

# RF and Microwave Test Accessories

По вопросам продаж и поддержки обращайтесь:

Архангельск (8182)63-90-72	Иваново (4932)77-34-06	Магнитогорск (3519)55-03-13	Пермь (342)205-81-47	Сургут (3462)77-98-35
Астана +7(7172)727-132	Ижевск (3412)26-03-58	Москва (495)268-04-70	Ростов-на-Дону (863)308-18-15	Тверь (4822)63-31-35
Астрахань (8512)99-46-04	Казань (843)206-01-48	Мурманск (8152)59-64-93	Рязань (4912)46-61-64	Томск (3822)98-41-53
Барнаул (3852)73-04-60	Калининград (4012)72-03-81	Набережные Челны (8552)20-53-41	Самара (846)206-03-16	Тула (4872)74-02-29
Белгород (4722)40-23-64	Калуга (4842)92-23-67	Нижний Новгород (831)429-08-12	Санкт-Петербург (812)309-46-40	Тюмень (3452)66-21-18
Брянск (4832)59-03-52	Кемерово (3842)65-04-62	Новокузнецк (3843)20-46-81	Саратов (845)249-38-78	Ульяновск (8422)24-23-59
Владивосток (423)249-28-31	Киров (8332)68-02-04	Новосибирск (383)227-86-73	Севастополь (8692)22-31-93	Уфа (347)229-48-12
Волгоград (844)278-03-48	Краснодар (861)203-40-90	Омск (3812)21-46-40	Симферополь (3652)67-13-56	Хабаровск (4212)92-98-04
Вологда (8172)26-41-59	Красноярск (391)204-63-61	Орел (4862)44-53-42	Смоленск (4812)29-41-54	Челябинск (351)202-03-61
Воронеж (473)204-51-73	Курск (4712)77-13-04	Оренбург (3532)37-68-04	Сочи (862)225-72-31	Череповец (8202)49-02-64
Екатеринбург (343)384-55-89	Липецк (4742)52-20-81	Пенза (8412)22-31-16	Ставрополь (8652)20-65-13	Ярославль (4852)69-52-93

## Choose high-quality for every connection...

Choose from over 200 accessories that support up to 67 GHz, from small adapters to immense system amplifiers

Technologies, Inc. test accessories eliminates the weak links in your measurement system

- Guaranteed accurate and repeatable results
- Reduce cost of test
- Superior RF performance to optimize test equipment performance
- Unmatched quality and reliability to minimize measurement uncertainty

## U1810B USB Coaxial Switch SPDT, DC to 18 GHz



The U1810B is a USB-powered SPDT coaxial switch, operating from DC to 18 GHz, and supports the standard plug-and-play functionality of typical USB devices. The unique combination of excellent RF performance with the convenience of USB connectivity presents an invaluable alternative for users to optimize the efficiency of their test systems. No additional power supply is required and the Type-N input connector provides a rugged and robust connection with the instrument ports.

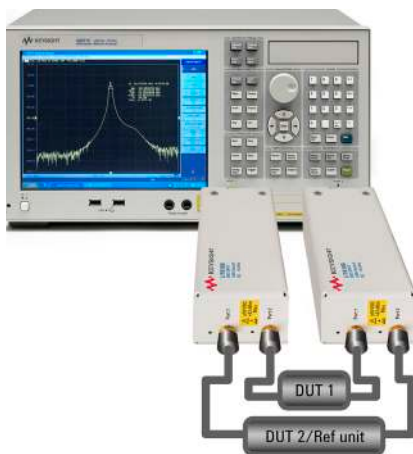
Key Feature	USB trademark plug-and-play and manual toggle via hard button on the switch body	Type-N input connector provides a rugged and robust connection with the instrument ports	Guaranteed 0.03 dB IL repeatability	Guaranteed 5 million cycles operating life (typ. 10 million cycles)
Benefit	Provides fast and easy control and access	Extends instrument's ports and increases throughput	Ensures measurement accuracy and improves signal integrity	Reduces cost of test and ensures reliability of the test system life expectancy



## Typical applications

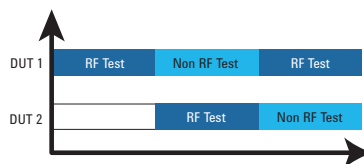
### With Wireless Test Set

For RF and non-RF mobile phone manufacturing test, the USB switch helps to reduce the idle time of the test set (during non-RF test) by switching to DUT 2, before it switches to DUT 1 for the test.



### With Network Analyzer

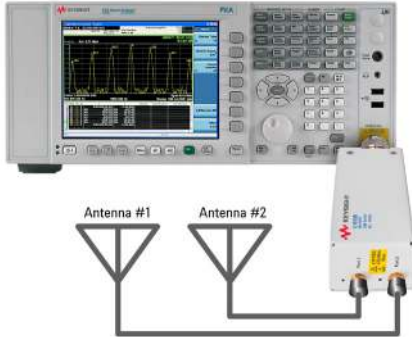
Measure two DUTs with 1 connection either in frequency (antenna) or time domain (coaxial cable) application. Or switch between DUT and reference unit for calibration.



## Typical applications (continued)

### With Spectrum Analyzer

Easily toggle between two antennas connected to the switch to perform relevant measurements.



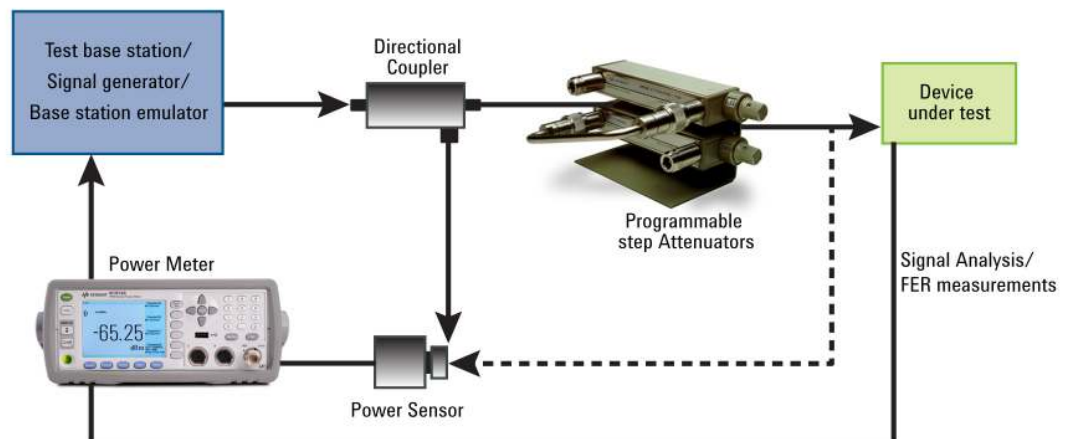
### With FieldFox RF Analyzer

At a cell site, the USB switch can be used to test 2 cables for return loss and distance-to-fault measurements.



## High frequency RF & microwave accessories for microwave link applications

Microwave link is a commonly used method for point-to-point communications systems providing a broad frequency range for large information transmission with a high degree of flexibility. offers a series of high frequency accessories that helps you with microwave link applications. An example of a microwave link application is a receiver sensitivity test as shown on the right. The receiver sensitivity test is used to measure a receiver's performance where it must be able to decode data bits with a specified bit error rate at different input power levels. Step attenuators are used to eliminate the power level non-linearity and accuracy issue from the source and also enable a low level power measurement down to -121 dBm.



## High frequency microwave test accessories

	Product Family	Model Number	Frequency
Switches	SPDT & Bypass	N1810/1/2	40/50/67 GHz
	SP4T/6T	87104/6D	40 GHz
	Transfer DPDT	87222D	40 GHz
	Transfer DPDT	87222E	50 GHz
	SPDT	8765D	40 GHz
	SP4T/5T/6T	8767/8/9M	50 GHz
	SPDT	85331B	50 GHz
	P4T	85332B	50 GHz
Attenuators	11 dB, 1 dB steps	84904L	40 GHz
	90 dB, 10 dB steps	84906L	40 GHz
	70 dB, 10 dB steps	84907L	40 GHz
	11 dB, 1 dB steps	84904M	50 GHz
	60 dB, 10 dB steps	84905M	50 GHz
	65 dB, 5 dB steps	84908M	50 GHz
	Fixed 3/6/10/20/30/40 dB	8490D	50 GHz
	Fixed 3/6/10/20/30/40 dB	8490G	67 GHz
Amplifiers	2 GHz to 50 GHz	83050A	50 GHz
	45 MHz to 50 GHz	83051A	50 GHz
DC Blocks	50 kHz to 50 GHz	N9398F	50 GHz
	700 kHz to 50 GHz	N9399F	50 GHz
	700 kHz to 67 GHz	N9398G	67 GHz
Directional Couplers	1 to 40 GHz	87301D	40 GHz
	10 to 46 GHz	87301B	46 GHz
	10 to 50 GHz	87301C	50 GHz
	2 to 50 GHz	87301E	50 GHz
Detectors	10 MHz to 50 GHz	8474E	50 GHz
Power Dividers	DC to 50 GHz	11636C	50 GHz
Power Limiters	10 MHz to 50 GHz	N9355F	50 GHz
Adapters	1.85 mm Adapters	N5520A/B/C	67 GHz
	2.4 mm to 2.4 mm Adapters	11900A/B/C	50 GHz
	2.4 mm to 2.92 mm Adapters	11904A/B/C/D	40 GHz
Terminations	2.4 mm (male)/(female)	85138A/B	50 GHz

## RF and microwave amplifiers key features

- Broadband performance up to 50 GHz optimizes the operating range of your test systems
- Excellent noise figure and high gain significantly reduce overall test system noise figure
- High output power boosts available power for measurements



Preamplifier

System amplifiers

System amplifier

## Product specifications

Model	Frequency range (GHz)	Noise figure (dB) (typical)	Output power at P <sub>sat</sub> (dBm)	Output power at P <sub>1dB</sub> (dBm)	Gain (dB) (min)	RF connectors (input/output)
<b>Preamplifiers</b>						
87405B	0.01 to 4 GHz	5 at 4 GHz	7 at 4 GHz	8 at 4 GHz	22	Type N (m.f)
87405C	0.1 to 18 GHz	6 at 4 GHz 4.5 at 18 GHz	17 at 18 GHz	15 at 4 GHz 14 at 18 GHz	25	Type N (m.f)
N4985A-S30 <sup>1</sup>	0.00001 to 30 GHz	5 at 2 to 30 GHz	22 at 26 GHz	N/A	30 at 26 GHz	2.92 mm (f)
N4985A-S50 <sup>2</sup>	0.00001 to 50 GHz	5 at 2 to 30 GHz 6 at 20 to 40 GHz	17 at 50 GHz	N/A	27 at 45 GHz	2.92 mm (f)
<b>System amplifiers</b>						
87415A	2 to 8 GHz	13 at 8 GHz	26 at 8 GHz	23 at 8 GHz	25	SMA (f)
83006A	0.01 to 26.5 GHz	13 at 0.1 GHz 8 at 18 GHz 13 at 26.5 GHz	18 at 10 GHz 16 at 20 GHz 14 at 26.5 GHz	13 at 20 GHz 10 at 26.5 GHz	20	3.5 mm (f)
83017A <sup>3</sup>	0.5 to 26.5 GHz	8 at 20 GHz 13 at 26.5 GHz	20 at 20 GHz 15 at 26.5 GHz	18 at 20 GHz 13 at 26.5 GHz	25	3.5 mm (f)
83018A <sup>3</sup>	2 to 26.5 GHz	10 at 20 GHz 13 at 26.5 GHz	24 at 20 GHz 21 at 26.5 GHz	22 at 20 GHz 17 at 26.5 GHz	27 dB at 20 GHz 23 dB at 26.5 GHz	3.5 mm (f)
83020A <sup>3</sup>	2 to 26.5 GHz	10 at 20 GHz 13 at 26.5 GHz	30 at 20 GHz 25 at 26.5 GHz	27 at 20 GHz 23 at 26.5 GHz	30 dB at 20 GHz 27 dB at 26.5 GHz	3.5 mm (f)
N4985A-P15	0.01 to 50 GHz	12 at 50 GHz	25 at 26.5 GHz 20 at 50 GHz	23 at 26.5 GHz 17 at 50 GHz	22 at 50 GHz	2.4 mm (f)
83050A	2 to 50 GHz	6 at 26.5 GHz 10 at 50 GHz	20 at 40 GHz 17 at 50 GHz	15 at 40 GHz 13 at 50 GHz	21	2.4 mm (f)
N4985A-P25	2 to 50 GHz	12 at 50 GHz	25 at 26.5 GHz 20 at 50 GHz	23 at 26.5 GHz 17 at 50 GHz	22 at 50 GHz	2.4 mm (f)
83051A	0.045 to 50 GHz	12 at 2 GHz 6 at 26.5 GHz 10 at 50 GHz	12 at 45 GHz 10 at 50 GHz	8 at 45 GHz 6 at 50 GHz	23	2.4 mm (f)

1. Option OA3 is available for optical application tuning.
2. Option OA5 is available for optical application tuning.
3. 83017A, 83018A and 83020A include internal directional detectors with BNC (f) DC connectors for external leveling applications.

По вопросам продаж и поддержки обращайтесь:

Архангельск (8182)63-90-72	Иваново (4932)77-34-06	Магнитогорск (3519)55-03-13	Пермь (342)205-81-47	Сургут (3462)77-98-35
Астана +7(7172)727-132	Ижевск (3412)26-03-58	Москва (495)268-04-70	Ростов-на-Дону (863)308-18-15	Тверь (4822)63-31-35
Астрахань (8512)99-46-04	Казань (843)206-01-48	Мурманск (8152)59-64-93	Рязань (4912)46-61-64	Томск (3822)98-41-53
Барнаул (3852)73-04-60	Калининград (4012)72-03-81	Набережные Челны (8552)20-53-41	Самара (846)206-03-16	Тула (4872)74-02-29
Белгород (4722)40-23-64	Калуга (4842)92-23-67	Нижний Новгород (831)429-08-12	Санкт-Петербург (812)309-46-40	Тюмень (3452)66-21-18
Брянск (4832)59-03-52	Кемерово (3842)65-04-62	Новокузнецк (3843)20-46-81	Саратов (845)249-38-78	Ульяновск (8422)24-23-59
Владивосток (423)249-28-31	Киров (8332)68-02-04	Новосибирск (383)227-86-73	Севастополь (8692)22-31-93	Уфа (347)229-48-12
Волгоград (844)278-03-48	Краснодар (861)203-40-90	Омск (3812)21-46-40	Симферополь (3652)67-13-56	Хабаровск (4212)92-98-04
Вологда (8172)26-41-59	Красноярск (391)204-63-61	Орел (4862)44-53-42	Смоленск (4812)29-41-54	Челябинск (351)202-03-61
Воронеж (473)204-51-73	Курск (4712)77-13-04	Оренбург (3532)37-68-04	Сочи (862)225-72-31	Череповец (8202)49-02-64
Екатеринбург (343)384-55-89	Липецк (4742)52-20-81	Пенза (8412)22-31-16	Ставрополь (8652)20-65-13	Ярославль (4852)69-52-93