

# dynawave<sup>®</sup>

single path to optimal performance

See back cover to learn about

dynawave<sup>®</sup> express

[www.dynawave.com](http://www.dynawave.com)



## DynaTest™

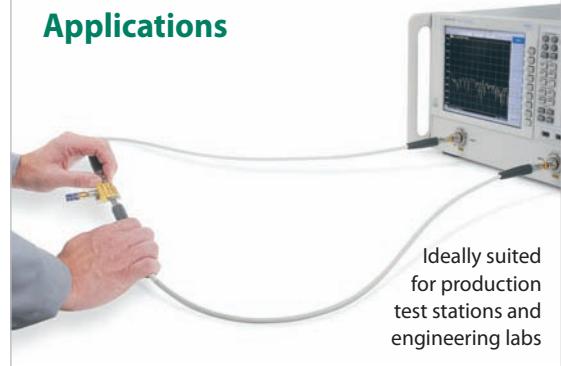
The power of repeatable and reliable performance

- ▶ Broadband performance up to 40 GHz
- ▶ Repeatable, phase 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

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 repeatability 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

### Applications



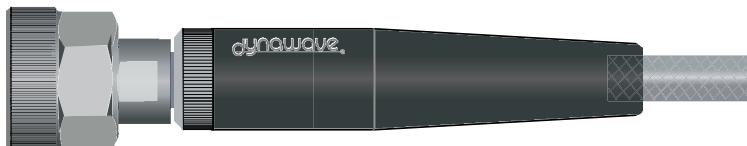
flexibility of these assemblies offer greater ease of use for test technicians and ensure long service life for your test application. DynaTest™ cable assemblies are available through Distribution to support your standard product requirements.



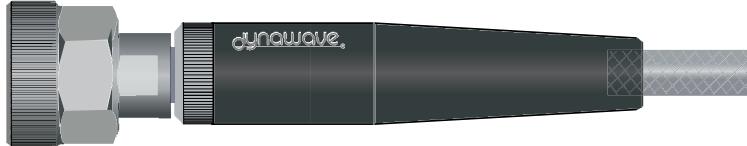
## Standard DynaTest™ Assemblies

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

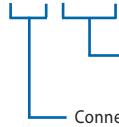


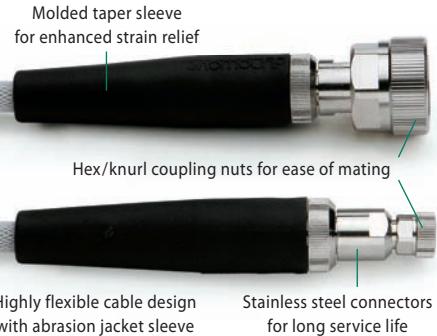
All assemblies listed are RoHS Compliant

## 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.

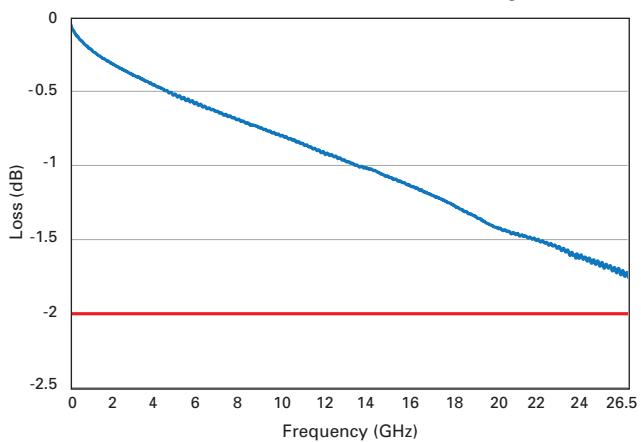
### DT-XX-XXX

  
 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)



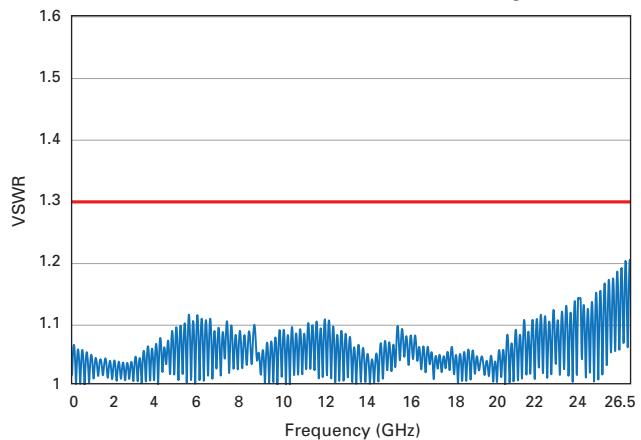
### Typical Loss: DT-SS-024

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



### Typical VSWR: DT-SS-024

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



### Operating Frequency

VSWR (max)

DC-18 GHz

18-26.5 GHz

26.5-40 GHz

### Insertion Loss

1 GHz

3 GHz

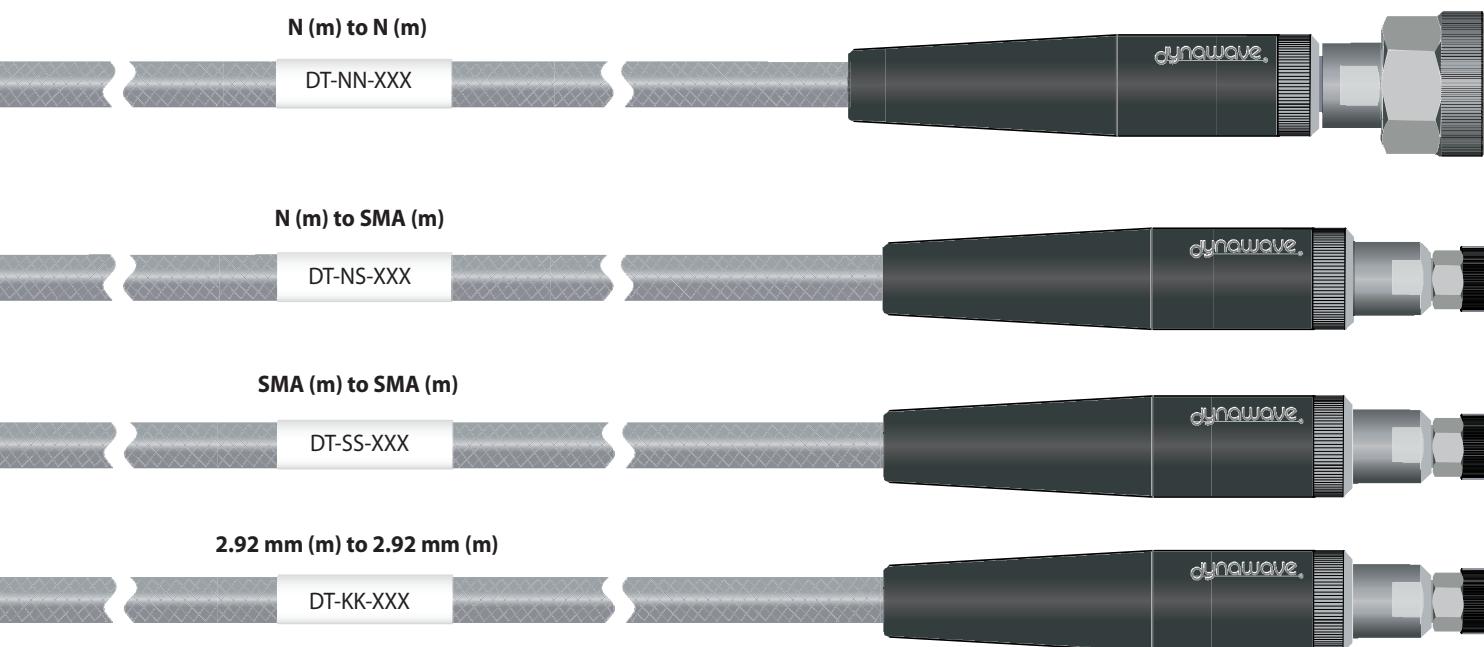
6 GHz

12 GHz

18 GHz

26.5 GHz

40 GHz



#### General Specifications

		Material and Finish		Phase Stability v. Flexure (+/- deg.)	
Impedance	50 Ohms	Cable Jacket	Polyurethane	1 GHz	1.0°
Velocity of Propagation	76-80%	Outer Cable Abrasion Sleeve	Polyester	3 GHz	1.2°
Temperature Range	-45°C to +85°C	Cable Dielectric	Fluoroplastic	6 GHz	1.4°
Outer Cable Diameter (incl. sleeve)	0.24 inch (6.10 mm)	Cable Center Conductor	Copper, silver-plated	12 GHz	1.9°
Minimum Bend Radius	1.25 inch (31.70 mm)	Taper Sleeves	PVC, black	18 GHz	2.3°
Flexure Life (5x min. bend radius)	> 25,000	Connector Housing	Stainless steel electro-polished	26.5 GHz	3.0°
Recommended Mating Torque		Connector Dielectric	PTFE	40 GHz	5.2°
SMA/2.92 mm	9 in-lbs (1.0 Nm)	Connector Contacts	BeCu, gold-plated	Measured per Dynawave ATP-00003	
N	23 in-lbs (2.6 Nm)				

#### Insertion Loss Specifications

Frequency (max)	N (m) to N (m)			N (m) to SMA (m)			SMA (m) to SMA (m)			2.92 mm (m) to 2.92 mm (m)		
	DT-NN-024	DT-NN-036	DT-NN-048	DT-NS-024	DT-NS-036	DT-NS-048	DT-SS-024	DT-SS-036	DT-SS-048	DT-KK-024	DT-KK-036	DT-KK-048
	18 GHz	18 GHz	18 GHz	18 GHz	18 GHz	18 GHz	26.5 GHz	26.5 GHz	26.5 GHz	40 GHz	40 GHz	40 GHz
z	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1	1.25:1	1.25:1	1.325:1	NA	NA	NA
Hz	NA	NA	NA	NA	NA	NA	1.30:1	1.30:1	1.30:1	NA	NA	NA
Hz	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.50:1	1.50:1	1.50:1
dB (max @ 25°C)	0.40 dB	0.50 dB	0.60 dB	0.40 dB	0.50 dB	0.60 dB	0.40 dB	0.50 dB	0.60 dB	0.63 dB	0.82 dB	1.01 dB
	0.60 dB	0.80 dB	1.00 dB	0.60 dB	0.80 dB	1.00 dB	0.60 dB	0.80 dB	1.00 dB	0.94 dB	1.28 dB	1.61 dB
	0.80 dB	1.10 dB	1.40 dB	0.80 dB	1.10 dB	1.40 dB	0.80 dB	1.10 dB	1.40 dB	1.27 dB	1.75 dB	2.24 dB
	1.20 dB	1.60 dB	2.00 dB	1.20 dB	1.60 dB	2.00 dB	1.20 dB	1.60 dB	2.00 dB	1.77 dB	2.48 dB	3.20 dB
	1.50 dB	2.00 dB	2.60 dB	1.50 dB	2.00 dB	2.60 dB	1.50 dB	2.00 dB	2.60 dB	2.18 dB	3.08 dB	3.98 dB
	NA	NA	NA	NA	NA	NA	2.00 dB	2.70 dB	3.40 dB	2.70 dB	3.82 dB	4.94 dB
	NA	NA	NA	NA	NA	NA	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

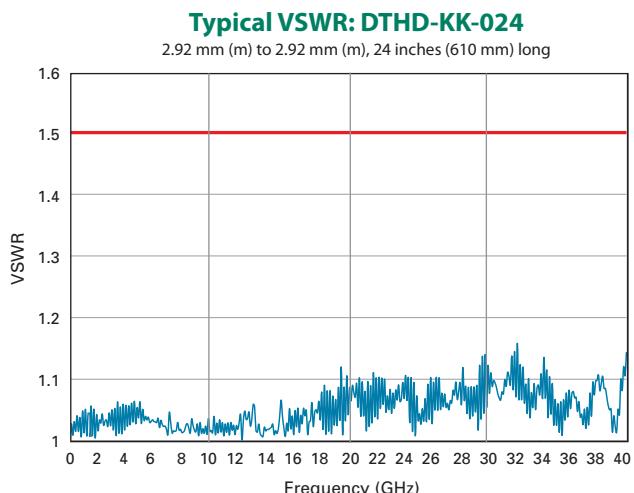
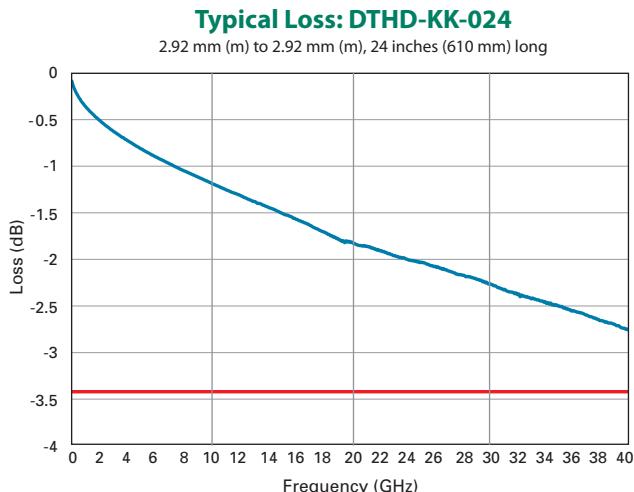
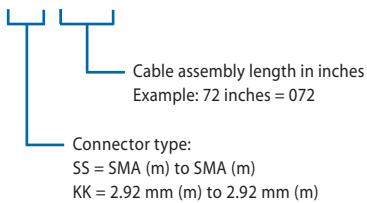


All assemblies listed are RoHS Compliant

## 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.

### DTHD-XX-XXX

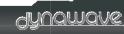


**SMA (m) to SMA (m)**

DTHD-SS-XXX


**2.92 mm (m) to 2.92 mm (m)**

DTHD-KK-XXX


**General Specifications**

		Material and Finish		Phase Stability v. Flexure (+/- deg.)	
Impedance	50 Ohms	Cable Jacket	Polyurethane	1 GHz	1.0°
Velocity of Propagation	76-80%	Cable Dielectric	Fluoroplastic	3 GHz	1.2°
Temperature Range	-45°C to +85°C	Cable Center Conductor	Copper, silver-plated	6 GHz	1.4°
Outer Cable Diameter (incl. sleeve)	0.24 inch (6.10 mm)	Sleeves	Polyolefin, black	12 GHz	1.9°
Minimum Bend Radius	1.25 inch (31.70 mm)	Connector Housing	Stainless steel electro-polished	18 GHz	2.3°
Flexure Life (5x min. bend radius)	> 25,000	Connector Dielectric	PTFE	26.5 GHz	3.0°
Recommended Mating Torque		Connector Contacts	BeCu, gold-plated	40 GHz	5.2°
SMA/2.92 mm	9 in-lbs (1.0 Nm)				
N	23 in-lbs (2.6 Nm)				

Measured per Dynawave ATP-00003

**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 (max)	26.5 GHz	26.5 GHz	26.5 GHz	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
Insertion 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.dynwave.com](http://www.dynwave.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](http://www.dynawave.com/dynatest)





## YOU REQUEST A QUOTE

24

Contact us Monday-Thursday and receive a quote within 24 hours.  
Contact us Friday or on a Holiday and receive your quote the next business day.

## WE SHIP QUICKLY

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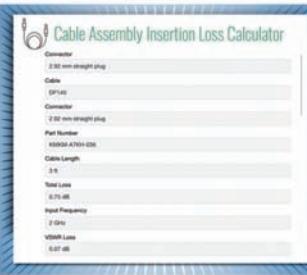
Place your order Monday-Thursday, by email or phone, and we will ship within 24 hours.  
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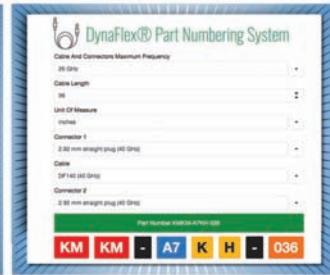
Visit our website [www.dynawave.com](http://www.dynawave.com) and experience easy to use tools to design, specify, and quote the best assembly for your application.



Cable Assembly Configurator



Cable Assembly Insertion Loss Calculator



DynaFlex® Part Numbering System

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