FLEX TEST™

Test Cable

CBL-1.5M-SMNM+

50Ω 1.5M DC to 18 GHz SMA Male to N Type-Male

FEATURES

- Wideband Coverage, DC to 18 GHz
- Extra Rugged Construction with Strain Relief for Longer Life
- Stainless Steel Connectors for Long Mating-cycle Life
- Useful Over Temperature Range, -55 °C to +105 °C
- Triple Shield Cable for Excellent Shielding Effectiveness
- Flexible for Easy Connection & Bend Radius
- Superior Stability of Insertion Loss, VSWR & Phase vs. Flexing
- 6 Month Guarantee*



Generic photo used for illustration purposes only

Model No.	CBL-1.5M-SMNM+
Case Style	GM1105-4.92
Connectors	SMA Male to N-Type Male

+RoHS Compliant
The +Suffix identifies RoHS Compliance.
See our website for methodologies and qualifications

APPLICATIONS

- High Volume Production Test Stations
- Research & Development Labs
- Environmental & Temperature Test Chambers
- Replacement for OEM Test Port Cables
- Field RF Testing
- Cellular Infrastructure Site Testing

ELECTRICAL SPECIFICATIONS AT +25 °C

Parameter	Frequency (GHz)	Min.	Typ.	Max.	Units
Frequency Range		DC		18	GHz
Length[1]			1.5		M
Insertion Loss	DC - 2.5	—	0.9	1.1	dB
	2.5 - 6	—	1.6	2.0	
	6 - 12	—	2.5	2.9	
	12 - 18	—	3.2	3.8	
Return Loss	DC - 2.5	23	30	—	dB
	2.5 - 6	20	30	—	
	6 - 12	17	27	—	
	12 - 18	17	22	—	

1. Custom sizes available, consult factory.

ABSOLUTE MAXIMUM RATINGS[2]

Parameter	Ratings
Operating Temperature	-55 °C to +105 °C
Storage Temperature	-55 °C to +105 °C
Shielding Effectiveness	>100 dB
Power Handling at 25 °C	891 W Max. at 0.4 GHz 539 W Max. at 1 GHz 363 W Max. at 2 GHz 180 W Max. at 6 GHz 117 W Max. at 12 GHz 88 W Max. at 18 GHz

2. Permanent damage may occur if any of these limits are exceeded.

Product Guarantee*
Mini-Circuits® will repair or replace your test cable at its option if the connector attachment fails within six months of shipment. This guarantee excludes cable or connector interface damage from misuse or abuse.

REV. C
ECO-019501
CBL-1.5M-SMNM+
MCL NY
260511

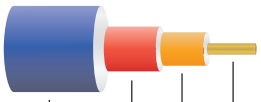
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CABLE CONSTRUCTION



Inner Conductor: Solid Silver Plated Copper Clad Steel

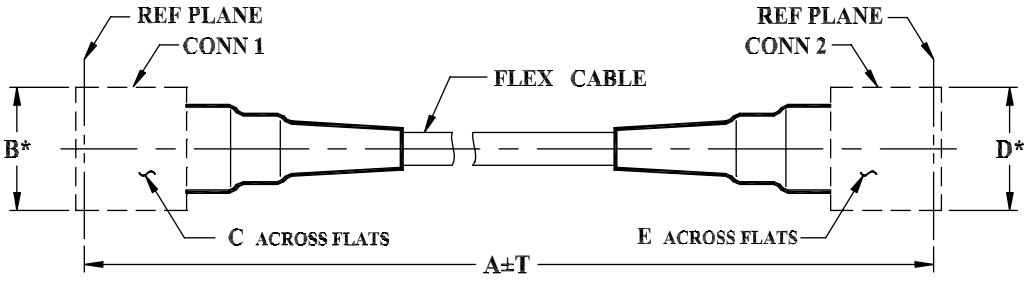
Dielectric: Solid PTFE

Shield: Silver-Plated Copper Flat Ribbon Braid
Aluminum-Polymide Tape Interlayer 36 GA
Silver-Plated Copper Braid (90%k)

Jacket: Blue FEP

Connectors:
- Passivated stainless steel
- Captive contact
- Thick wall interface
- Gold plated beryllium copper center contacts
- PTFE dielectric

OUTLINE DRAWING



*OVERALL CONNECTOR OR CABLE & BOOT DIMENSION
(CONNECTOR SHAPE MAY VARY)

OUTLINE DIMENSIONS (Inch / mm)

A		B	C	D	E	T		wt
Feet	Meters	0.42	0.312	0.88	.750	Feet	Meters	grams
4.92	1.50	10.67	7.92	22.35	19.05	0.15	0.05	152

FLEX TEST™

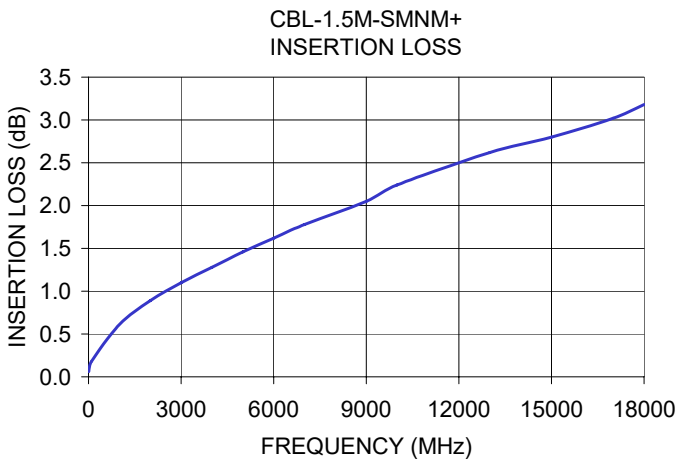
Test Cable

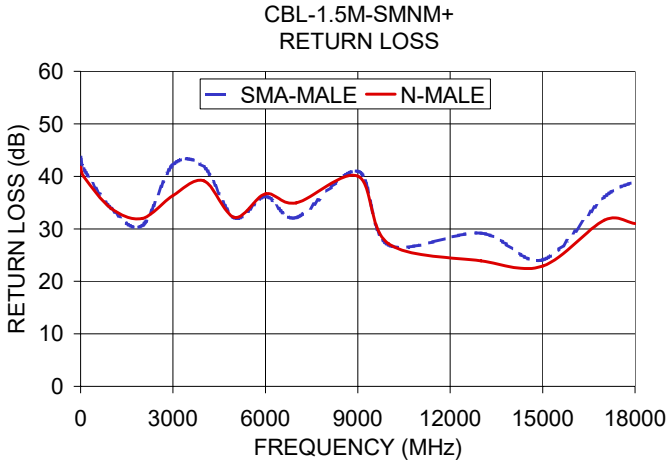
CBL-1.5M-SMNM+

50Ω 1.5M DC to 18 GHz SMA Male to N Type-Male

TYPICAL PERFORMANCE DATA

Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)	
		SMA Male	N-Type Male
10.00	0.06	43.61	41.74
100.00	0.18	41.39	39.93
1000.00	0.61	33.85	33.84
2000.00	0.89	30.61	31.98
3000.00	1.10	42.16	36.32
4000.00	1.28	41.79	39.16
5000.00	1.46	32.07	32.19
6000.00	1.62	36.15	36.67
7000.00	1.78	32.11	34.95
9000.00	2.05	40.97	40.05
10000.00	2.24	26.94	27.16
13000.00	2.62	29.16	23.88
15000.00	2.80	24.09	22.91
17000.00	3.02	36.04	31.68
18000.00	3.18	39.09	31.00





NOTES

A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.
C. The parts covered by this specification document are subject to Mini-Circuits' standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the standard terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/terms/viewterm.html

Test Cable, SMA-Male/N-Male CBL-1.5M-SMNM+

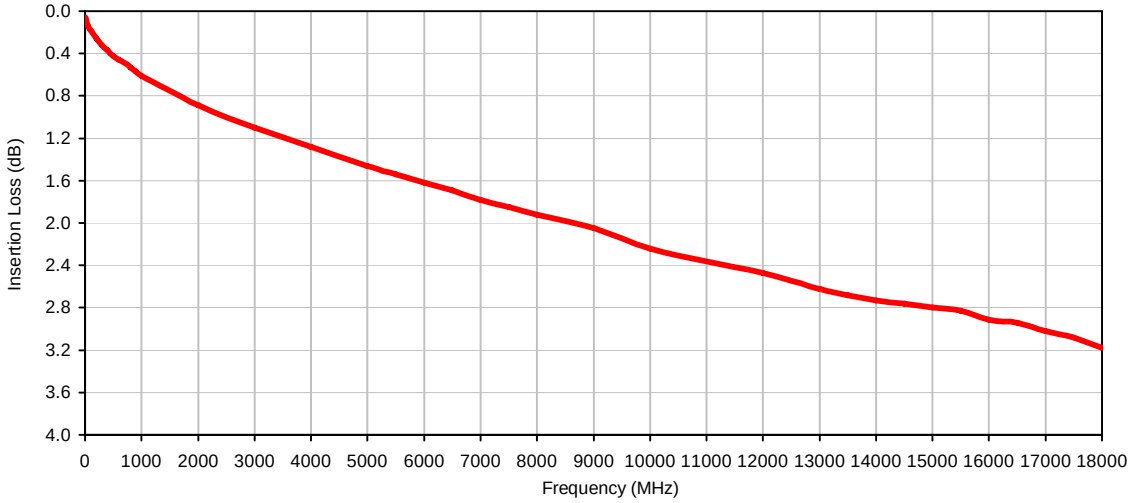
Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	SMA-MALE RETURN LOSS (dB)	N-MALE RETURN LOSS (dB)
10.0	0.06	43.61	41.74
50.0	0.13	42.47	43.47
100.0	0.18	41.39	39.93
200.0	0.26	37.88	37.79
300.0	0.32	48.04	42.16
400.0	0.37	36.21	36.84
500.0	0.42	36.33	36.03
600.0	0.46	42.24	42.54
700.0	0.49	33.44	33.89
800.0	0.53	42.92	42.72
900.0	0.57	32.24	33.75
1000.0	0.61	33.85	33.84
2000.0	0.89	30.61	31.98
3000.0	1.10	42.16	36.32
4000.0	1.28	41.79	39.16
5000.0	1.46	32.07	32.19
5500.0	1.54	34.69	38.00
6000.0	1.62	36.15	36.67
6500.0	1.69	33.55	33.87
7000.0	1.78	32.11	34.95
7500.0	1.85	29.74	30.11
8000.0	1.92	29.27	30.01
9000.0	2.05	40.97	40.05
10000.0	2.24	26.94	27.16
11000.0	2.36	25.85	27.43
12000.0	2.47	31.52	28.55
13000.0	2.62	29.16	23.88
13500.0	2.68	24.62	21.69
14000.0	2.73	22.99	21.19
14500.0	2.76	23.17	21.75
15000.0	2.80	24.09	22.91
15500.0	2.83	25.90	23.61
16000.0	2.91	30.35	27.75
16500.0	2.94	46.18	28.82
17000.0	3.02	36.04	31.68
17500.0	3.08	36.52	33.58
18000.0	3.18	39.09	31.00

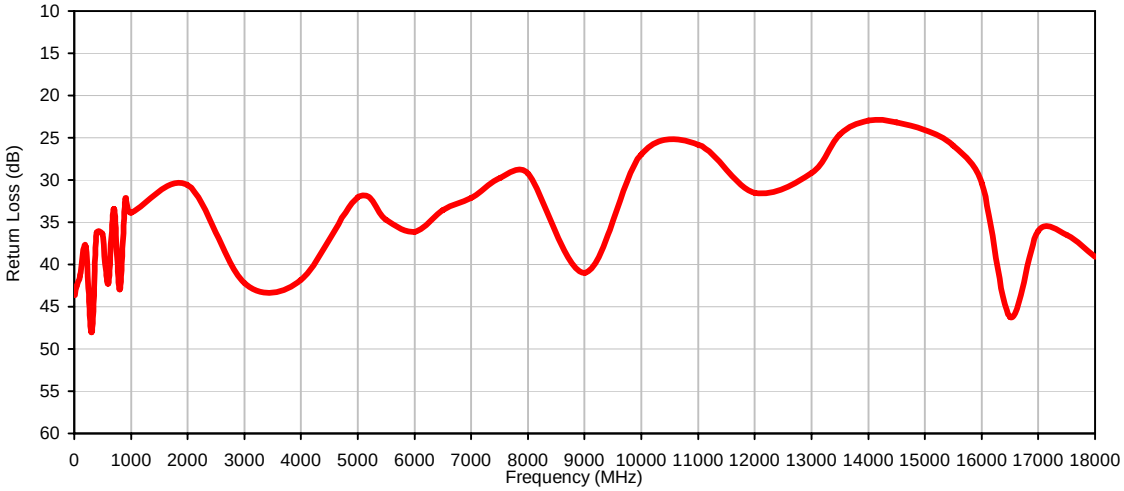
Test Cable, SMA-Male/N-Male CBL-1.5M-SMNM+

Typical Performance Curves

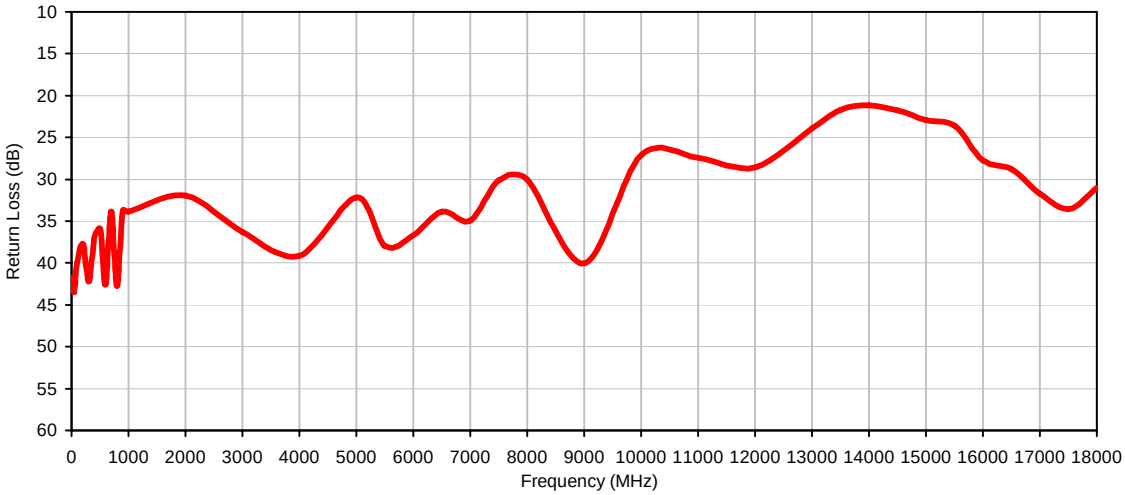
Insertion Loss



SMA-Male Return Loss



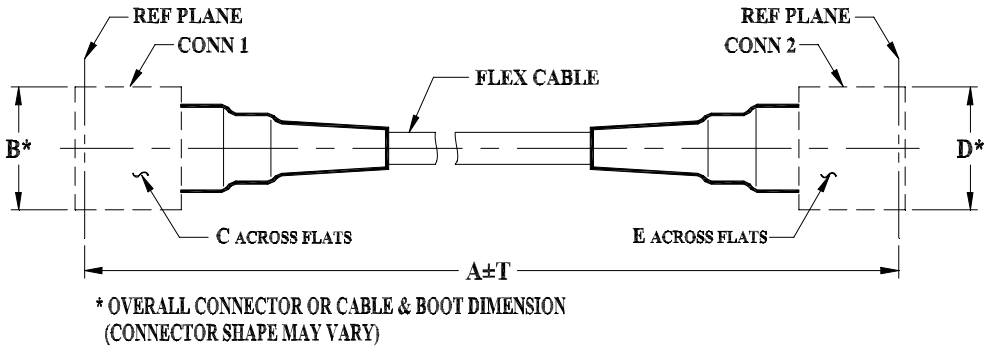
N-Male Return Loss



Case Style GM

GM1105

Outline Dimensions



GM1105 SERIES
SMA MALE (CONN-1)
N MALE (CONN-2)

CASE STYLE #	A		B	C	D	E	T		WEIGHT GRAMS
	FEET	METERS					FEET	METERS	
GM1105-1	1.00	.30	0.42 (10.67)	0.312 (7.92)	0.88 (22.35)	0.750 (19.05)	.06	.02	76
GM1105-1.15	1.15	.35					.06	.02	79
GM1105-1.25	1.25	.38					.06	.02	81
GM1105-1.5	1.50	.46					.06	.02	86
GM1105-1.64	1.64	.50					.06	.02	88
GM1105-2	2.00	.61					.06	.02	95
GM1105-3	3.00	.91					.09	.03	115
GM1105-3.28	3.28	1.00					.10	.03	120
GM1105-4	4.00	1.22					.12	.04	134
GM1105-4.92	4.92	1.50					.15	.05	152
GM1105-5	5.00	1.52					.15	.05	154
GM1105-6	6.00	1.83					.18	.05	173
GM1105-6.56	6.56	2.00					.20	.06	184
GM1105-7	7.00	2.13					.21	.06	193
GM1105-8	8.00	2.44					.24	.07	212
GM1105-9	9.00	2.74					.27	.08	232
GM1105-9.84	9.84	3.00					.30	.09	248
GM1105-10	10.00	3.05					.30	.09	251
GM1105-11	11.00	3.35					.33	.10	271

Unless otherwise specified dimensions are in inches (mm).
Tolerances: 2Pl. ± .03; 3Pl. ± .015

Note:
1. Flexible Coaxial Cable.
2. +.51 [13.00], -0 [0]

Mini-Circuits®
INTERNET http://www.minicircuits.com
P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661
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Case Style GM

GM1105 SERIES

SMA MALE (CONN-1)
N MALE (CONN-2)

CASE STYLE #	A		B	C	D	E	T		WEIGHT GRAMS
	FEET	METERS					FEET	METERS	
GM1105-12	12.00	3.66	0.42 (10.67)	0.312 (7.92)	0.88 (22.35)	0.750 (19.05)	.36	.11	290
GM1105-13.1	13.12	4.00					.39	.12	312
GM1105-14	14.00	4.27					.42	.13	329
GM1105-15	15.00	4.57					.45	.14	349
GM1105-16	16.00	4.88					.48	.15	368
GM1105-21	21.00	6.40					.63	.19	466
GM1105-22	22.00	6.71					.66	.20	485
GM1105-25	25.00	7.62					.75	.23	544
GM1105-35	35.00	10.67					1.05	.32	739
GM1105-39.4	39.37	12.00					1.18	.36	824
GM1105-40	40.00	12.19					1.20	.37	836

Unless otherwise specified dimensions are in inches (mm).
Tolerances: 2Pl. ± .03; 3Pl. ± .015

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Mini-Circuits

Environmental Specifications ENV34

All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-55° to 105°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 105°C Ambient Environment	Individual Model Data Sheet
Thermal Shock	-55° to 105°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except -105°C
Mechanical Flexing	20,000 cycles During each cycle, cable flexed from 90° through 0° to -90° and back with a Radii of 3 inches	- - -

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