

# DynaTest

Cable, Cable Assemblies, and Connectors



Dynawave, a Winchester Interconnect company, developed the DynaTest® series cable assemblies designed to deliver repeatable, precise 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 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 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.

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## Capabilities

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

# 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

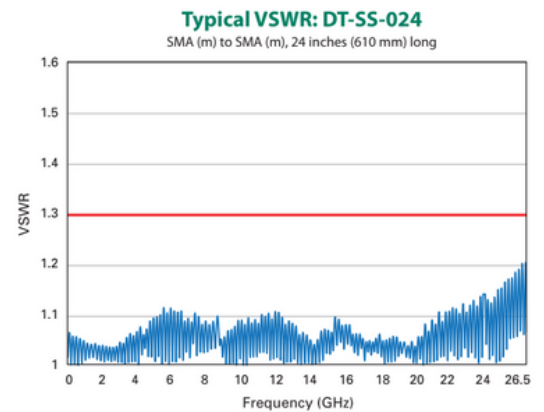
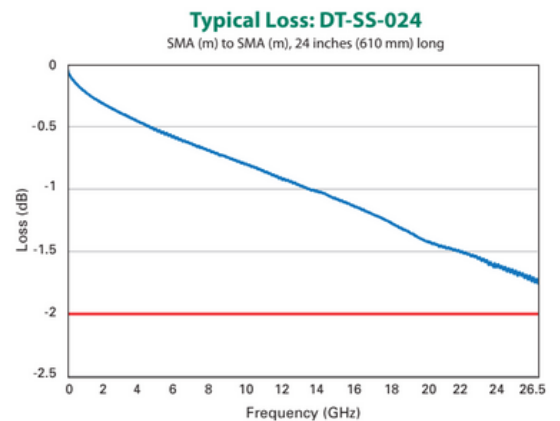
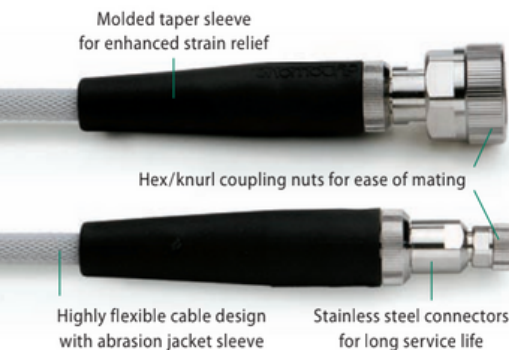
## Custom Length DynaTest Assemblies

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.

### 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.

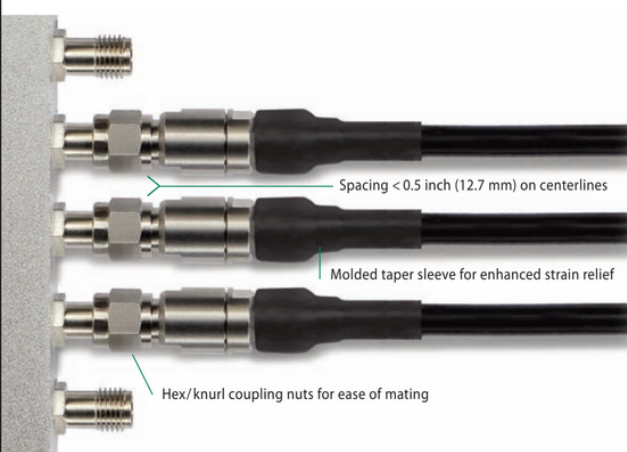
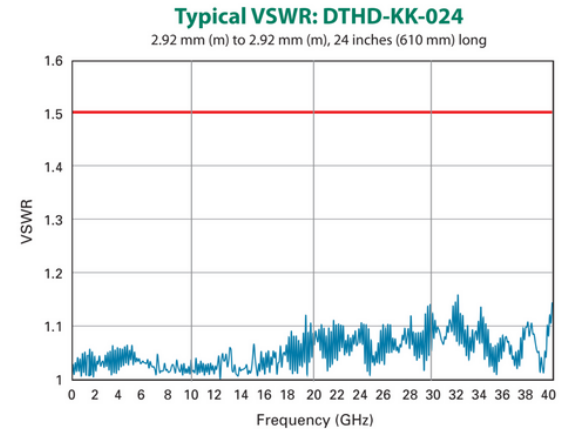
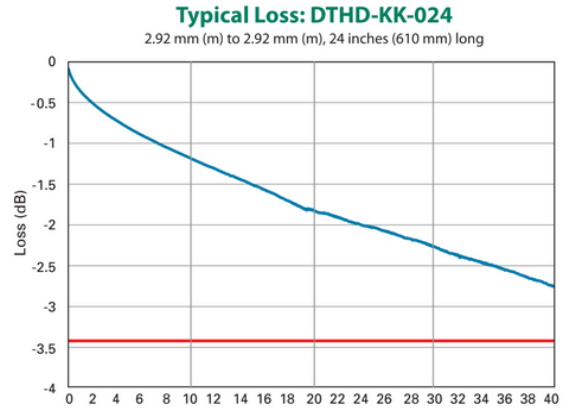
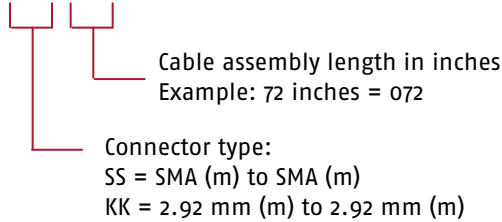
Part Number	Length	Frequency
DTHD-SS-024	24 inches (610 mm)	26.5 GHz
DTHD-SS-036	36 inches (914 mm)	26.5 GHz
DTHD-SS-048	48 inches (1,219 mm)	26.5 GHz

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

## 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.

**DT-XX-XXX**



## 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

# Test & Measurement

## Value you can measure

For dependable, high-performance broadband test cables at a reasonable price, look to the DynaTest® Series test cable assemblies. All 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 highly flexible phase-stable cables offer excellent strain relief for long service life.



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