Lothar *13.04.2010*

Neue Untersuchungen zur HF-Kabelführung vom Auskoppelstift am Feedhorn zum Kalibrierumschalter im Schutzgehäuse hinterm Feedhorn, nachdem für die HF-Auskopplung eine SMA-Buchse vorgesehen wurde

Forderungen: 50-Ω-Koaxkabel für > 1,4 GHz, dämpfungsarm, dünn, wenigstens etwas flexibel, SMA-Stecker

Recherche von Kabeln, die infrage kommen:

Typ	f_{max}	*HF-Schirm*	$Ø_{außen}$	*min. Biege-radius 1x*	*min. Biege-radius 50x*	*dB/m @ 1 GHz*	*dB/m @ 1,4 GHz*	*SMA-Stecker*	*Bezugs-quelle*	*Preis € / m*
RG316U	1 GHz	einfach	2,5 mm	15 mm	25 mm	0.86	k.A.	f. RG174	Mauritz [1)]	2,05
CLF100	6 GHz	doppelt	2,8 mm	8 mm	?	0,79	0,94	f. RG174	Mauritz	1,14
RG402 Semi-Flex [2)]	18 GHz	einfach	3,58 mm	8 mm	40 mm	0,40	0,47	f. RG402 [3)]	Mauritz	6,18
RG400	6 GHz	doppelt	4,95 mm	30 mm	50 mm	0,50	0,60	keine?	Mauritz	6,18

[1)] *http://www.mauritz-shop.eu/*

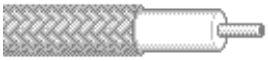
[2)] Das Kabel RG402 Semi-Flex ist identisch mit Sucoform SM141 der Fa. Huber & Suhner und dem Kabelstück, das bereits früher für diesen Zweck vorgesehen war: *http://www.mauritz-shop.eu/advanced_search_result.php?keywords=RG402&x=0&y=0*

[3)] SMA-Winkelstecker z.B. von RS *http://de.rs-online.com/web/search/searchBrowseAction.html?method=getProduct&R=4141199*
oder gerader SMA-Stecker mit maximal gebogenem Kabel: *http://de.rs-online.com/web/search/searchBrowseAction.html?method=getProduct&R=4683031*

Datenblatt für Winkelstecker: *http://docs-europe.origin.electrocomponents.com/webdocs/010a/0900766b8010a301.pdf*
Datenblatt für geraden Stecker: *http://docs-europe.origin.electrocomponents.com/webdocs/0496/0900766b80496c0c.pdf*

Das Semi-Flex-Kabel entspricht meiner Meinung nach am besten den Forderungen. Es kann im freien Raum zwischen Feedhorn und Feedhornaufnahme nach hinten zum Schutzgehäuse geführt werden. Schrumpfschlauch über dem Kabel schützt vor Witterungseinflüssen. Für einen geraden SMA-Stecker wird eher ein Wetterschutz zu finden sein als für einen Winkelstecker.

1673A Coax - 50 Ohm Microwave Cable



For more information please call
1-800-Belden1

See Put-ups and Colors

Description:

RG-402/U type, 19 AWG solid .036" silver-plated copper-covered steel conductor, TFE Teflon® insulation, copper-tin composite shield (100% coverage), unjacketed.

PHYSICAL CHARACTERISTICS:

CONDUCTOR:

Number of Coax	1
Total Number of Conductors	1
RG Type	402/U
AWG	19
Stranding	Solid
Conductor Diameter	.036 in.
Conductor Material	SPCCS - Silver Plated Copper Covered Steel

INSULATION:

Insulation Material Trade Name	Teflon®
Insulation Material	TFE - Tetrafluoroethylene
Insulation Diameter	.116 in.

OUTER SHIELD:

Outer Shield Type	Tape/Braid

Outer Shield Material :

Layer Number	Trade Name	Type	Material	% Coverage (%)
1		Tape	Copper Foil	100
2		Braid	Tin-Filled Composite	100

Outer Shield %Coverage	100 %

OVERALL NOMINAL DIAMETER:

Overall Nominal Diameter	.138 in.

MECHANICAL CHARACTERISTICS:

Operating Temperature Range	-70°C To +200°C
UL Temperature Rating	105°C
Non-UL Temperature Rating	200°C
Bulk Cable Weight	20 lbs/1000 ft.
Max. Recommended Pulling Tension	70 lbs.

1673A Coax - 50 Ohm Microwave Cable

Min. Bend Radius (Install)	0.25 in.
Min. Bend Radius (Continuous Flexing)	0.75 in.

APPLICABLE SPECIFICATIONS AND AGENCY COMPLIANCE:

APPLICABLE STANDARDS:

AWM Specification	UL Style 10245
EU CE Mark (Y/N)	Yes
EU RoHS Compliant (Y/N)	Yes
EU RoHS Compliance Date (mm/dd/yyyy):	01/01/2005

FLAME TEST:

Other Flame Test	Horizontal Wire

SUITABILITY:

Suitability - Indoor	Yes
Suitability - Outdoor	Yes

PLENUM/NON-PLENUM:

Plenum (Y/N)	N

ELECTRICAL CHARACTERISTICS:

Nom. Characteristic Impedance	50 Ohms
Nom. Inductance	0.070 µH/ft
Nom. Capacitance Conductor to Shield	29.5 pF/ft
Nominal Velocity of Propagation	69.5 %
Nominal Delay	1.46 ns/ft
Nom. Conductor DC Resistance @ 20 Deg. C	20.5 Ohms/1000 ft
Nominal Outer Shield DC Resistance @ 20°C	4.5 Ohms/1000 ft

Maximum VSWR :

Description	Frequency (MHz)	Start Frequency (MHz)	Stop Frequency (MHz)	Maximum VSWR
Ramp Function, End Points	500			1.1
	20000			1.3

Nom. Attenuation :

1673A Coax - 50 Ohm Microwave Cable

Description	Frequency (MHz)	Start Frequency (MHz)	Stop Frequency (MHz)	Nom. Attenuation (dB/100 ft.)
	500			8.0
	1000			12.0
	2000			18.1
	3000			22.9
	5000			31.0
	7000			37.8
	10000			46.6
	15000			59.1
	18000			65.8
	20000			70.0

Max. Attenuation :

Description	Frequency (MHz)	Start Frequency (MHz)	Stop Frequency (MHz)	Max. Attenuation (dB/100 ft.)
	500			9.5
	1000			14.5
	3000			26.5
	5000			36.0
	10000			54.0
	20000			84.0

Nom. Power Rating :

Description	Frequency (MHz)	Start Frequency (MHz)	Stop Frequency (MHz)	Nom. Power Rating (W)
	500			600
	1000			401
	2000			268
	3000			211
	5000			157
	7000			129
	10000			105
	15000			83
	18000			74
	20000			70

Max. Operating Voltage - UL	30 V RMS
Max. Operating Voltage - Non-UL	1900 V RMS

NOTES:

Notes	US Patents 4, 694, 122 & 5, 293, 001. Patent held in the U.S., Singapore, Australia, Germany, France, and England. Patent pending in Japan. Teflon® is a registered trademark of E. I. duPont de Nemours and Co. used under license by Belden, Inc.

PUT-UPS AND COLORS:

Item	Description	Put-Up (ft.)	Ship Weight (lbs.)	Jacket Color	Notes
1673A TIN100	#19 TFE BRD TINNED COAX	100	3.9	TIN - COLOR	C
1673A TIN250	#19 TFE BRD TINNED COAX	250	8	TIN - COLOR	C V

1673A Coax - 50 Ohm Microwave Cable

1673A TIN50	#19 TFE BRD TINNED COAX	50	3.25	TIN - COLOR	
1673A TIN500	#19 TFE BRD TINNED COAX	500	15	TIN - COLOR	

C = CRATE REEL PUT-UP.

V = 250' PUT-UP EXACT LENGTH MAXIMUM OF 3 PIECES MINIMUM LENGTH 50' 500' PUT-UP EXACT LENGTH MAXIMUM OF 5 PIECES MINIMUM LENGTH 50' 1000' PUT-UP EXACT LENGTH MAXIMUM OF 8 PIECES MINIMUM LENGTH 50'

Revision Number: 2 Revision Date: 07-12-2005