



2040X Series Electronic Calibration Kits



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Product Overview

2040X series electronic calibration module includes 5 models of 20402/ 20403/ 20404/ 20405/ 20409, covering the frequency ranges of 300kHz~18GHz/10MHz~26.5GHz/45MHz~40GHz/10MHz~20GHz/10MHz~67GHz. The interface forms include type N 2-port/3.5mm 2-port/2.4mm 2-port/3.5mm 4-port/1.85mm 2-port. The electronic calibration module can use USB interface for communication and power supply and are applicable to the calibration and error correction of 3672 series, 3656 series VNA. It is also compatible with the ENA and PNA series vector network analyzer of Keysight.

Main Features

Compared to the mechanical calibration kits, the electronic calibration kits have the advantages of convenient connection, fast calibration speed, low artificial error, low loss, comparable precision and male and female connector.

Typical Applications:

Can be applied in most cases where mechanical calibration kits can be used.

Technical Specifications:

1. Specifications

20402 Electronic calibration module

Parameters	Frequency range			
	300kHz-500MHz	500MHz-2GHz	2GHz-10GHz	10GHz-18GHz
Directivity (dB)	≥36	≥43	≥39	≥36
Source match (dB Min)	≥30	≥38	≥34	≥30
Load match (dB)	≥26dB	≥37dB	≥35dB	≥33
Transmission tracking (dB)	≤0.07	≤0.08	≤0.09	≤0.10
Reflection tracking (dB)	≤0.06	≤0.07	≤0.08	≤0.10
Max input power(dBm)	+10			

20403 Electronic calibration module

Parameters	Frequency range				
	10MHz— 500MHz	500MHz— 2GHz	2GHz— 10GHz	10GHz— 20GHz	20GHz— 26.5GHz
Directivity (dB)	≥41	≥51	≥46	≥40	≥36
Source match (dB)	≥35	≥41	≥38	≥37	≥33
Load match (dB)	≥31	≥38	≥45	≥40	≥36
Transmission tracking (dB)	≤0.07	≤0.08	≤0.08	≤0.10	≤0.14
Reflection tracking (dB)	≤0.05	≤0.05	≤0.08	≤0.12	≤0.13
Max input power(dBm)	+10				

20404 Electronic calibration module

Parameters	Frequency range				
	10MHz— 2GHz	2GHz— 10GHz	10GHz— 20GHz	20GHz— 40GHz	40GHz— 50GHz
Directivity (dB)	≥45	≥43	≥40	≥37	≥31
Source match (dB)	≥37	≥34	≥31	≥30	≥32
Load match (dB)	≥39	≥36	≥35	≥33	≥32
Transmission tracking (dB)	≤0.06	≤0.08	≤0.09	≤0.12	≤0.15
Reflection tracking (dB)	≤0.07	≤0.09	≤0.12	≤0.16	≤0.25
Max input power (dBm)	+10				

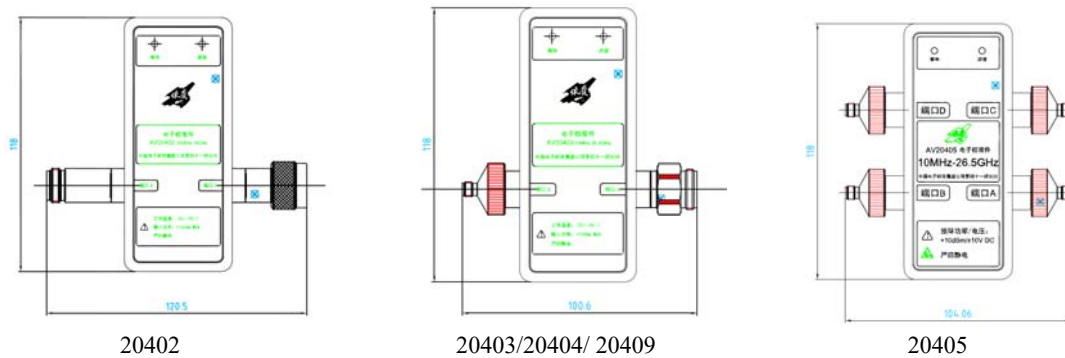
20405 Electronic calibration module

Parameters	Frequency range			
	10MHz—5GHz	5GHz—9GHz	9GHz—13.5GHz	13.5GHz—20GHz
Directivity (dB)	≥47	≥42	≥40	≥33
Source match (dB Min)	≥38	≥33	≥32	≥28
Load match (dB)	≥40	≥35	≥33	≥31
Transmission tracking (dB)	≤0.05	≤0.06	≤0.08	≤0.18
Reflection tracking (dB)	≤0.08	≤0.12	≤0.12	≤0.20
Max input power (dBm)	+10			

20409 Electronic calibration module

Parameters	Frequency range						
	10MHz— 2GHz	2GHz— 20GHz	20GHz— 30GHz	30GHz—4 0GHz	40GHz— 50GHz	50GHz— 60GHz	60GHz— 67GHz
Directivity (dB)	≥35	≥36	≥34	≥32	≥32	≥32	≥28
Source match (dB Min)	≥30	≥33	≥27	≥27	≥26	≥25	≥24
Load match (dB)	≥30	≥31	≥32	≥31	≥29	≥26	≥23
Transmission tracking (dB)	≤0.06	≤0.09	≤0.12	≤0.10	≤0.14	≤0.15	≤0.15
Reflection tracking (dB)	≤0.06	≤0.08	≤0.11	≤0.10	≤0.12	≤0.13	≤0.15
Max input power (dBm)	+10						

2. Dimensions



Note 1: The height of the above 2040X series electronic calibration modules are all 50mm.

Note 2: The unit is mm. The size of these calibration kits are subject to change without notice.

Ordering Information:

(1) Main unit

Model	Frequency Range	Number of port	Connectors
20402	300kHz~18GHz	2	Type N (standard configuration is F/M, FF、MM is optional)
20403	10MHz~26.5GHz	2	3.5mm (standard configuration is F/M, FF、MM is optional)
20404	10MHz~50GHz	2	2.4mm (standard configuration is F/M, FF、MM is optional)
20405	10MHz~20GHz	4	3.5mm (standard configuration is FFFF)
20409	10MHz~67GHz	2	1.85mm (standard configuration is

			F/M, FF、MM is optional)
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(2) Standard configurations

No.	Name	Description
1	Electronic Calibration Module	The connector type will be standard, if there is no clear indication.
2	USB Cable	Length: 1.5m
3	User Manual/ Quick-start guide	---
4	Product certificate	---
5	Aluminum transit case	---

(3) Options

Option No.	Name	Functions
20402-001	N-50KK adaptor	Adaptor
20402-002	N-50JJ adaptor	Adaptor
20402-003	Type N torque wrench	To fix the connection
20402-004	8GB U disk	To store the drive and software kit
20402-005	20402 Up/down English label	
20403-001	3.5mm dual female adaptor	Adaptor
20403-002	3.5mm dual male adaptor	Adaptor
20403-003	SMA connector torque wrench	To fix the connection
20403-004	8GB U disk	To store the drive and software kit
20403-005	20403 Up/down English label	
20404-001	2.4mm dual female adaptor	Adaptor
20404-002	2.4mm dual male adaptor	Adaptor
20404-003	2.4mm connector torque wrench	To fix the connection
20404-004	8GB U disk	To store the drive and software kit
20404-005	20404 Up/down English label	
20405-001	3.5mm dual female adaptor	Adaptor
20405-002	3.5mm dual male adaptor	Adaptor
20405-003	SMA connector torque wrench	To fix the connection
20405-004	8GB U disk	To store the drive and software kit
20405-005	20405 Up/down English label	

	label	
20409-001	1.85mm dual female adaptor	Adaptor
20409-002	1.85mm dual male adaptor	Adaptor
20409-003	SMA connector torque wrench	To fix the connection
20409-004	8GB U disk	To store the drive and software kit
20409-005	20409 Up/down English label	

Ce/year

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