

## Type-N (50 ohms)

### 85092C (RF)

Frequency range	300 kHz to 1 GHz	1 to 3 GHz	3 to 6 GHz	6 to 9 GHz
Directivity (dB)	52	54	52	47
Source match (dB)	45	44	41	36
Reflection tracking ( $\pm$ dB)	0.04	0.04	0.06	0.07
Transmission tracking ( $\pm$ dB)	0.04	0.04	0.07	0.14
Load match (dB)	47	47	44	39

### N4690A (microwave)

Frequency range	10 to 45 MHz, typical	45 MHz to 2 GHz	2 to 10 GHz	10 to 18 GHz
Directivity (dB)	31	48	46	44
Source match (dB)	25	43	40	.37
Reflection tracking ( $\pm$ dB)	0.05	0.03	0.03	0.04
Transmission tracking ( $\pm$ dB)	0.10	0.07	0.07	0.10
Load match (dB)	24	42	41	40

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## Type-N (75 ohms)

### 85096C (RF)

Frequency range	300 kHz to 300 MHz	300 MHz to 1 GHz	1 to 3 GHz
Directivity (dB)	50	48	43
Source match (dB)	48	45	38
Reflection tracking ( $\pm$ dB)	0.03	0.06	0.10
Transmission tracking ( $\pm$ dB)	0.08	0.09	0.16
Load match (dB)	43	41	39

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## 3.5 mm<sup>1</sup>

### 85093C (RF)

Frequency range	300 kHz to 1 GHz	1 to 3 GHz	3 to 6 GHz	6 to 9 GHz
Directivity (dB)	52	52	50.5	47
Source match (dB)	44	44	39	34
Reflection tracking ( $\pm$ dB)	0.03	0.03	0.05	0.07
Transmission tracking ( $\pm$ dB)	0.04	0.05	0.07	0.12
Load match (dB)	47	47	44	40

### N4691A (microwave)

Frequency range	10 to 45 MHz, typical	45 MHz to 2 GHz	2 to 10 GHz	10 to 20 GHz	20 to 26.5 GHz
Directivity (dB)	32	56	54	49	45
Source match (dB)	26	47	45	44	40
Reflection tracking ( $\pm$ dB)	0.05	0.02	0.03	0.03	0.04
Transmission tracking ( $\pm$ dB)	0.10	0.05	0.07	0.09	0.11
Load match (dB)	25	45	49	45	42

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1. 3.5 mm modules have precision slotless connectors that guarantee the best calibration accuracy is transferred to your system.

## Ordering information

Select an ECal module based on the connector type required and the frequency range of your vector network analyzer (refer to table below).

### Notes:

1. Order the 85097B interface module if you will be using ECal with your 8719, 8720, 8722 or 8753. (Please reference the ECal and network analyzer/firmware compatibility table on page 3.) The 85097B consists of an interface module and a power supply.
2. When using the N469x ECal products with the 8720 or 8753 network analyzer families, an adapter cable (8121-1047) is needed. This adapter cable is orderable as an option with the 85097B ECal.

## ECal modules and available options <sup>1,2</sup>

### 2-port

Connector Type	Frequency range	ECal module model number	Available options
Type-F	300 kHz to 3 GHz	<b>85099C</b>	00A, 00F, 00M, UK6, M0F
Type-N 50 ohms	300 kHz to 9 GHz	<b>85092C</b>	00A, 00F, 00M, UK6, M0F, mixed connectors
Type-N 50 ohms	10 MHz to 18 GHz	<b>N4690A</b>	00A, 00F, 00M, UK6, M0F
Type-N 75 ohms	300 kHz to 3 GHz	<b>85096C</b>	00A, 00F, 00M, UK6, M0F
3.5 mm	300 kHz to 9 GHz	<b>85093C</b>	00A, 00F, 00M, UK6, M0F, mixed connectors
3.5 mm	10 MHz to 26.5 GHz	<b>N4691A</b>	00A, 00F, 00M, UK6, M0F
7 mm	300 kHz to 9 GHz	<b>85091C</b>	UK6
7 mm	10 MHz to 18 GHz	<b>N4696A</b>	UK6
7-16	300 kHz to 7.5 GHz	<b>85098C</b>	00A, 00F, 00M, UK6, M0F, mixed connectors
2.92 mm	10 MHz to 40 GHz	<b>N4692A</b>	00A, 00F, 00M, UK6, M0F
2.4 mm	10 MHz to 50 GHz	<b>N4693A</b>	00A, 00F, 00M, UK6, M0F
1.85 mm	10 MHz to 67 GHz	<b>N4694A</b>	00A, 00F, 00M, UK6, M0F

### 4-port

Connector Type	Frequency range	ECal module model number	Available options
3.5 mm or Type-N 50 ohms	300 kHz to 9 GHz	<b>N4431A</b>	010, 020, UK6, mixed connectors

## Options

Option	Description
<b>00F</b>	Replace f-m connectors on ECal module(s) with f-f connectors
<b>00M</b>	Replace f-m connectors on ECal module(s) with m-m connectors
<b>00A</b>	Adds male-to-male and female-to-female adapters (also adds a 5/16" 90 N-cm (8 in-lb) torque wrench to 3.5 mm modules)
<b>UK6</b>	Commercial calibration certificate with measured data
<b>M0F</b>	f-m connectors on ECal module(s)
<b>010</b>	Four female, 3.5 mm connectors
<b>020</b>	Four female, Type-N 50 ohm connectors

1. N469x series modules cover a frequency range of 10 MHz up to 67 GHz. The upper frequency is limited by the connector cutoff frequency. Each module is supplied with a torque wrench and foam-padded wood storage box.
2. 85090 series modules cover a frequency range of 300 kHz to 3 GHz, 7.5 GHz or 9 GHz. Each module is supplied with a torque wrench and foam-padded wood storage box.

## Mixed connector options

### 2-port (85092C/3C/8C ECal modules only)

Model number	Port A option			Port B option					
	Type	(f)	(m)	Type	(f)	(m)	Type	(f)	(m)
85092C	Type-N 50 ohm	103	104	3.5 mm	201	202	7-16 <sup>1</sup>	205	206
85093C	3.5 mm	101	102	Type-N 50 ohm	203	204	7-16 <sup>1</sup>	205	206
85098C	7-16 <sup>1</sup>	105	106	3.5 mm	201	202	Type-N 50 ohm	203	204

### 4-port (N4431A ECal module only)

Connector type	Port A option	Port B option	Port C option	Port D option
3.5 mm (f)	101	201	301	401
3.5 mm (m)	102	202	302	402
Type-N 50 ohm (f)	103	203	303	403
Type-N 50 ohm (m)	104	204	304	404
7-16 (f) <sup>1</sup>	105	205	305	405
7-16 (m) <sup>1</sup>	106	206	306	406

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1. Limits ECal module high frequency to 7.5 GHz.