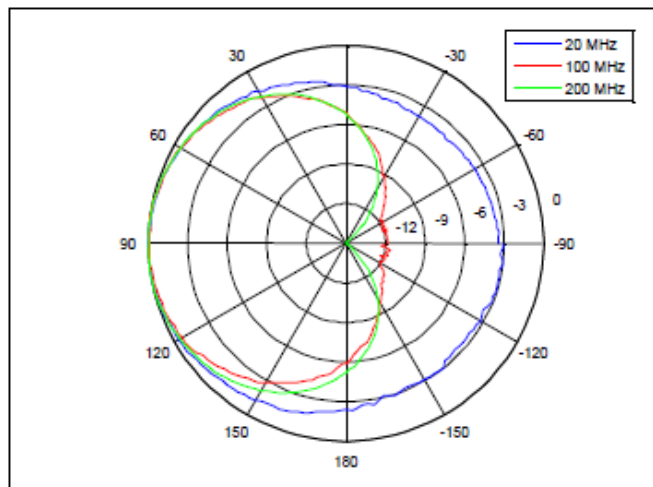
# Antenna radiation patterns (dB – normalized), continued

E-plane:

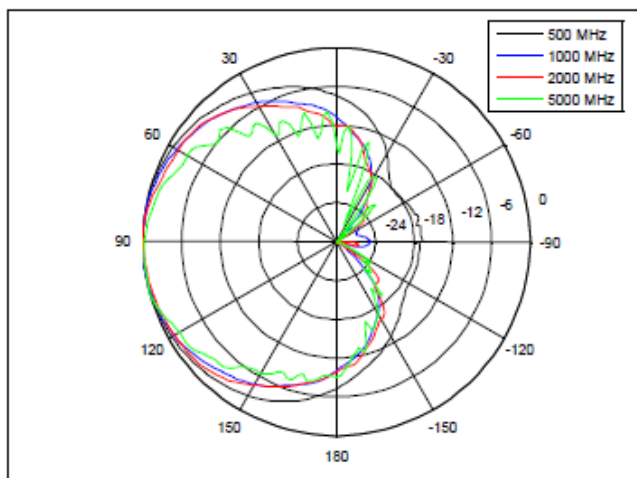
Band A:



Band B:



Band C:



# Ordering Information

Model/option number	Description	Note
<b>Handheld direction finding antenna</b>		
85574A	Handheld direction antenna and accessories	Top model number
85574A-100	20 MHz to 8.5GHz direction antenna with digital compass	Automatically included in the 85574A (also including RF/USB cable assembly)
85574A-209	Frequency extension for 85574A option 100 - 9 kHz to 20 MHz	Antenna frequency extension down to 9 kHz, optional
85574A-210	Replacement RF/USB cable assembly for 85574A option 100	For additional RF/USB cable assembly, optional
85574A-211	Hard carrycase for the 85574A option 100	Optional
<b>FieldFox handheld analyzer</b>		
N991xA/B/C, N995xA/B	FieldFox handheld combo analyzer	
N993xA/B/C, N996xA/B	FieldFox handheld spectrum analyzer	
N99xxA/B/C-233	Spectrum analyzer	Required only for the combo analyzer. Upgradable <sup>1</sup>
N9912C- SA4/SA6/SAX	Spectrum analyzer	Select one frequency option for spectrum analyzer, N9912C only. Upgradable <sup>1</sup>
N99xxA/B/C-366	Interference finder (manual mode)	Required. Upgradable <sup>1</sup>
N99xxA/B/C-307	GPS receiver	Required. Upgradable <sup>1</sup>
N9910X-825	Antenna, GPS, active	Required. Can be purchased standalone

<sup>1</sup> A license key enabled upgrade is available to an existing FieldFox handheld analyzer.

# Conclusion

This datasheet summarizes the key performance and characteristics of the Keysight 85574A handheld direction finding antenna. Paired with a Keysight FieldFox handheld analyzer equipped with necessary options, it presents an ideal solution for customers needing to pinpoint the source of interference. Additionally, the datasheet includes information on configuring the antenna/analyzer combination essential for this solution of manual interference finding.



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