



16613/16614/16615 Series Noise Source

(10MHz to 18GHz/26.5GHz/40GHz/50GHz/67GHz/110GHz)



Ceyear Technologies Co.,Ltd

Product Overview

Noise sources generate random, continuous spectral signals that provide noise power standards for noise figure measurements. With over 30 years of experience in noise figure testing, Ceyear Instruments developed the 1661X series of noise sources, which have stable output noise power and uniform power spectral density. These sources can greatly enhance the accuracy of noise figure testing. The series includes 22 models of standard noise sources (16613) and intelligent noise sources (16614/16615), which support three types of drive interfaces: BNC, I²C, and USB. They have a wide bandwidth, covering 10 MHz to 110 GHz. The products have the advantages of a small VSWR of the output port, good output SNR flatness, and more. These products can be used to set up a noise figure test system with various noise figure measurement instruments. They can also be used independently as a calibration source.

The 16613 series standard noise sources cover frequencies from 10 MHz to 18, 26.5, 40, 50, 67, and 110 GHz. The series includes eight models: the 16613DA/DB/EA/EB/FB/HB/LC and P. They adopt the international standard +28 V voltage drivers and BNC negative head driver interface for strong compatibility.

The 16614 series of intelligent noise sources covers 10 MHz to 18, 26.5, 40, 50, and 67 GHz and includes seven models: 16614DA, 16614DB, 16614EA, 16614EB, 16614FB, 16614HB, and 16614LC. These models adopt I²C bus technology and electronically store the ultra-noise ratio. They also have a built-in digital temperature sensor that automatically loads the ultra-noise ratio after connecting to a noise figure analyzer. The real-time detection of the ambient temperature improves the measurement speed and accuracy.

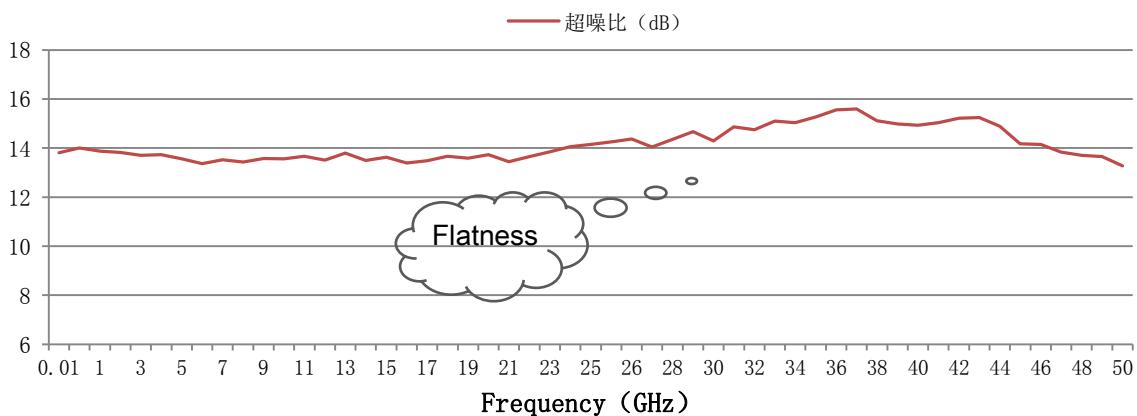
The 16615 series intelligent noise source frequency covers 10 MHz to 18, 26.5, 40, 50, and 67 GHz. It includes seven models: 16615DA, 16615DB, 16615EA, 16615EB, 16615FB, 16615HB, and 16615LC. It has a USB interface design that is more in line with multi-scenario applications. It is compatible with the USB-TMC protocol and has electronic storage of an ultra-noise ratio. It has a built-in digital temperature sensor and can be easily accessed to support Windows and Linux test instruments. It can also be connected to a computer for program-controlled use.

Main Features

- Wide frequency coverage and flexible band selection, excellent SNR flatness and selectable SNR parameters
- Supports a wide range of noise figure measurement instruments. The USB noise source can also be connected to a computer for programmed use.
- The 16614/16615 Series Intelligent Noise Sources are plug-and-play with electronic storage of SNR data
- The 16614/16615 Series Intelligent Noise Sources have built-in digital temperature sensors that detect the ambient temperature in real time.

Wide frequency coverage and flexible band selection

The noise source is characterized by its wide frequency coverage, flexible frequency band selection, excellent ultra-noise ratio flatness, and selectable ultra-noise ratio size. These features provide an optimal noise power standard for measuring the noise coefficients of the parts under test in different frequency bands and gain ranges.



Supports a wide range of noise figure measurement instruments

The Series 16615 USB Intelligent Noise Sources can be paired with Ceyear's TianHeng Star series of noise factor analyzers, vector network analyzers, and signal/spectrum analyzers; the 4082 and 4052 series of signal/spectrum analyzers; and other hosts. They can also be paired with a computer for programmed use.

Intelligent Noise Sources are plug-and-play with electronic storage of SNR data

The 16614/16615 series noise sources support an automatic intelligent identification function and plug-and-play capability. They have built-in electronic memory that stores frequency and ultra-noise ratio data pairs. After connecting them to noise coefficient measurement instruments, the ultra-noise ratio of the noise sources can be automatically loaded into the noise coefficient measurement instrument's ultra-noise ratio table. This improves measurement speed.



Intelligent Noise Sources have built-in digital temperature sensors

The 16614/16615 series of intelligent noise sources has a built-in digital temperature sensor that detects changes in ambient temperature in real time. This sensor is used for temperature correction of noise figure measurements, thereby improving measurement accuracy.



Technical Specifications

16613 Series Noise Sources						
Model	Frequency Range	SNR Range	Output Port VSWR	Output Interface	Driver Interface	
16613DA	10MHz ~ 18GHz	5dB ~ 8dB	< 1.30 : 1	3.5mm(M)	Standard BNC Driver Interface	
16613DB	10MHz ~ 18GHz	14dB ~ 17dB	< 1.30 : 1			
16613EA	10MHz ~ 26.5GHz	5dB ~ 8dB	< 1.30 : 1			
16613EB	10MHz ~ 26.5GHz	12dB ~ 17dB	< 1.35 : 1			
16613FB	10MHz ~ 40GHz	12dB ~ 19dB	< 1.35 : 1 10MHz ~ 18GHz	2.4mm(M)		
			< 1.45 : 1 18GHz ~ 40GHz			
16613HB	10MHz ~ 50GHz	10dB ~ 19dB	< 1.35 : 1 10MHz ~ 18GHz			1.85mm(M)
			< 1.50 : 1 18GHz ~ 50GHz			
16613LC	10MHz ~ 67GHz	7dB ~ 23dB	< 1.60 : 1 10MHz ~ 40GHz	1.0mm(M)		
			< 2.00 : 1 40GHz ~ 67GHz			
16613P	10MHz ~ 110GHz	5dB ~ 23dB	< 2.50 : 1 10MHz ~ 50GHz		1.0mm(M)	
			< 2.80 : 1 50GHz ~ 110GHz			
Dimensions (W×H×D)	16613DA/DB/EA/EB: (30±1.0)mm ×(21±1.0)mm ×(136±2.5)mm 16613FB/HB/LC: (30±1.0)mm ×(21±1.0)mm ×(133±2.5)mm 16613P: (30±1.0)mm ×(21±1.0)mm ×(132±2.5)mm					
Weight	16613DA/DB/EA/EB/FB/HB/LC: (160±10)g 16613P: (135±10)g					
16614 Series Noise Sources						
Model	Frequency Range	SNR Range	Output Port VSWR	Output Interface	Driver Interface	
16614DA	10MHz ~ 18GHz	5dB ~ 8dB	< 1.30 : 1	3.5mm(M)	I ² C Bus driver interface	
16614DB	10MHz ~ 18GHz	14dB ~ 17dB	< 1.30 : 1			
16614EA	10MHz ~ 26.5GHz	5dB ~ 8dB	< 1.30 : 1			
16614EB	10MHz ~ 26.5GHz	12dB ~ 17dB	< 1.35 : 1			
16614FB	10MHz ~ 40GHz	12dB ~ 19dB	< 1.35 : 1	2.4mm(M)		

			10MHz ~ 18GHz			
			< 1.45 : 1			
			18GHz ~ 40GHz			
16614HB	10MHz ~ 50GHz	10dB ~ 19dB	<1.35:1			
			10MHz ~ 18GHz			
			< 1.50:1			
			18GHz ~ 50GHz			
16614LC	10MHz ~ 67GHz	7dB ~ 23dB	< 1.60 : 1	1.85mm(M)		
			10MHz ~ 40GHz			
			< 2.00 : 1			
			40GHz ~ 67GHz			
Dimensions (W×H×D)	16614DA/DB/EA/EB:(38±1.5)mm ×(28±1.0)mm ×(123±2.5)mm 16614FB/HB/LC: (38±1.5)mm ×(28±1.0)mm ×(120±1.5)mm					
Weight	(175±10)g					
16615 Series Noise Sources						
Model	Frequency Range	SNR Range	Output Port VSWR	Output Interface	Driver Interface	
16615DA	10MHz ~ 18GHz	5dB ~ 8dB	< 1.30 : 1	3.5mm(M)	USB Bus driver interface	
16615DB	10MHz ~ 18GHz	14dB ~ 17dB	< 1.30 : 1			
16615EA	10MHz ~ 26.5GHz	5dB ~ 8dB	< 1.30 : 1			
16615EB	10MHz ~ 26.5GHz	12dB ~ 17dB	< 1.35 : 1			
16615FB	10MHz ~ 40GHz	12dB ~ 19dB	< 1.35 : 1	2.4mm(M)		
			10MHz ~ 18GHz			
16615HB	10MHz ~ 50GHz	10dB ~ 19dB	< 1.45 : 1			
			18GHz ~ 40GHz			
16615LC	10MHz ~ 67GHz	7dB ~ 23dB	< 1.35 : 1			1.85mm(M)
			10MHz ~ 18GHz			
16615LC	10MHz ~ 67GHz	7dB ~ 23dB	< 1.50 : 1			
			18GHz ~ 50GHz			
16615LC	10MHz ~ 67GHz	7dB ~ 23dB	< 1.60 : 1			
			10MHz ~ 40GHz			
16615LC	10MHz ~ 67GHz	7dB ~ 23dB	< 2.00 : 1			
			40GHz ~ 67GHz			
Dimensions (W×H×D)	16615DA/DB/EA/EB: (38±1.5)mm ×(28±1.0)mm ×(133±2.5)mm 16615FB/HB/LC: (38±1.5)mm ×(28±1.0)mm ×(130±1.5)mm					
Weight	(170±10)g					

Ordering Information

- Noise Source Model

Model	Descriptions
16613DA	Frequency range:10MHz ~ 18GHz , SNR range: 5dB ~ 8dB
16613DB	Frequency range: 10MHz ~ 18GHz , SNR range: 14dB ~ 17dB
16613EA	Frequency range: 10MHz ~ 26.5GHz , SNR range: 5dB ~ 8dB
16613EB	Frequency range: 10MHz ~ 26.5GHz , SNR range: 12dB ~ 17dB
16613FB	Frequency range: 10MHz ~ 40GHz , SNR range: 12dB ~ 19dB
16613HB	Frequency range: 10MHz ~ 50GHz , SNR range: 10dB ~ 19dB
16613LC	Frequency range: 10MHz ~ 67GHz , SNR range: 7dB ~ 23dB
16613P	Frequency range: 10MHz ~ 110GHz , SNR range: 5dB ~ 23dB
16614DA	Frequency range: 10MHz ~ 18GHz , SNR range: 5dB ~ 8dB
16614DB	Frequency range: 10MHz ~ 18GHz , SNR range: 14dB ~ 17dB
16614EA	Frequency range: 10MHz ~ 26.5GHz , SNR range: 5dB ~ 8dB
16614EB	Frequency range: 10MHz ~ 26.5GHz , SNR range: 12dB ~ 17dB
16614FB	Frequency range: 10MHz ~ 40GHz , SNR range: 12dB ~ 19dB
16614HB	Frequency range: 10MHz ~ 50GHz , SNR range: 10dB ~ 19dB
16614LC	Frequency range: 10MHz ~ 67GHz , SNR range: 7dB ~ 23dB
16615DA	Frequency range: 10MHz ~ 18GHz , SNR range: 5dB ~ 8dB
16615DB	Frequency range: 10MHz ~ 18GHz , SNR range: 14dB ~ 17dB
16615EA	Frequency range: 10MHz ~ 26.5GHz , SNR range: 5dB ~ 8dB
16615EB	Frequency range: 10MHz ~ 26.5GHz , SNR range: 12dB ~ 17dB
16615FB	Frequency range: 10MHz ~ 40GHz , SNR range: 12dB ~ 19dB
16615HB	Frequency range: 10MHz ~ 50GHz , SNR range: 10dB ~ 19dB
16615LC	Frequency range: 10MHz ~ 67GHz , SNR range: 7dB ~ 23dB

- Standard

No.	Name	Qty.	Remarks
1	Connection Cable	1	16613 series: BNC cable, length 1.2m, for noise source drive; 16614 series: Coaxial Probe connection cable, length 1.5m, for noise source drive and communication; 16615 series: USB cable, length 2.0m, for noise source drive and communication.
2	Coaxial Adapter	1	It is used to adapt connections between the output of a noise source and the input port of a measurement host
3	SNR Calibration Date	1	
4	Product Certificate of Conformity	1	

- Option

No.	Option Model	Option Name	Remarks
1	16613DA-JL	Calibration service	16613DA calibration service and provide calibration report
2	16613DB-JL	Calibration service	16613DB calibration service and provide calibration report
3	16613EA-JL	Calibration service	16613EA calibration service and provide calibration report
4	16613EB-JL	Calibration service	16613EB calibration service and provide calibration report
5	16613FB-JL	Calibration service	16613FB calibration service and provide calibration report
6	16614DA-JL	Calibration service	16614DA calibration service and provide calibration report
7	16614DB-JL	Calibration service	16614DB calibration service and provide calibration report
8	16614EA-JL	Calibration service	16614EA calibration service and provide calibration report
9	16614EB-JL	Calibration service	16614EB calibration service and provide calibration report
10	16614FB-JL	Calibration service	16614FB calibration service and provide calibration report
11	16615DA-JL	Calibration service	16615DA calibration service and provide calibration report
12	16615DB-JL	Calibration service	16615DB calibration service and provide calibration report
13	16615EA-JL	Calibration service	16615EA calibration service and provide calibration report
14	16615EB-JL	Calibration service	16615EB calibration service and provide calibration report
15	16615FB-JL	Calibration service	16615FB calibration service and provide calibration report