

# COAXIAL CALIBRATION COMPONENT MANUAL

FOCUS ON RF FIELD



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BEIJING YUEXIANG TECHNOLOGY CO.,LTD

## ENTERPRISE INTRODUCTION

### BEIJING YUEXIANG TECHNOLOGY CO., LTD

Beijing Yuexiang Technology Co., Ltd., with radio frequency (RF) and microwave technology as its core competency, has always been dedicated to the research, development, and innovation of microwave components and core parts of instrumentation. We offer five major categories of products, including RF and microwave active & passive components, connectors and cables, instrumentation, communication testing, and test system solutions. Additionally, we provide one-stop customized interconnection and communication solutions, continuously empowering fields such as communication testing, radar, electronic warfare, industrial microwave, aerospace, satellite communication, civilian communication, medical electronics, automotive consumption, and more. We strive to promote digitalization and informatization, accelerating the construction of a new intelligent and connected world where humans and nature are integrated.

### MARKET AND SERVICE



Aerospace

Advanced communication and signal monitoring technologies serve the armed forces and air traffic control, ensuring the safety of critical infrastructure, as well as providing precise testing and measurement equipment for the aerospace and defense sectors.



Wireless Communication

Cutting-edge broadcast television, post-production, and test and measurement equipment suitable for network operators, broadcasters, studios, the film industry, and manufacturers of electronic entertainment equipment.



Research Institutes and Laboratories

High-precision communication and signal monitoring technologies relied upon by research institutes and laboratories to ensure the smooth progress of scientific research projects and advanced testing and measurement equipment for technological innovation.



Commercial Aircraft

Advanced communication and signal monitoring technologies serve as critical infrastructure products that safeguard the safety of commercial aircraft, alongside precise testing and measurement equipment tailored for the aerospace sector.



Ships

It provides solid technical support for the safe navigation and efficient operation of ships, ensuring both safety and efficiency during maritime voyages.



Medical Equipment

The application of advanced technologies and equipment provides robust safeguards for the safe and efficient operation of medical equipment, laying a solid foundation for the continuous development of the medical industry.

## Product Overview »

Calibration kits are test accessories for vector network analyzers, which can significantly enhance the testing accuracy of the vector network analyzers.

Inside the coaxial calibration piece, there is one U-disk containing calibration data.



## Performance characteristics

- Series coaxial port
- Wideband: DC to 120GHz
- High cost-effectiveness
- Fixed load calibration

## Technical indicators

Model	Name	Frequency Range	Technical Specifications	Configuration List
20204	Coaxial calibration kit	DC~3GHz	Circuit breaker: $\pm 1.6^\circ$ Short circuit device: $\pm 1.2^\circ$ Fixed load: VSWR < 1.04 75 $\Omega$ adapter: VSWR < 1.05	1 piece of N-type 75 $\Omega$ male open-circuit device 1 piece of N-type 75 $\Omega$ male short-circuit protector 1 piece of N-type 75 $\Omega$ female open-circuit device 1 piece of N-type 75 $\Omega$ female short-circuit device 1 piece of N-type 75 $\Omega$ female load 1 piece of N-type 75 $\Omega$ male load One N75(f)-N75(f) adapter 1 piece of N75(m)-N75(m) adapter 1 piece of N75(m)-N75(f) adapter N50(f)-N75(m) adapter 1 option N50(m)-N75(m) adapter 1 option N50(m)-N75(f) adapter 1 option N50(f)-N75(f) adapter 1 option 1 piece of N-type torque wrench

## Technology

Model	Name	Frequency Range	Technical Specifications	Configuration List
20205	Coaxial calibration kit	DC~3GHz	Circuit breaker: $\pm 0.85^\circ$ Short circuit device: $\pm 0.65^\circ$ Fixed load: VSWR < 1.015 Adapter: VSWR < 1.029	1 piece of N-type male circuit breaker 1 piece of N-type female circuit breaker 1 piece of N-type male short-circuit protector 1 piece of N-type female short-circuit device 1 piece of N-type female load 1 piece of N-type male load 1 piece of N(f)-N(f) adapter N(m)-N(m) adapter, 1 piece 1 piece of N(m)-N(f) adapter One N-type torque wrench
20207	Coaxial calibration kit	DC~3GHz	Circuit breaker: $\pm 0.85^\circ$ Short circuit device: $\pm 0.65^\circ$ Fixed load: VSWR < 1.015	N-type 50 $\Omega$ T-type male calibration piece
20207	Coaxial calibration kit	DC~3GHz	Circuit breaker: $\pm 0.85^\circ$ Short circuit device: $\pm 0.65^\circ$ Fixed load: VSWR < 1.015	N-type 50 $\Omega$ T-type female calibrator
31104	Coaxial calibration kit	DC~6GHz	Circuit breaker: $\pm 1.5^\circ$ Short circuit device: $\pm 1.0^\circ$ Fixed load: VSWR < 1.023 Adapter: VSWR < 1.029	1 piece of N-type male connector opener 1 piece of N-type female circuit breaker 1 piece of N-type male short-circuit protector 1 piece of N-type female short-circuit protector 1 piece of N-type female load 1 piece of N-type male load N(f)-N(f) adapter, 1 piece N(m)-N(m) adapter, 1 piece 1 piece of N(m)-N(f) adapter 1 N-type torque wrench
31121A	Coaxial calibration kit	DC~6GHz	Circuit breaker: $\pm 0.85^\circ$ Short circuit device: $\pm 0.55^\circ$ Fixed load: VSWR < 1.029 Adapter: VSWR < 1.04	3.5mm male header opener, 1 piece 3.5mm female open-circuit tool 1 piece 1 piece of 3.5mm male short-circuit protector 1 piece of 3.5mm female short circuit protector 3.5mm female load, 1 piece 3.5mm male load, 1 piece 3.5mm(f)-3.5mm(f) adapter, 1 piece 1 piece of 3.5mm(m)-3.5mm(m) adapter 1 piece of 3.5mm(m)-3.5mm(f) adapter 1 piece of N(m)-3.5mm(m) adapter 1 piece of N(m)-3.5mm(f) adapter 1 piece of N(f)-3.5mm(m) adapter 1 piece of N(f)-3.5mm(f) adapter 3.5mm torque wrench, 1 piece
31121C	Coaxial calibration kit	DC~6GHz	Circuit breaker: $\pm 0.85^\circ$ Short circuit device: $\pm 0.65^\circ$ Fixed load: VSWR $\leq 1.029$ Adapter: VSWR $\leq 1.052$	3.5mm male header opener, 1 piece 1 piece of 3.5mm male short-circuit device 1 piece of 3.5mm male load 3.5mm(m)-3.5mm(m) adapter 1 option 3.5mm(m)-3.5mm(f) adapter 1 option 3.5mm(f)-3.5mm(f) adapter 1 option N(m)-3.5mm(m) adapter 1 option N(m)-3.5mm(f) adapter 1 option

## Technology

Model	Name	Frequency Range	Technical Specifications	Configuration List
31121B	Coaxial calibration kit	DC~6GHz	Circuit breaker: $\pm 0.85^\circ$ Short circuit device: $\pm 0.65^\circ$ Fixed load: VSWR $\leq 1.029$ Adapter: VSWR $\leq 1.052$	3.5mm female circuit breaker, 1 piece 3.5mm female short-circuit device, 1 piece 3.5mm female load, 1 piece 3.5mm(m)-3.5mm(m) adapter 1 option 3.5mm(m)-3.5mm(f) adapter 1 option 3.5mm(f)-3.5mm(f) adapter 1 option N(m)-3.5mm(m) adapter 1 option N(m)-3.5mm(f) adapter 1 option
20208	Coaxial calibration kit	50MHz~7.5GHz	Open-circuit device: $\pm 2.0^\circ$ (° 50MHz ~4GHz) $\pm 3.0^\circ$ (° 4GHz~7.5GHz) Short circuit device: $\pm 1.8^\circ$ (° at 50MHz to 4GHz) $\pm 2.5^\circ$ (° 4GHz~7.5GHz) Fixed load: VSWR < 1.066 Adapter: VSWR < 1.066(50MHz~4GHz) VSWR < 1.18(4GHz~7.5GHz)	1 piece of 7/16 male head circuit breaker One 7/16 female circuit breaker 1 piece of 7/16 type male short-circuit protector 1 piece of 7/16 female short-circuit device 1 piece of 7/16 female load terminal One piece of 7/16 male head load 1 piece of 7/16-KK adapter One 7/16-KJ adapter 7/16-JJ adapter, 1 piece
20201	Coaxial calibration kit	DC~9GHz	Circuit breaker: $\pm 1.2^\circ$ Short circuit device: $\pm 1.0^\circ$ Fixed load: VSWR < 1.029 Adapter: VSWR < 1.052	1 piece of N-type male connector opener 1 piece of N-type female circuit breaker 1 piece of N-type male short-circuit protector 1 piece of N-type female short-circuit protector 1 piece of N-type female load 1 piece of N-type male load N(f)-N(f) adapter, 1 piece N(m)-N(m) adapter, 1 piece 1 piece of N(m)-N(f) adapter 1 piece of N-type torque wrench
20201A	Coaxial calibration kit	DC~9GHz	Circuit breaker: $\pm 1.2^\circ$ Short-circuit device: $\pm 1.0^\circ$ Fixed load: VSWR < 1.029	N-type 50 $\Omega$ T-type male calibration piece
20201B	Coaxial calibration kit	DC~9GHz	Circuit breaker: $\pm 1.2^\circ$ Short circuit device: $\pm 1.0^\circ$ Fixed load: VSWR < 1.029	N-type 50 $\Omega$ T-type female calibrator
20202	Coaxial calibration kit	DC~9GHz	Circuit breaker: $\pm 1.0^\circ$ Short circuit device: $\pm 0.85^\circ$ Fixed load: VSWR < 1.029 Adapter: VSWR < 1.052	3.5mm male header opener, 1 piece 3.5mm female open-circuit tool, 1 piece 1 piece of 3.5mm male short-circuit protector 1 piece of 3.5mm female short-circuit device 3.5mm female load, 1 piece 3.5mm male load, 1 piece 3.5mm(f)-3.5mm(f) adapter, 1 piece 1 piece of 3.5mm(m)-3.5mm(m) adapter 1 piece of 3.5mm(m)-3.5mm(f) adapter 1 piece of N(m)-3.5mm(m) adapter 1 piece of N(m)-3.5mm(f) adapter 1 piece of N(f)-3.5mm(m) adapter 1 piece of N(f)-3.5mm(f) adapter One 3.5mm torque wrench
20202A	Coaxial calibration kit	DC~9GHz	Circuit breaker: $\pm 0.85^\circ$ Short circuit breaker: $\pm 0.65^\circ$ Fixed load: VSWR $\leq 1.029$ Adapter: VSWR $\leq 1.041$	3.5mm female open-circuit tool, 1 piece 1 piece of 3.5mm female short-circuit protector 3.5mm female load, 1 piece 1 piece of 3.5mm(f)-3.5mm(f) adapter

## Technology

Model	Name	Frequency Range	Technical Specifications	Configuration List
20202B	Coaxial calibration kit	DC~9GHz	Circuit breaker: $\pm 1.00^\circ$ Short circuit device: $\pm 0.85^\circ$ Fixed load: $VSWR \leq 1.029$ Adapter: $VSWR \leq 1.041$	3.5mm male open-circuit tool, 1 piece 1 piece of 3.5mm male short-circuit protector 3.5mm male load, 1 piece 1 piece of 3.5mm(m)-3.5mm(m) adapter
31101	Coaxial calibration kit	DC~18GHz	Circuit breaker: $\pm 1.5^\circ$ Short circuit interrupter: $\pm 1.0^\circ$ Fixed load: $VSWR < 1.055$ Adapter: $VSWR < 1.083$	1 piece of N-type male disconnecter 1 piece of N-type female circuit breaker 1 piece of N-type male short-circuit protector 1 piece of N-type female short-circuit protector 1 piece of N-type female load 1 piece of N-type male load N(f)-N(f) adapter, 1 piece N(m)-N(m) adapter, 1 piece 2 pieces of 7mm-N type male adapters 2 pieces of 7mm-N female adapters 1 piece of N-type torque wrench 1 piece of hook wrench
31101A	Coaxial calibration kit	DC~18GHz	Circuit breaker: $\pm 1.5^\circ$ Short circuit breaker: $\pm 1.0^\circ$ Fixed load: $VSWR < 1.055$	N-type 50 $\Omega$ T-type male calibration piece
31101B	Coaxial calibration kit	DC~18GHz	Circuit breaker: $\pm 1.5^\circ$ Short circuit breaker: $\pm 1.0^\circ$ Fixed load: $VSWR < 1.055$	N-type 50 $\Omega$ T-type female calibrator
31111	Coaxial calibration kit	DC~18GHz	Circuit breaker: $\pm 0.5^\circ$ Short circuit breaker: $\pm 0.5^\circ$ Fixed load: $VSWR < 1.04$	1 piece of 7mm circuit breaker One 7mm short-circuit protector One piece with a load capacity of 7mm 1 piece of N-type torque wrench
31101MA	Coaxial calibration kit	50MHz~18GHz	Circuit breaker: $\pm 3.0^\circ$ Short circuit interrupter: $\pm 2.5^\circ$ Fixed load: $VSWR \leq 1.08$ Adapter: $VSWR \leq 1.1$	N-type male connector Y-type calibration piece
31101MB	Coaxial calibration kit	50MHz~18GHz	Circuit breaker: $\pm 3.0^\circ$ Short circuit interrupter: $\pm 2.5^\circ$ Fixed load: $VSWR \leq 1.08$ Adapter: $VSWR \leq 1.1$	N-type female Y-type calibration piece
31121	Coaxial calibration kit	DC~26.5GHz	Circuit breaker: $\pm 1.5^\circ$ Short circuit breaker: $\pm 1.5^\circ$ Fixed load: $VSWR < 1.041$ Adapter: $VSWR < 1.106$	3.5mm male connector opener, 1 piece 3.5mm female open-circuit tool, 1 piece 1 piece of 3.5mm male short-circuit device 1 piece of 3.5mm female short-circuit device 3.5mm female load, 1 piece 1 piece of 3.5mm male load 1 piece of 3.5mm(f)-3.5mm(f) adapter 1 piece of 3.5mm(m)-3.5mm(m) adapter 1 piece of 3.5mm(m)-3.5mm(f) adapter 3.5mm torque wrench, 1 piece
31121MA	Coaxial calibration kit	50MHz~26.5GHz	Circuit breaker: $\pm 2.0^\circ$ Short circuit breaker: $\pm 2.0^\circ$ Fixed load: $VSWR \leq 1.065$ Adapter: $VSWR \leq 1.12$	3.5mm male Y-shaped calibration piece
31121MB	Coaxial calibration kit	50MHz~26.5GHz	Circuit breaker: $\pm 2.0^\circ$ Short circuit breaker: $\pm 2.0^\circ$ Fixed load: $VSWR \leq 1.065$ Adapter: $VSWR \leq 1.12$	3.5mm female Y-shaped calibration piece
31121MC	Coaxial calibration kit	50MHz~26.5GHz	Circuit breaker: $\pm 2.0^\circ$ Short circuit breaker: $\pm 2.0^\circ$ Fixed load: $VSWR \leq 1.065$	3.5mm male T-shaped calibration piece

## Technology

Model	Name	Frequency Range	Technical Specifications	Configuration List
31121MD	Coaxial calibration kit	50MHz~26.5GHz	Circuit breaker: $\pm 2.0^\circ$ Short circuit device: $\pm 2.0^\circ$ Fixed load: $VSWR \leq 1.065$	3.5mm female T-shaped calibration piece
20209FB	Coaxial calibration kit	DC~40GHz	Circuit breaker: $\pm 2.0^\circ$ Circuit breaker: $\pm 2.0^\circ$ Fixed load: $VSWR \leq 1.07$ Adapter: $VSWR \leq 1.12$	2.92mm male header opener, 1 piece 2.92mm female open-circuit tool, 1 piece 1 piece of 2.92mm male header short-circuit protector 1 piece of 2.92mm female short-circuit device 2.92mm female load, 1 piece 2.92mm male load, 1 piece One 2.92mm(f)-2.92mm(f) adapter 1 piece of 2.92mm(m)-2.92mm(m) adapter 1 piece of 2.92mm(m)-2.92mm(f) adapter One 3.5mm torque wrench
20206MA	Coaxial calibration kit	100MHz~40GHz	Circuit breaker: $\pm 6.0^\circ$ Short circuit breaker: $\pm 4.5^\circ$ Fixed load: $VSWR \leq 1.17$ Adapter: $VSWR \leq 1.15$	2.92mm male Y-shaped calibration piece
20206MB	Coaxial calibration kit	100MHz~40GHz	Circuit breaker: $\pm 6.0^\circ$ Short circuit breaker: $\pm 4.5^\circ$ Fixed load: $VSWR \leq 1.17$ Adapter: $VSWR \leq 1.15$	2.92mm female Y-shaped calibration piece
20206MC	Coaxial calibration kit	100MHz~40GHz	Circuit breaker: $\pm 6.0^\circ$ Circuit breaker: $\pm 4.5^\circ$ Fixed load: $VSWR \leq 1.17$	2.92mm male T-shaped calibration piece
20206MD	Coaxial calibration kit	100MHz~40GHz	Circuit breaker: $\pm 6.0^\circ$ Circuit breaker: $\pm 4.5^\circ$ Fixed load: $VSWR \leq 1.17$	2.92mm female T-shaped calibration piece
31123A	Coaxial calibration kit	DC~50GHz	Circuit breaker: $\pm 2.25^\circ$ Circuit breaker: $\pm 2.0^\circ$ Fixed load: $VSWR < 1.106$ Adapter: $VSWR < 1.222$	2.4mm male header opener, 1 piece 2.4mm female circuit breaker, 1 piece 1 piece of 2.4mm male short-circuit protector 1 piece of 2.4mm female short-circuit device 1 piece of 2.4mm female load 2.4mm male load, 1 piece 1 piece of 2.4mm(f)-2.4mm(f) adapter 1 piece of 2.4mm(m)-2.4mm(m) adapter 1 piece of 2.4mm(m)-2.4mm(f) adapter One 3.5mm torque wrench
20209LA	Coaxial calibration kit	10MHz~67GHz	Circuit breaker: $\pm 3.0^\circ$ Short circuit breaker: $\pm 2.5^\circ$ Fixed load: $VSWR \leq 1.06$ (10MHz~35GHz) Adapter: $VSWR \leq 1.23$	1.85mm male header opener, 1 piece 1.85mm female circuit breaker, 1 piece 1.85mm male short-circuit protector, 1 piece each for 1, 2, 3, and 4 1.85mm female short-circuit protector, 1 piece each for 1, 2, 3, and 4 1.85mm female load, 1 piece 1 piece of 1.85mm male load 1.85mm(f)-1.85mm(f) adapter, 1 piece 1.85mm(m)-1.85mm(m) adapter, 1 piece 1.85mm(m)-1.85mm(f) adapter, 1 piece One 3.5mm torque wrench

## Technology

Model	Name	Frequency Range	Technical Specifications	Configuration List
20209LB	Coaxial calibration kit	DC~67GHz	Circuit breaker: $\pm 3.0^\circ$ Circuit breaker: $\pm 2.5^\circ$ Fixed load: $VSWR \leq 1.12$ Adapter: $VSWR \leq 1.23$	1.85mm male open-circuit tool, 1 piece 1.85mm female open-circuit tool, 1 piece 1 piece of 1.85mm male short-circuit protector 1.85mm female short circuit device, 1 piece 1.85mm female load, 1 piece 1.85mm male load, 1 piece 1.85mm(f)-1.85mm(f) adapter, 1 piece 1.85mm(m)-1.85mm(m) adapter, 1 piece 1.85mm(m)-1.85mm(f) adapter, 1 piece 3.5mm torque wrench, 1 piece
20209QA	Coaxial calibration kit	DC~120GHz	Circuit breaker: $\pm 8.0^\circ$ Circuit breaker: $\pm 5.5^\circ$ Fixed load: $VSWR \leq 1.14$ (10MHz~50GHz) Adapter: $VSWR \leq 1.38$	1.0mm male header opener, 1 piece 1.0mm female circuit breaker, 1 piece 1.0mm male short-circuit protector, 1 piece each for 1, 2, 3, 4 1.0mm female short-circuit protector, 1 piece each for 1, 2, 3, and 4 1.0mm female load, 1 piece 1.0mm male load, 1 piece 1 piece of J-K adapter 1 piece of J-J adapter 1 piece of K-K adapter 1.0mm card wrench, 1 piece 1.0mm torque wrench, 1 piece

Note 1: The technical specifications of DC-10MHz are based on 10MHz and have not been tested separately.

Note 2: The phase shift of circuit breakers and short-circuiters indicates the phase shift relative to the standard component

## Order Information

20204	DC~3GHz calibration piece	31111	DC~18GHz calibration piece
20205	DC~3GHz calibration piece	31101MA	50MHz~18GHz Y-type male calibration piece
20207	DC~3GHz T-type male connector calibration piece	31101MB	50MHz~18GHz Y-type female calibrator
20207A	DC~3GHz T-type female calibrator	31121	DC~26.5GHz calibration piece
31104	DC~6GHz calibration kit	31121MA	50MHz~26.5GHz Y-type male calibration piece
31121A	DC~6GHz calibration piece	31121MB	50MHz~26.5GHz Y-type female calibrator
31121B	DC~6GHz calibration piece	31121MC	50MHz~26.5GHz T-type male connector calibration piece
31121C	DC~6GHz calibration kit	31121MD	50MHz~26.5GHz T-type female calibrator
20208	Calibration piece for 50MHz~7.5GHz	20206MA	100MHz~40GHz Y-type male connector calibration piece
20201	DC~9GHz calibration piece	20206MB	100MHz~40GHz Y-type female calibrator
20201A	DC~9GHz T-type male connector calibration piece	20206MC	100MHz~40GHz T-type male connector calibration piece
20201B	DC~9GHz T-type female calibrator	20206MD	100MHz~40GHz T-type female calibrator
20202	DC~9GHz calibration piece	20209FB	DC~40GHz calibration piece
20202A	DC~9GHz calibration piece	31123A	DC~50GHz calibration piece
20202B	DC~9GHz calibration piece	20209LA	Calibration kit for 10MHz~67GHz
31101	DC~18GHz calibration piece	20209LB	DC~67GHz calibration piece
31101A	DC~18GHz T-type male connector calibration piece	20209QA	DC~120GHz calibration piece
31101B	DC~18GHz T-type female calibrator		