

DynaTest

Cable, Cable Assemblies, and Connectors



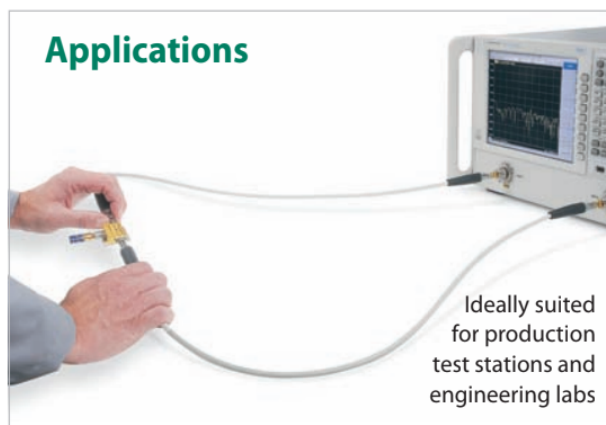
DynaTest™ series cable assemblies are designed to deliver repeatable, precision measurements while lowering your overall total cost. These assemblies offer exceptionally low VSWR and insertion loss characteristics across a broad frequency range. This allows a single DynaTest™ cable assembly to be used for the maximum number of measurement requirements. These assemblies are highly flexible, yet maintain phase stability to ensure repeat-ability without the need for recalibration.

DynaTest™ assemblies provide unique, high-value features not commonly found on other production test cables. The ruggedized mechanical design and high flexibility of these assemblies offer greater ease of use for test technicians and ensure long service life for your test application. DynaTest™ cable assemblies are available through Distribution to support your standard product requirements.

Capabilities

- Broadband performance up to 40 GHz
- Repeatable, phrase stable performance
- Low insertion loss and VSWR
- 100% RF tested
- Hex/knurl coupling nuts facilitate quick mating
- Stainless steel connectors
- Excellent strain relief at cable-connector junction

Applications



Standard DynaTest Assemblies

DynaTest cable assemblies are available in four standard connector combinations and lengths for rapid availability and ease of ordering

Part Number	Length	Frequency
DT-NN-024	24 inches (610 mm)	18.0 GHz
DT-NN-036	36 inches (914 mm)	18.0 GHz
DT-NN-048	48 inches (1,219 mm)	18.0 GHz

Part Number	Length	Frequency
DT-NS-024	24 inches (610 mm)	18.0 GHz
DT-NS-036	36 inches (914 mm)	18.0 GHz
DT-NS-048	48 inches (1,219 mm)	18.0 GHz

Part Number	Length	Frequency
DT-SS-024	24 inches (610 mm)	26.5 GHz
DT-SS-036	36 inches (914 mm)	26.5 GHz
DT-SS-048	48 inches (1,219 mm)	26.5 GHz

Part Number	Length	Frequency
DT-KK-024	24 inches (610 mm)	40.0 GHz
DT-KK-036	36 inches (914 mm)	40.0 GHz
DT-KK-048	48 inches (1,219 mm)	40.0 GHz

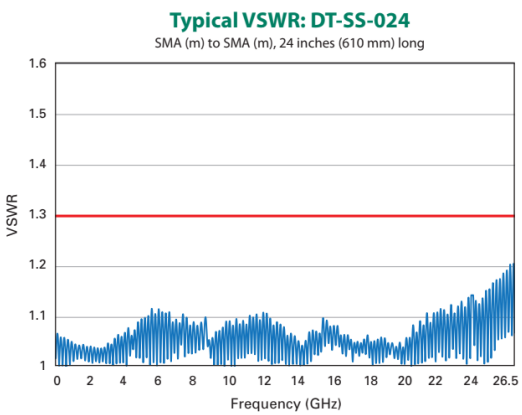
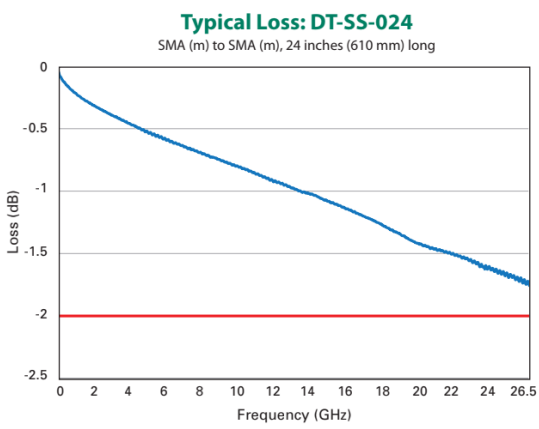
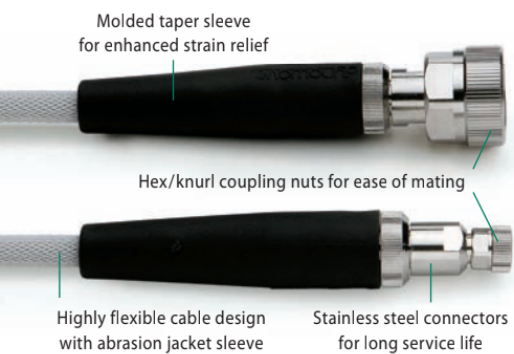
Custom Length DynaTest Assemblies

DynaTest cable assemblies are also available in different lengths to satisfy specific application requirements. Designate the required connector interface and the length as outlined below. Contact Dynawave for insertion loss specifications for custom lengths.

DT-XX-XXX

Cable assembly length in inches
Example: 72 inches = 072

Connector type:
NN = N (m) to N (m)
NS = N (m) to SMA (m)
SS = SMA (m) to SMA (m)
KK = 2.92 mm (m) to 2.92 mm (m)



General Specifications

Impedance	50 Ohms
Velocity of Propagation	76–80%
Temperature Range	–45°C to +85°C
Outer Cable Diameter (incl. sleeve)	0.24 inch (6.10 mm)
Minimum Bend Radius	1.25 inch (31.70 mm)
Flexure Life (5x min. bend radius)	>25,000
Recommended Mating Torque	
SMA/2.92 mm	9 in-lbs (1.0 Nm)
N	23 in-lbs (2.6 Nm)

Material And Finish

Cable Jacket	Polyurethane
Outer Cable Abrasion Sleeve	Polyester
Cable Dielectric	Fluoroplastic
Cable Center Conductor	Copper, Silver-plated
Taper Sleeves	PVC, black
Connector Housing	Stainless Steel Electro-polished
Connector Dielectric	PTFE
Connector Contacts	BeCu, gold-plated

Phase Stability v. Flexure (+/- deg.)

1 GHz	1.0°
3 GHz	1.2°
6 GHz	1.4°
12 GHz	1.9°
18 GHz	2.3°
26.5 GHz	3.0°
40 GHz	5.2°

VSWR and Insertion Loss Specifications

	N (m) to N (m)			N (m) to SMA (m)		
	DT- NN-024	DT- NN-036	DT- NN-048	DT- NN-024	DT- NN-036	DT- NN-048
Operating Frequency	18 GHz	18 GHz	18 GHz	18 GHz	18 GHz	18 GHz
VSWR (max)						
DC-18 GHz	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1
18-26.5 GHz	NA	NA	NA	NA	NA	NA
26.5-40 GHz	NA	NA	NA	NA	NA	NA
Intersection Loss (max @25°C)						
1 GHz	0.40 dB	0.50 dB	0.60 dB	0.40 dB	0.50 dB	0.60 dB
3 GHz	0.60 dB	0.80 dB	1.00 dB	0.60 dB	0.80 dB	1.00 dB
6 GHz	0.80 dB	1.10 dB	1.40 dB	0.80 dB	1.10 dB	1.40 dB
12 GHz	1.20 dB	1.60 dB	2.00 dB	1.20 dB	1.60 dB	2.00 dB
18 GHz	1.50 dB	2.00 dB	2.60 dB	1.50 dB	2.00 dB	2.60 dB
26.5 GHz	NA	NA	NA	NA	NA	NA
40 GHz	NA	NA	NA	NA	NA	NA

VSWR and Insertion Loss Specifications

	SMA (m) to SMA (m)			2.92 mm (m) to 2.92 mm (m)		
	DT- SS-024	DT- SS-036	DT- SS-048	DT- KK-024	DT- KK-036	DT- KK-048
Operating Frequency	26.5 GHz	26.5 GHz	26.5GHz	40 GHz	40 GHz	40 GHz
VSWR (max)						
DC-18 GHz	1.25:1	1.25:1	1.325:1	NA	NA	NA
18-26.5 GHz	1.30:1	1.30:1	1.30:1	NA	NA	NA
26.5-40 GHz	NA	NA	NA	1.50:1	1.50:1	1.50:1
Intersection Loss (max @25°C)						
1 GHz	0.40 dB	0.50 dB	0.60 dB	0.63 dB	0.82 dB	1.01 dB
3 GHz	0.60 dB	0.80 dB	1.00 dB	0.94 dB	1.28 dB	1.61 dB
6 GHz	0.80 dB	1.10 dB	1.40 dB	1.27 dB	1.75 dB	2.24 dB
12 GHz	1.20 dB	1.60 dB	2.00 dB	1.77 dB	2.48 dB	3.20 dB
18 GHz	1.50 dB	2.00 dB	2.60 dB	2.18 dB	3.08 dB	3.98 dB
26.5 GHz	2.00 db	2.70 dB	3.40 dB	2.70 dB	3.82 dB	4.94 dB
40 GHz	NA	NA	NA	3.42 dB	4.85 dB	6.27 dB

DynaTest HD Assemblies

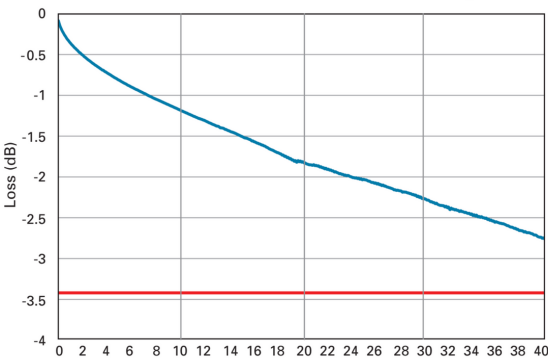
DynaTest HD Cable assemblies are available in two standard connector combinations and lengths for rapid availability and ease of ordering.

Part Number	Length	Frequency
DTHD-SS-024	24 inches (610 mm)	26.5 GHz
DTHD-SS-036	36 inches (914 mm)	26.5 GHz
DTHD-SS-048	48 inches (1,219 mm)	26.5 GHz

Part Number	Length	Frequency
DTHD-KK-024	24 inches (610 mm)	40.0 GHz
DTHD-KK-036	36 inches (914 mm)	40.0 GHz
DTHD-KK-048	48 inches (1,219 mm)	40.0 GHz

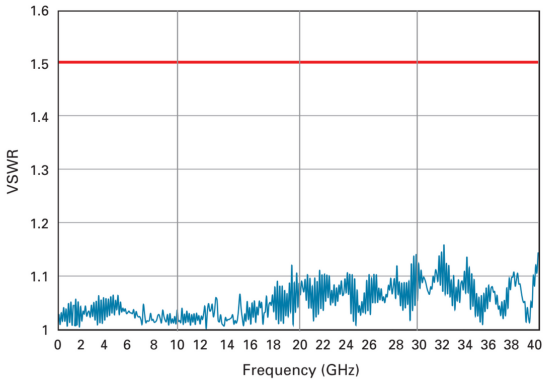
Typical Loss: DTHD-KK-024

2.92 mm (m) to 2.92 mm (m), 24 inches (610 mm) long



Typical VSWR: DTHD-KK-024

2.92 mm (m) to 2.92 mm (m), 24 inches (610 mm) long

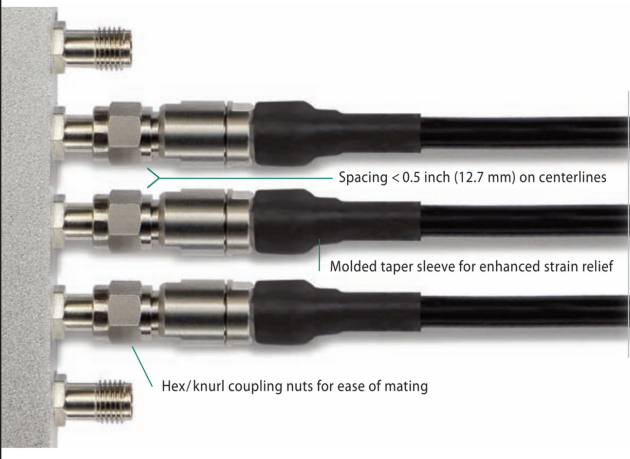


Custom Length DynaTest Assemblies

DynaTest cable assemblies are also available in different lengths to satisfy specific application requirements. Designate the required connector interface and the length as outlined below. Contact Dynawave for insertion loss specifications for custom lengths.

DT-XX-XXX

- Cable assembly length in inches
Example: 72 inches = 072
- Connector type:
SS = SMA (m) to SMA (m)
KK = 2.92 mm (m) to 2.92 mm (m)



General Specifications

Impedance	50 Ohms
Velocity of Propagation	76–80%
Temperature Range	–45°C to +85°C
Outer Cable Diameter (incl. sleeve)	0.24 inch (6.10 mm)
Minimum Bend Radius	1.25 inch (31.70 mm)
Flexure Life (5x min. bend radius)	>25,000
Recommended Mating Torque	
SMA/2.92 mm	9 in-lbs (1.0 Nm)
N	23 in-lbs (2.6 Nm)

Material And Finish

Cable Jacket	Polyurethane
Cable Dielectric	Fluoroplastic
Cable Center Conductor	Copper, Silver-plated
Sleeves	Polyolefin, black
Connector Housing	Stainless Steel Electro-polished
Connector Dielectric	PTFE
Connector Contacts	BeCu, gold-plated

Phase Stability v. Flexure (+/- deg.)

1 GHz	1.0°
3 GHz	1.2°
6 GHz	1.4°
12 GHz	1.9°
18 GHz	2.3°
26.5 GHz	3.0°
40 GHz	5.2°

VSWR and Insertion Loss Specifications

	SMA (m) to SMA (m)			2.92 mm (m) to 2.92 mm (m)		
	DTHD- SS-024	DTHD- SS-036	DTHD- SS-048	DTHD- KK-024	DTHD- KK-036	DTHD- KK-048
Operating Frequency	26.5 GHz	26.5 GHz	26.5GHz	40 GHz	40 GHz	40 GHz
VSWR (max)						
DC-18 GHz	1.25:1	1.25:1	1.25:1	1.25:1	1.25:1	1.25:1
18-26.5 GHz	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1
26.5-40 GHz	NA	NA	NA	1.50:1	1.50:1	1.50:1
Intersection Loss (max @25°C)						
1 GHz	0.51 dB	0.70 dB	0.89 dB	0.51 dB	0.70 dB	0.89 dB
3 GHz	0.82 dB	1.16 dB	1.50 dB	0.82 dB	1.16 dB	1.50 dB
6 GHz	1.15 dB	1.64 dB	2.13 dB	1.15 dB	1.64 dB	2.13 dB
12 GHz	1.65 dB	2.37 dB	3.08 dB	1.65 dB	2.37 dB	3.08 dB
18 GHz	2.07 dB	2.97 dB	3.86 dB	2.07 dB	2.97 dB	3.86 dB
26.5 GHz	2.58 db	3.70 dB	4.82 dB	2.58 dB	3.70 dB	4.82 dB
40 GHz	NA	NA	NA	3.42 dB	4.85 dB	6.27 dB

Custom Solutions and In-House Manufacturing

Proven reliability, exacting performance, and competitive cost under one roof

Our full range of cable manufacturing capabilities can be employed to deliver custom cable products. Our fully equipped machining center supports fast turn prototypes and production runs for custom connectors. And our vertically integrated manufacturing capability for both connectors and cables can satisfy your cable assembly requirements under one roof, whether your needs involve customization, specialty design or fabrication, and expedited delivery.

Software Used

- HFSS electrical simulation software program for electrical modeling
- 3D design using CAD Software

Visit Our Website: Tools for every need

Dynawave's website (www.dynawave.com) offers a variety of tools from configurators and insertion loss calculators, to helpful formulas to help guide you toward an optimal solution for your most complex projects.

Tools you'll find on our website include:

Design Cable Configurators

- This simple charting system allows you to experiment with custom assemblies to configure and compare project solutions.

Assembly Insertion Loss Calculator

- Our engineering design tool provides a quick and accurate determination of IL at any specific frequency and allows comparison of multiple designs on the same screen.

Competitive Cross Reference

- This handy chart allows you to compare Dynawave products to our competitors by part number and product type. We stand by the quality and transparency of our offerings.



To compliment our innovative product designs and custom solution systems, Dynawave has invested in the latest manufacturing technologies for all of your cable, connector, and assembly needs. Our investment ensures efficient and repeatable manufacturing processes, resulting in on-time delivery of exacting-quality products for our customers. Dynawave's vertical integration means we don't need to depend on 3rd party vendors from concept to delivery.

Computer controlled cable manufacturing and electronic quality monitoring systems distinguish Dynawave's modern cable fabrication facility. This allows us to ensure 100% tested reliability for every cable assembly we send out the door.

Dynawave also develops and produces RF and Microwave connectors and cable assemblies in-house, giving us unparalleled expertise in transmitting signals through coaxial interconnects. As a result, customers can benefit from a broad range of electrically matched cables and connectors to meet any problem or project.



Test & Measurement

Value you can measure

For dependable, high-performance broadband test cables at a reasonable price, look to Dynawave DynaTest™ Series test cable assemblies. All Dynawave products undergo functional performance verification. Fully automated, software controlled, and networked test stations are used throughout our facility.

Our test capabilities (up to 67.0 GHz) encompass return loss (VSWR), insertion loss, delay, phase and amplitude matching, and TDR measurements. Data collection and product traceability are available to support your needs, and performance criteria are always tailored to meet your most stringent requirements.

Whether you seek a standard solution, or custom-designed innovation, comprehensive test data documents accompany every product that ships to detail what and how it was tested. This ensures that all electrical, mechanical, and physical characteristics meet customer specifications when shipped.

DynaTest Assemblies are available for rapid delivery in three standard lengths: 24 inches (609 mm), 36 inches (914 mm), and 48 inches (1,219 mm). These phase-stable cables are highly flexible and offer excellent strain relief for long service life.

Learn more at www.dynawave.com/dynatest



All DynaTest™ cable assemblies are 100% RF tested prior to shipment to ensure compliance to electrical specification.