COST-EFFECTIVE TEST CABLES DC TO 50 GHZ

Conformable® Test Assemblies

The Conformable® BJ cable family offers the option of a hand-formable replacement to Semi-Rigid cable with only a slight isolation and insertion loss penalty. Florida RF Labs' hand-formable cable assemblies are designed with a metal foil under the copper-tin composite shield for added connector strength and improved isolation.

Popular diameters are .047, .085 and .141 inches and typically cover test applications up to 18 GHz.

Connector interfaces for these cables are extensive, including: SMA, SMB, SMP, BMA, Type N, TNC, MCX, MMCX and BNC.

Mini-Flex Test Assemblies

The Mini-Flex family of cables offers a more flexible alternative to the Conformable cables and gives the user an FEP jacketed assembly while still providing excellent shielding during testing. These are also available with a monocoil jacket for increased durability and flexibility (pictured).

Cables are available in .105 and .165 inch diameters and can be used in test applications up to 50 GHz.

These cables can be manufactured using all of the connector interfaces listed above in the Conformable section. However, due to the extended frequency range they can also accommodate 2.4mm and 2.9mm connectors.

Standard RG Flexible Test Assemblies

The RG family of cables includes familiar military designations including: RG316, RD316, RG142, RG223 & RG400. These cables are typically used in applications no higher than 10 GHz due to losses and shielding limitations.

For higher shielding, higher frequency and lower loss applications, we offer SF316 and SF142 in this series. All assemblies can be supplied with our popular Extended Boot for increased durability.

Connector interfaces for these cables are extensive, including: SMA, SMB, SMP, BMA, Type N, TNC, MCX, MMCX and BNC. Others are available on request.

HIGH PERFORMANCE TEST CABLES
DC TO 65 GHz

Lab-Flex®

These high performance cables are high velocity, low loss, ePTFE dielectric cable with custom matched connectors which provide up to 40% lower loss than conventional cables. Custom braids provide superior mechanical strength and shielding greater than 90dB. These assemblies can be used as VNA test cables with a minimum of 500 mating cycles and prove to be very stable under flexure. Phase-matched pairs and sets are available upon request.

Lab-Flex® is available in many diameters to accommodate your electrical testing requirements in terms of frequency, performance and mechanical constraints. Current offering is Lab-Flex 100, 125, 160, 200, 290 & 335.

We offer the following connector interfaces for these cables: 2.4mm, 2.92mm, SMA, Type N, TNC and SC in various configurations. All are stainless steel construction.

Lab-Flex® S

These flexible cables are specifically designed with a stranded center conductor for applications where durability over repeated flexure is important. This new family of cables offers a wide variety of constructions including:

- Jacket materials – Polyurethane & FEP
- Dielectrics – ePTFE in both tape-wrapped and extruded
- Center Conductors – in 7 & 19 strand versions

There are currently 5 cable diameters available: .115", .180", .235", .335" & .490" covering frequencies up to 65 GHz.

Common connector interfaces such as SMA, Type N, TNC, 2.92mm and 1.85mm are offered.

ASR Test Port Assemblies

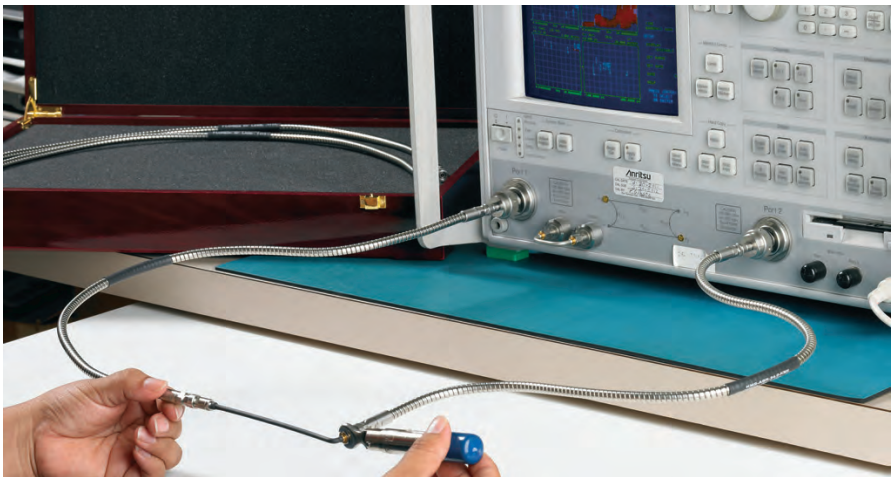
These high frequency assemblies are available individually, in pairs and phase-matched pairs as required.

They are manufactured using the finest materials currently available; durable interfaces for repeated matings, special low-loss cable construction for stability over temperature and entirely covered in stainless steel armor for long-lasting performance in your test environment.

The cable assemblies are available in standard 12", 18" and 24" lengths with your choice connectors: 2.92mm & 2.4mm male (plug), female (jack) and NMD female (jack) as well as Type N male and female interfaces.

ASR SERIES

High Performance *Analyzer Test Cables*



High-Performance VNA test cables - the ASR Series. These high frequency assemblies are available individually, in pairs and phase-matched pairs as needed. They are manufactured using the finest materials currently available; offering durable interfaces for repeated matings and special low-loss cable construction for stability over temperature. These high quality assemblies are protected by a stainless steel armor for long-lasting performance in your lab or production test environment.

Features

- *Designs up to 50 GHz*
- *Phase Stability over Temperature*
- *High Mating Cycles*
- *Low Loss Construction*
- *Superior Shielding Effectiveness*
- *Phased Matched Sets Available*
- *Available in Standard Lengths of 12, 18 and 24 Inches*

Applications

- *Production and Lab Testing*
- *Environmental Testing*

HIGH PERFORMANCE TEST CABLES			
MODEL Number	**Frequency**	**Connector # 1**	**Connector # 2**
1010	DC TO 40 GHz	2.9mm Plug	2.9mm Plug
1020	DC TO 40 GHz	2.9mm Plug	2.9mm Jack
1030	DC TO 40 GHz	2.9mm Plug	2.4mm Plug
1040	DC TO 40 GHz	2.9mm Plug	2.4mm Jack
3030	DC TO 50 GHz	2.4mm Plug	2.4mm Plug
3040	DC TO 50 GHz	2.4mm Plug	2.4mm Jack
4040	DC TO 50 GHz	2.4mm Jack	2.4mm Jack
5050	DC TO 18 GHz	Type N Plug	Type N Plug
5060	DC TO 18 GHz	Type N Plug	Type N Jack
6060	DC TO 18 GHz	Type N Jack	Type N Jack
0210	DC TO 40 GHz	NMD 2.9mm Jack	2.9mm Plug
0220	DC TO 40 GHz	NMD 2.9mm Jack	2.9mm Jack
0230	DC TO 40 GHz	NMD 2.9mm Jack	2.4mm Plug
0240	DC TO 40 GHz	NMD 2.9mm Jack	2.4mm Jack
0410	DC TO 40 GHz	NMD 2.4mm Jack	2.9mm Plug
0420	DC TO 40 GHz	NMD 2.4mm Jack	2.9mm Jack
0430	DC TO 50 GHz	NMD 2.4mm Jack	2.4mm Plug
0440	DC TO 50 GHz	NMD 2.4mm Jack	2.4mm Jack

PART NUMBERING CODE FOR ASR TEST CABLES

A S R - 1 0 1 0 - 1 2

PRODUCT
Analyzer Test Cable

MODEL
1010 = 2.9 Plug / 2.9 Plug
1020 = 2.9 Plug / 2.9 Jack
1030 = 2.9 Plug / 2.4 Plug
1040 = 2.9 Plug / 2.4 Jack
See above for standard list.

LENGTH (IN.)
Example:
12 = 12 inches
18 = 18 inches
24 = 24 inches

FREQUENCY BAND DESIGNATOR

FREQUENCY BANDS											
MILITARY RADAR	L	S	C	X	Ku	K	Ka			Mm	
QUICK FREQUENCY	4 GHz		12.4 GHz		18 GHz	30 GHz	35 GHz	40 GHz	45 GHz	60 GHz	
CABLE SELECTION GUIDE BY FREQUENCY SORTED BY MAX ATTENUATION & FAMILY (dB per 100 feet)											
LAB-FLEX® LOW-LOSS, FLEXIBLE											
Lab-Flex® 290	6.3	9.1	13.1	16.4	20.5						
Lab-Flex® 335	6.7	9.8	14.5	18.4	23.4						
Lab-Flex® 200	11.3	16.5	24.1	30.3	38.3	47.6					
Lab-Flex® 160	15.8	22.7	33.0	41.6	51.6	63.5	69.0	75.4	81.6		
Lab-Flex® 125	22.3	31.9	39.5	57.1	71.0	86.9	94.1	102.5	110.5	118.4	125.4
Lab-Flex® 100	29.2	42.8	63.3	80.2	102.1	128.0	140.0	154.3	168.1	181.3	219.0
NEW **LAB-FLEX® $ LOW-LOSS, FLEXIBLE, STRANDED CENTER CONDUCTOR**											
Lab-Flex® $ 490S	5.0	7.5	11.3	13.0							
Lab-Flex® $ 335SP	8.8	13.2	20.4	26.5	34.8						
Lab-Flex® $ 235SP	14.4	20.7	30.2	37.7	47.4	58.5					
Lab-Flex® $ 180SP	20.7	30.1	44.2	55.8	70.6	88.0	96.0	105.5	114.6		
Lab-Flex® $ 115S	35.7	51.3	74.1	92.4	115.5	141.9	153.9	168.0	181.5	194.3	230.1
SEMI-RIGID, LOW-LOSS											
.250 Low-Loss	7.0	10.0	14.2	17.6	21.8	34.0					
.141 Low-Loss	15.9	22.8	32.9	40.8	50.9	62.4	67.5	73.7			
.085 Low-Loss	28.3	40.3	57.6	71.2	88.1	107.0	115.5	125.5	134.8	143.7	168.1
SEMI-RIGID, CONFORMABLE® (BJ), FLEXIBLE VERSION (MINI-FLEX)											
.250 Series (RG401)	10.4	16.1	25.5	33.9	45.5						
.141 Series (RG402)	16.5	24.8	37.9	49.0	64.0	82.2	90.7	101.1			
Mini-Flex 165	17.2	25.7	39.1	50.6	65.9						
.085 Series (RG405)	27.9	40.8	60.5	76.7	97.9	123.0	134.6	148.5	161.8	174.7	199.4
Mini-Flex 105	30.6	44.6	66.0	83.4	106.1						
.047 Series	47.8	68.9	100.3	125.5	157.6	194.7	211.6	231.7	250.8	269.1	286.7
STANDARD FLEXIBLE											
SF142	18.0	26.8	40.7	52.5	68.3						
RG142	18.9	28.1	42.5								
142D	24.7	37.8	59.4	78.2	104.0						
SF316	37.3	54.1	79.4	99.8	126.3						
RD316	37.6	54.6	80.0	100.6							
316D	39.0	57.1									
LMR®											
LMR®-400	6.3	9.0	10.8								
LMR®-240	11.5	16.6	20.4								

Note: There are several versions of frequency band allocations and this chart should be used as reference only.
To select a cable first determine the maximum frequency the cable assembly needs to operate at. Cables under that frequency are listed by lowest (dB) attenuation first.