

DCA Probes & Accessories

Oscilloscope Products Division
Sampling Scopes Team



N1027A-45A Remote Heads Accessory Kit

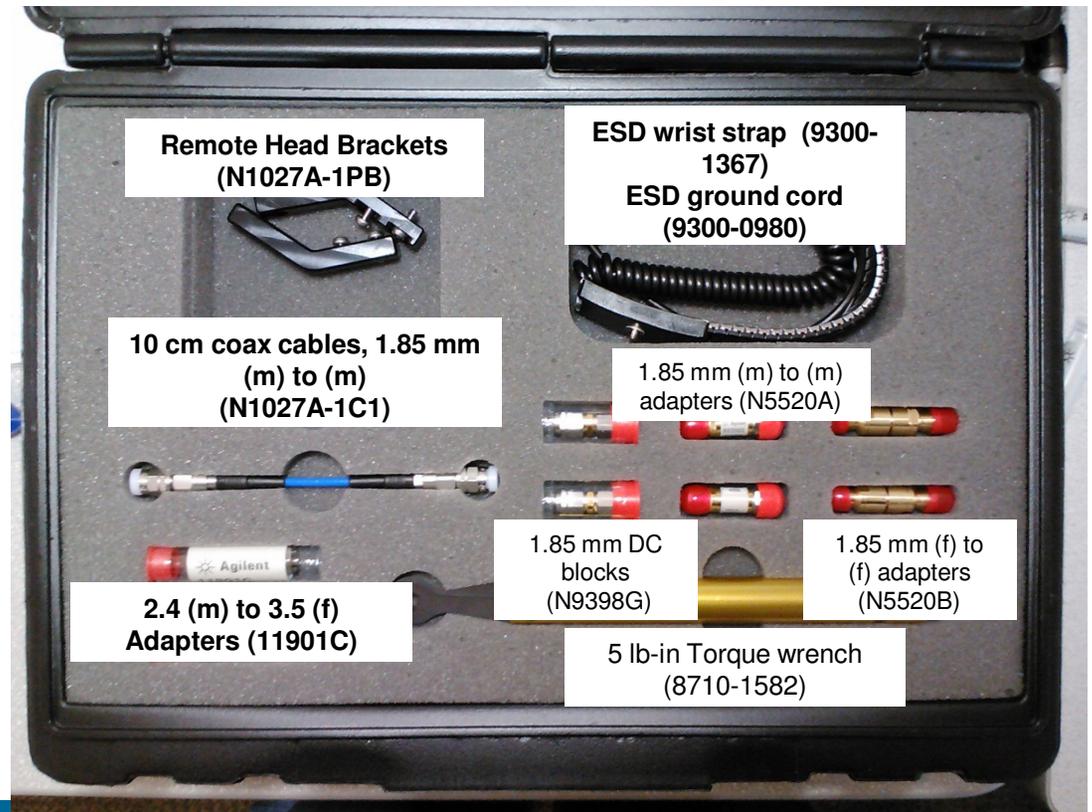
Kit consists of:

8710-1582 0.57 Nm (5 lb-in) torque wrench
2x N1027A-1PB remote head brackets

2x 11901C 2.4 mm (m) to 3.5 mm (f) adapter
2x N9398G 1.85 mm DC block
2x N5520A 1.85 mm (m) to (m) adapter
2x N5520B 1.85 mm (f) to (f) adapter

N1027A-1C1 1.85 mm cables
1x 9300-1367 ESD wrist strap
1x 9300-0980 ESD ground cord

N1027A-1AC Accessory case



Clock Recovery Phase Matching Cable Kits

N1027A-S32 Kit

N1075-60013	9/125 um single-mode fiber, FC/PC, 5.3 m
N1075-60017	Pair of 2.92 mm male-to-male coaxial cables, 1 m ^{1, 2}

N1027A-M14

N1075-60015	9/125 um single-mode fiber, FC/PC 7.1 m
N1075-60016	62.5/125 um multimode fiber, FC/PC, 6.0 m
N1075-60017	Pair of 2.92 mm male-to-male coaxial cables, 1 m ^{1, 2, 3}

¹ To connect the N1075A O/E output to the N4877A data input, and to connect the N4877A recovered clock output to the 86100C/D trigger input.

² The cable that came standard with the N1075A can then be used to connect the N4877A auxiliary output with an optional 86107A Precision Timebase

³ Use the 11901C 3.5 mm to 2.4 mm adapter that came standard with the N1075A-M14



Adapters & Connector Savers

Description below specifies gender of adapter

N5520A 1.85 mm male to 1.85 mm male adapter / connector saver
N5520B 1.85 mm female to 1.85 mm female adapter / connector saver
N5520C 1.85 mm female to 1.85 mm male connector saver

11900A 2.4 mm male to 2.4 mm male adapter / connector saver
11900B 2.4 mm female to 2.4 mm female adapter / connector saver
11900C 2.4 mm female to 2.4 mm male connector saver

11901A 2.4 mm male to 3.5 mm male adapter
11901B 2.4 mm female to 3.5 mm female adapter
11901C 2.4 mm male to 3.5 mm female adapter
11901D 2.4 mm female to 3.5 mm male adapter

85130-60010 2.4 mm female to 3.5 mm male NMD bulkhead adapter

83059A 3.5 mm male to 3.5 mm male adapter / connector saver
83059B 3.5 mm female to 3.5 mm female adapter / connector saver
83059C 3.5 mm female to 3.5 mm male connector saver

5061-5311 3.5 mm female to 3.5 mm female adapter / connector saver

2.4 mm connectors are mechanically compatible with 1.85 mm.

2.92 mm connectors are mechanically compatible with 3.5 mm and SMA connectors

*Examples: use 11901Cs to connect SMA cables to an N1045A-02F or 86108B-HBW or N4903B
use 5061-5311 as a connector saver for the 86112A, 54754A, or 86105X electrical inputs*



11900B



11901C

85130-60010
2.4F - 3.5M



5061-5311

DC Blocks, Phase Trimmers, Cables, Caps

N9398G	1.85 mm male-to-female DC Block 16V 700kHz-67GHz
N9398F	2.4 mm male-to-female DC Block 16V 50kHz-50GHz
N9398C	3.5 mm male-to-female DC Block 16V 50kHz-26.5GHz
N1027A-PT2	2.4 mm male-to-female Phase Trimmer
N1027A-PT3	3.5 mm male-to-female Phase Trimmer
N1027A-1C1	1.85 mm coaxial male-to-male cable, 67GHz, 10 cm
N4910A	2.4 mm male-to-male matched coaxial cable pair, 61 cm
N4871A	3.5 mm male-to-male matched coaxial cable pair, 91 cm
N1027A-1CF	Shipping cap to protect 1.85/2.4 mm female inputs
N1027A-1CM	Shipping cap to protect 1.85/2.4 mm male inputs



N9398F



N4910A



N1027A-PT2

2.4 mm connectors are mechanically compatible with 1.85 mm.

2.92 mm connectors are mechanically compatible with 3.5 mm and SMA connectors

Example: The N1045A-04F requires four N1027A-1CF caps

Attenuators, Terminations

8493C-003	3.5 mm 3 dB attenuator
8493C-006	3.5 mm 6 dB attenuator
8493C-010	3.5 mm 10 dB attenuator
8493C-020	3.5 mm 20 dB attenuator
8490D-003	2.4 mm 3 dB attenuator
8490D-006	2.4 mm 6 dB attenuator
8490D-010	2.4 mm 10 dB attenuator
8490D-020	2.4 mm 20 dB attenuator
909D-011	3.5 mm female 50 Ohm load
909D-301	3.5 mm male 50 Ohm load
85138A	2.4 mm male 50 Ohm load
85138B	2.4 mm female 50 Ohm load
85140A	2.4 mm male short
85140B	2.4 mm female short
85141A	2.4 mm male open
85141B	2.4 mm female open



8493C



8490D



909D-011



85138A



85140B

Power Dividers, Splitters

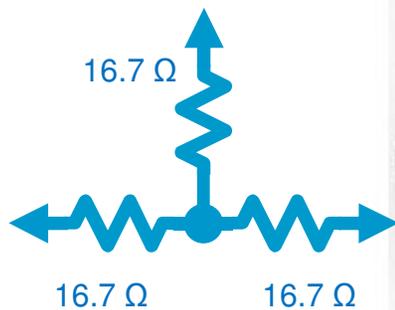
11636B 3.5 mm power divider, DC to 26.5 GHz

11636C 2.4 mm power divider, DC to 50 GHz

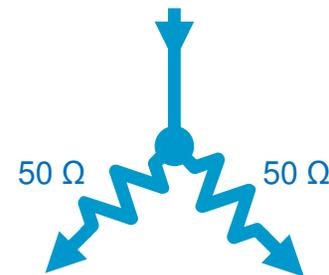
11667B 3.5 mm power splitter, DC to 26.5 GHz

11667C 2.4 mm power splitter, DC to 50 GHz

Divider



Splitter



Storage

See also www.agilent.com/find/parts

N1000-40008 Front cover for 86100D ¹

N1027A-1AC Accessory case ²

N1027A-1MC Module storage case for N1045A module

N1027A-1CL Clip for N1045A cable management

N1027A-2CL Clip for two N1045A remote heads

86101-60017 Module filler panel for 86100A/B/C/D (1/4 bay width) ³

86101-60016 Module filler panel for 86100A/B/C/D (1/2 bay width) ^{3, 4}

¹ Does not fit 86100A/B/C mainframes

² Empty N1027A-45A case

³ Use filler panels to ensure proper airflow through the inside of modules. Otherwise the movement of air may be cut short, and components may overheat in hot environments.

⁴ While supplies last. **Otherwise use two 86101-60017.**

N1000-40008



N1027A-1CL



N1027A-2CL



86101-60017

86101-60016

ESD Protection

N9355CK01 3.5 mm DC coupled limiter



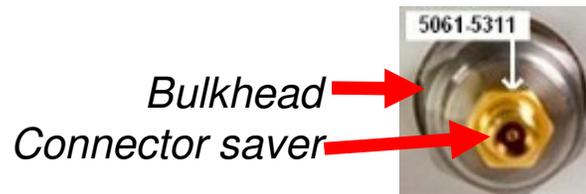
9300-1308 ESD heel strap
9300-1367 ESD wrist strap
9300-0980 ESD ground cord
9300-1484 ESD desk mat



Rack Mount Kits, Tools

- 1CM030A Rack mount kit for 86100A/B/C
- 1CP018A Rack mount kit with handles for 86100A/B/C
- 1CM015A Rack mount kit for 86100D
- 1CP020A Rack mount kit with handles for 86100D

- 8710-1582 0.57 nm (5 lbs-in) torque wrench¹
- 8710-1765 0.9 nm (8 lbs-in) torque wrench²
- 8710-1764 0.9 nm (8 lbs-in) torque wrench³



¹ Recommended for 1.85/2.4 mm DCA connectors (e.g., N1045A, 86116C, 86118A)
² Recommended for 3.5 mm DCA connectors (e.g., 54754A, 86105x, 86112A)
³ Recommended for DCA bulkheads (e.g., 86100x trigger input, 54754A, 86105x, 86112A)

InfiniiMax III - 30 GHz Probing System Overview

Probe amps



InfiniiMax III probe amps – 16 GHz, 20 GHz, 25 GHz, 30 GHz

- 16 GHz - 30 GHz (Highest BW in the market)
- Bandwidth upgradeable

Probe heads

NEW

InfiniiMax III ZIF probe head

InfiniiMax III PC board ZIF probe tips 25 GHz

InfiniiMax III Ceramic ZIF probe tips 28 GHz

Improved strength of ceramic ZIF tip by changing to 99.5% alumina material

Browser
30 GHz

2.92mm / 3.5mm / SMA
Probe adapter
28 GHz

16 GHz Solder-in
Probe head
16 GHz

NEW

26 GHz Solder-in
Probe head
26 GHz

Probe adapters

Sampling scope Adapter

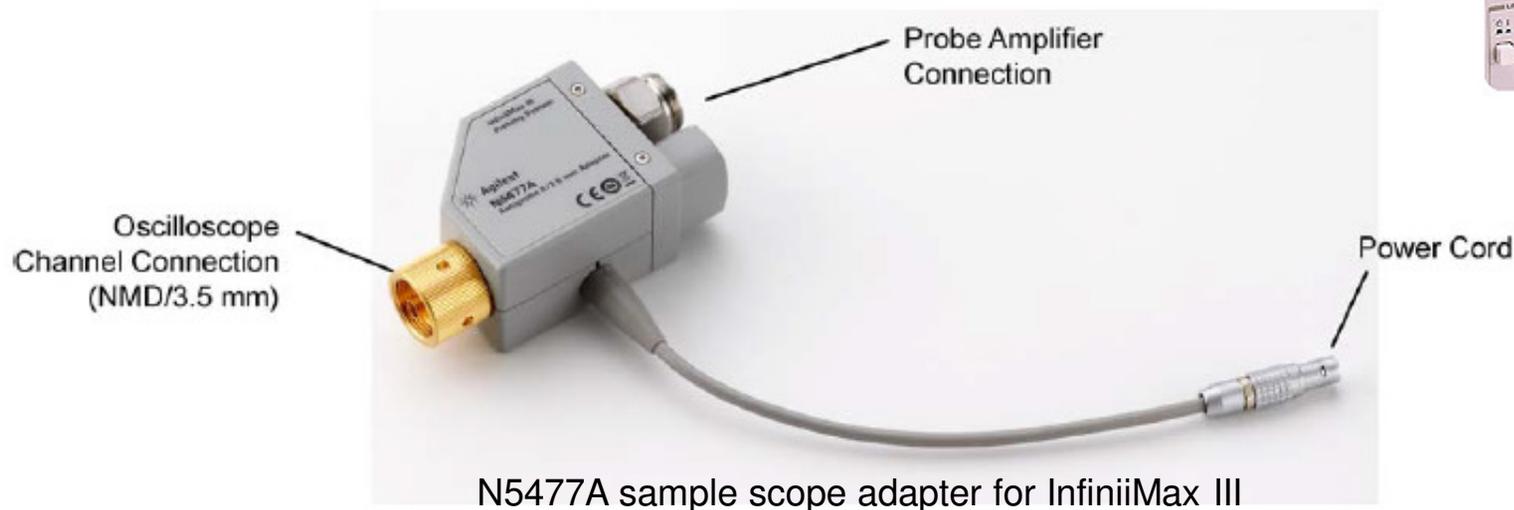
Hi impedance probe adapter

Precision BNC 50 ohm adapter

Performance verification & Deskw fixture

Using InfiniiMax III probe with DCAs

- For directly connecting to any DCA module with a 3.5 mm bulkhead connector: **N5477A** Sampling Scope Adapter to InfiniiMax III Probes
- For directly connecting to any DCA module with a 2.4 mm bulkhead connector : **N1022B** plus **85130-60010** 2.4 mm (f) to 3.5 mm (m) NMD adapter
- For modules that do not have built-in probe power: add an **1143A** probe power supply with option **001**
- N5477A plus InfiniiMax III N2803A probe provide 30 GHz bandwidth.



Using InfiniiMax I/II probe with DCAs

Required accessories and instruments:

- For directly connecting to any DCA module with a 3.5 mm bulkhead connector: **N1022B**
- For directly connecting to any DCA module with a 2.4 mm bulkhead connector : **N1022B** plus **85130-60010**
- For modules that do not have built-in probe power: add an 1143A probe power supply with option 001
- E2655C performance verification and deskew fixture for probe calibration and performance verification

Typical 1134A Configuration for 86117A

Model	Description	Quantity
1134A	7 GHz Probe Amp	1
E2669A	Diff Connectivity Kit	1
N1022B	Probe Adapter	1
85130-60010	2.4 to 3.5 mm Adapter	1
1143A	Probe Power Supply	1
opt. 001	5-foot Power Ext Cable	1
E2665C	Calibration/Deskew Fixture	1

N1021B 18 GHz Differential TDR/TDT Probe Kit

Qty.	Description	Replacement:
1	Differential TDR Probe	-
1	Pair of matched cables (1 m)	N1021-60003
2	SMA Short (m)	0960-0055
2	SMA Load 50 Ohm (m)	1810-0118
2	SMA Adapter (f-f)	1250-1666
1	Adapter to positioners (includes two 2.5 mm screws and one Allen wrench)	N1021-60008
1	ESD Wrist strap	9300-1367
1	ESD Wrist strap ground cord	9300-0980
1	ESD warning label stickers	-
1	User's Guide (either printed or on CD)	-
1	Box with foam insert	-



Optical Interfaces

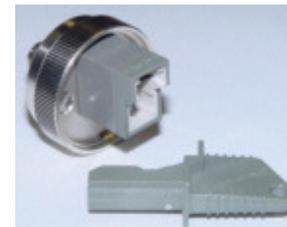
- DCA modules (8610XX, 8611XX, 83496X, N107XX)
 - Have removable connector interfaces
 - Ship with **81000FI FC/PC pre-installed**
 - Compatible with 81000xl interfaces shown here (sold separately)
- Internal fiber tip is mini HMS-10 ferrule
 - Requires patchcords with straight physical contact (DIN , E2000, FC/PC, LC, MU, SC, or ST connector)
 - Easy to clean – just unscrew the connector interface



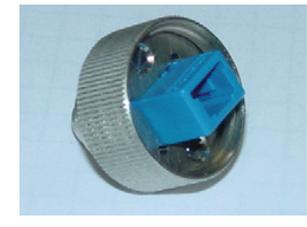
81000LI - LC



81000KI - SC



81000HI - E2000



81000MI - MU



81000SI - DIN
4108/47256



81000VI - ST

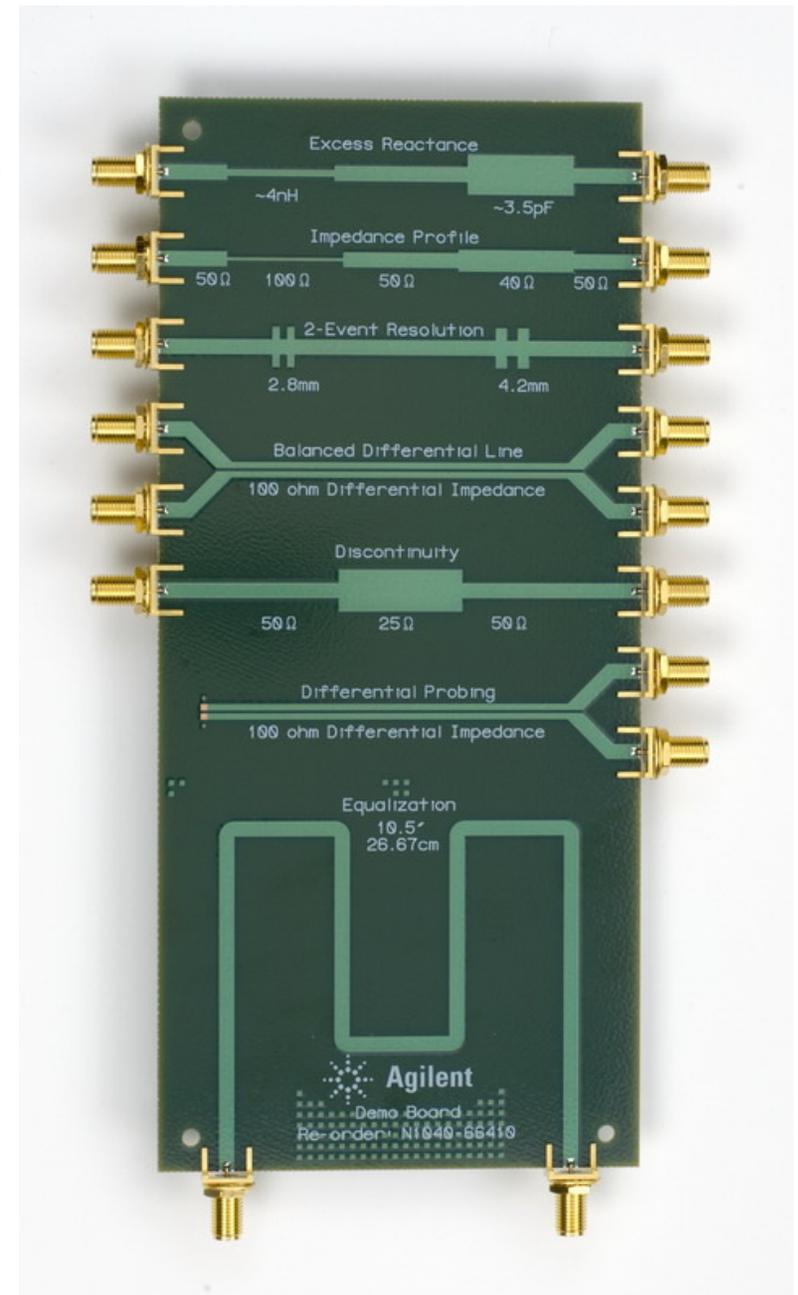


81000FI – FC/PC
(ships standard with all
optical inputs on modules
for the DCA family)

Training Tools & Devices

Available from www.agilent.com/find/parts

N1040-66410 TDR/TDT, Equalization & De-Embedding Demo Board



Appendix: DCA Input Connectors

Product	Probe Power	3.5 mm	2.4 mm	1.85 mm	Optical	Comment
54754A	Yes	f/f CS				
83496B	No	f/f CS			FC/PC Nut	
86100C/D	No	f/f CS				Trigger input
86105C	No	f/f CS			FC/PC Nut	
86105D	No	f/f CS			FC/PC Nut	
86107A	No	f/f CS	f/f CS			2.4 mm only on 40 GHz input
86108A	Yes	f/f CS				
86108B	Yes	f/f CS	f/f CS			2.4 mm only on 50 GHz inputs
86112A	Yes	f/f CS				
86115D	No				FC/PC Nut	
86116C	No			m fixed	FC/PC Nut	
86117A	No		f/f CS			
86118A	No			f fixed		
N1045A-xxF	No			f fixed		
N1045A-xxM	No			m fixed		

f/f CS

female/female connector saver (bulkhead is male, customer can remove connector saver)

m/m CS

male/male connector saver (bulkhead is female, customer can remove connector saver)

f fixed

female fixed interface

m fixed

male fixed interface

FC/PC Nut

86100FI Straight FC/PC Interface (customer can exchange it with 81000KI SC or 86100LI LC interfaces)

Appendix: RF/Microwave Connectors

3.5 mm connector

The 3.5 mm connector was primarily developed at Hewlett Packard – now Agilent Technologies, with early manufacturing at Amphenol. Its design strategy focused on highly-rugged physical interfaces that would mate with popular SMA dimensions, allowing thousands of repeatable connections. It is mode-free to 34 GHz.

2.92 mm connector

The 2.92 mm connector mates with SMA and 3.5 mm connectors and offers mode-free performance to 40 GHz.

2.4 mm connector

The 2.4 mm connector was developed by HP, Amphenol, and M/A-COM for use to 50 GHz. This design eliminates the fragility of the SMA and 2.92 mm connectors by increasing the outer wall thickness and strengthening the female fingers. It can mate with SMA, 3.5 mm and 2.92 mm with the use of precision adapters. The 2.4 mm product is offered in three quality grades; general purpose, instrument, and metrology. General purpose grade is intended for economy use on components, cables, and microstrip, where limited connections and low repeatability is acceptable. Instrument grade is best suited for measurement applications where repeatability and long life are primary considerations. Metrology grade is best suited for calibration applications where the highest performance and repeatability are required.

1.85 mm Connector

The 1.85 mm connector was developed in the mid-1980s by Hewlett Packard – now Agilent Technologies – for mode-free performance to 65 GHz. HP offered their design as public domain in 1988 to encourage standardization of connector types; a few devices are available from various manufacturers for research work. The 1.85 mm connector mates with the 2.4 mm connector and has the same ruggedness. In recent years, the 1.85 mm connector has been optimized to operate mode-free to 67 GHz.

Appendix: Literature References

[Agilent RF and Microwave Test Accessories Catalog](#)
(www.agilent.com/find/mta)

5990-8661EN

[86100D DCA-X Data Sheet](#)
(www.agilent.com/find/dcax)

5990-5824EN

[Using the Agilent N5477A Sampling Oscilloscope Adapter](#)

N5477-97000