

THE REVISION STATUS OF ALL SHEETS OF THIS DRAWING IS THE SAME AS SHEET 1

LTR	DESCRIPTION	DATE	BY
-	Released	5/1/02	JCL
C	Outer Braid from BC to TC	3/20/03	JCL

I. CONSTRUCTION

	DIAMETER
Center Conductor: Solid Bare Copper (ASTM B3)	.260 +/- .001"
Dielectric: High Purity Polyethylene	.920 +/- .015"
1st Shield: Alum(.001")-Propylene(.001")-Alum(.001") Tape applied longitudinally(bonded to dielectric)	.928" nom
2nd Shield: Alum(.00035")-Propylene(.001")-Alum(.00035") Tape spirally appliert over longitudinal tape	.935" nom
3rd Shield: 30Ga Bare Copper Braid(96%K)	.981" nom
Jacket: Black Low Smoke, Non-Halogen Polyolefin	1.180 +/- .015"
4th Shield: 30Ga Tinned Copper Braid(96%K)	1.250" nom

Print Legend: "68999 Times Microwave Systems AA-9139 Date Code"

II. PHYSICAL AND ENVIRONMENTAL PROPERTIES

Weight per 1000 feet	900 lbs
Recommended Minimum Bend Radius	15 inches
Operating Temperature Range	-40C to +80C
Adhesion: Conductor to Dielectric	100 lbs min
Eccentricity: Conductor to Dielectric	5% max

III. ELECTRICAL PROPERTIES

Impedance	50 +/- 2 ohm
Velocity of Propagation (nom)	65.9 %
Capacitance (nom)	30.8 pf/ft
Attenuation @ 400 MHz	2.30 dB/100ft
Corona Extinction (Minimum)	14 kV
Operating Pulse Operation 70 kV DC	

IV. NOTES

Unless otherwise specified all tests are performed in accordance with MIL-C-17 (current edition).

Unless otherwise specified, dimensions are in inches. Tolerances are applicable when specified. These drawings and specifications contain proprietary information which is the property of Times Microwave Systems.	Approvals			 TIMES MICROWAVE SYSTEMS Wallingford, CT 06492 (203) 949-8400; (203) 949-8423 Fax www.timesmicrowave.com
	Drawn	JCL	5/1/02	
	Check			
	Prj. Mgr.			
	Prd. Mgr.			
QA Mgr.				
High Reliability - High Voltage Coax				
For Brookhaven National Laboratory				
Size A	CAGE CODE 68999	Drawing No.: AA-9139		
Scale: NA		Rev. (C)		
Sheet: 1 of 1				

Doug

From: Jim Eckroth [jim@fireriskmgmt.com]
Sent: Thursday, April 10, 2003 11:41 AM
To: Doug Bunch
Cc: barnettwejr@ornl.gov; holik@sns.gov
Subject: RE: Re: AA-9139 Design

Doug,

On the approved cable list, please update the conditional approval (comments section), condition # 1 to read as follows:

1) Materials of construction will be as listed in Times Microwave Drawing AA-9139, Rev. C which includes the use of a low smoke, non-halogen polyolefin jacket and an overall outer 30Ga tinned copper braid. The update to the original approval changes the drawing rev. from a to c, and changes the overall outer jacket from bare copper braid to tinned copper braid to match the procurement order currently being placed.

Thanks,

Jim E.

-----Original Message-----

From: Jim Eckroth [mailto:jim@fireriskmgmt.com]
Sent: Tuesday, March 18, 2003 3:00 PM
To: Doug Bunch
Cc: barnettwejr@ornl.gov; Paul Holik [holik@sns.gov]
Subject: RE: Re: AA-9139 Design

Doug,

One more time and for the record (corrected cable length and cable requestor's name).....

Doug,

I talked with Joe Lanoue of Times Microwave regarding historical fire tests of the proposed AA-9139 cable. Joe indicated that as a specialty cable, the AA-9139 cable has not been tested to the UL-1666 vertical tray fire test. However, Joe indicated that the low smoke, non-halogen polyolefin jacket is used on other Times Microwave cables that have been tested and certified by Underwriters Laboratory (UL) to be in compliance with the UL-1666 Vertical Tray fire test.

After consultation with Paul Holik, SNS Electrical Safety Committee Chair, and William Barnett, cable requestor, it was determined that the use of this non-listed specialty cable on the SNS project is acceptable based on the following conditions:

- 1) Materials of construction will be as listed in Times Microwave Drawing AA-9139, Rev. A which includes the use of a low smoke, non-halogen polyolefin jacket and an overall outer 30Ga bare copper braid.
- 2) Approval is for ~ 13000 feet and use is restricted to Ring Kicker Systems.

Please add this cable to the SNS approved cables list (approved for conduit or tray) and note the two approval conditions above under the comments section of the approved cables list.

Thanks,

Jim Eckroth, PE, CSP
 SNS Fire Protection Engineering Support

-----Original Message-----

From: Doug Bunch [mailto:bunchda@sns.gov]

Sent: Thursday, March 13, 2003 8:47 AM
To: Jim Eckroth
Subject: FW: Re: AA-9139 Design

Jim, here's the spec on the HV COAX for William Barnett and Ken Rust.

Let me know what we need to do...

Thanks

Doug

-----Original Message-----

From: Kenneth Rust [mailto:rustkr@sns.gov]
Sent: Wednesday, March 12, 2003 2:52 PM
To: bunchda@ornl.gov
Cc: barnettwejr@ornl.gov
Subject: Fwd: Re: AA-9139 Design

Doug,
Hope this helps.
Ken

----- Forwarded Message

Date: Wed, 12 Mar 2003 14:43:43 -0500
From: Joe Lanoue <jlanoue@timesmicrowave.com>
Subject: Re: AA-9139 Design
To: Kenneth Rust <rustkr@sns.gov>
Cc: Robert Perelman <perelman@timesmicrowave.com>,
Dennis Dubuc <ddubuc@timesmicrowave.com>, Bob Srubas <rsrubas@timesmicro.com>
Organization: Times Microwave Systems

Thanks Ken. Just some internal confusion here. The jacket still has to be FR to meet the Tray test, even with the braid over it.

The proposed AA-9139 cable has a Fire Retardant Polyethylene jacket which meets the National Electric Code (NEC) requirements for vertical risers, and has been tested and certified by Underwriters Laboratories (UL) to be in compliance with the UL-1666 Vertical Tray fire test.

..Joe

----- Original Message -----

From: [Kenneth Rust](#)
To: [Joe Lanoue](#)
Sent: Wednesday, March 12, 2003 2:16 PM
Subject: Re: AA-9139 Design

Joe,
Yes, with the outer shield over jacket. I can guess your question and that is, what do you care about the outer jacket if it has a shield. I was just asked to find out if it is tray rated

and some documentation to back it up.
Thanks,
Ken

At 02:09 PM 3/12/2003 -0500, you wrote:

Just wanted to clear up a bit of confusion. Did you require AA-9139 (attached) as is with the Bare Copper braid over the jacket?

.
Regards... Joe Lanoue
Times Microwave Systems
P:203-949-8424
F:203-949-8423
www.timesmicrowave.com

Ken Rust
Spallation Neutron Source
Oak Ridge, TN 37831-6473
PH (865)241-9880
FAX (865)241-6739
rustkr@sns.gov

----- End of Forwarded Message

Doug

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