

# PERFORMANCE TEST REPORT

<b>Item no.</b>	99909440
<b>Product description</b>	F-56-CX3 4,9
<b>Cable used for test</b>	CommScope F6TSV
<b>Date / Init</b>	February 22, 2002
<b>Remarks</b>	All tests performed using instruments calibrated in accordance to our ISO 9001 certification.

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# PERFORMANCE TEST REPORT

## Connector composure

Body Brass CuZn39Pb3 / Delrin  
 Plating Nitin-6  
 O-rings EPDM

Installation temperature -5°C - +50°C

Operation temperature -40°C - +100°C

## Chemical Resistance outdoor

O-rings EPDM EPDM O-rings are very resistant to wind, weather and ozone. Good capability of resistance to acids and bases. (Operation temperature: -40<sup>0</sup> C – +120<sup>0</sup> C )

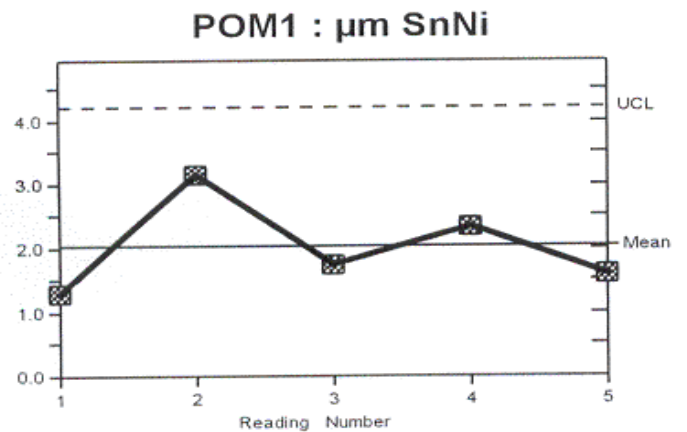
Nitin-6 plating High resistance to accelerated and outdoor corrosion tests, attack by chemical reagents, and tarnishing. Hardness values (600-700 Vickers) intermediate between those of nickel and chromium. Non-magnetic, non-toxic and solder able. Self-lubricating, low friction surface. Contact resistance is very consistent. Does not cause allergic reactions to allergic people.



## Plating thickness (According ASTM B568)

Equipment X-Ray: CMI-A-CL-S-XYZ  
 Quantity tested 5 connector samples were tested  
 Test procedure Plating thickness on body and backnut were tested  
 Measurement results

No.	µm SnNi
1	1,30
2	3,16
3	1,75
4	2,31
5	1,61
Mean	2,02



# PERFORMANCE TEST REPORT

## Climatic Test

(According to IEC 1169-1 16.2.4)

Equipment Angelantoni CH 250C, Thermostatic and Climatic Chamber  
Quantity tested 6 connector samples were tested  
Test procedure According to IEC 1169-1 16.2.4  
(-40°C 3 hours, +70°C 3 hours) x 5 cycles  
After climatic test the connectors are tested further in order to discover mechanical or electrical deviations

### Measurement results

No.	Results
1	No deviations
2	No deviations
3	No deviations
4	No deviations
5	No deviations
6	No deviations

## Sealing Test

(According to IEC 529)

Equipment Compression Tank Normameter 950, NORMA TRMS, Multimeter  
Quantity tested 4 connector samples were tested  
Test procedure According to IEC 529  
IPX7 = 0,30 m, 30 minutes  
IPX8 = 1 m, 24 hours  
After Sealing Test IPX7 / IPX8 the resistance between inner conductor and shield must be  $> 220G\Omega$ .

### Measurement results

No.	IPX7 test	IPX8 test
1	Pass	Pass
2	Pass	Pass
3	Pass	Pass
4	Pass	Pass

## Amp. Rating

Equipment Delta Electronica Power Supply SM 1540-D, 40A  
APPA 55 Thermometer  
Quantity tested 2 connector samples were tested  
Test procedure Maximum Amp. Rate measured at max. 10°C increase above ambient temperature

### Measurement

No.	Results:
1	$> 6$ A See Cable Data
2	$> 6$ A, See Cable Data

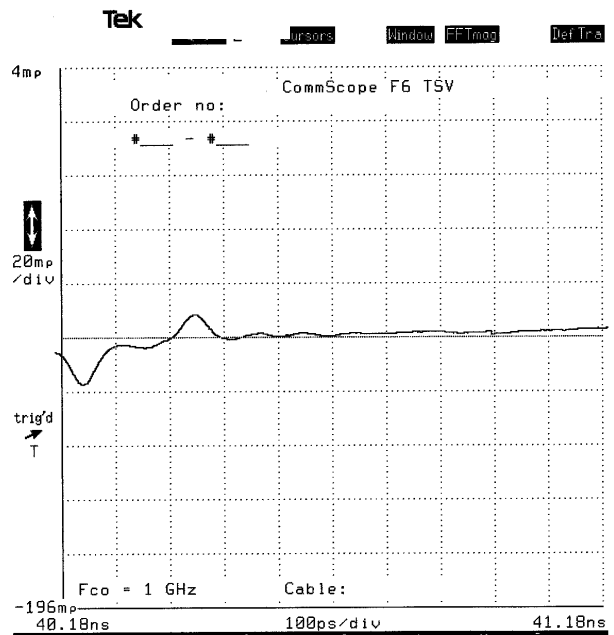


# PERFORMANCE TEST REPORT

## Impedance

Analyser	Tektronix CSA 803A, SD-24 TDR / Sampling Head
Measuring adapters	NF-FF, NM/50-NM/50, NM/50-NM/75 Adapter
Measuring cables	Suhner Sucoflex 0,75m NM-NM 50 $\Omega$ cable
Quantity tested	4 connector samples were tested on one 3-feet double-ended terminated cable assembly.
Tolerance	Maximum +/- 2 $\Omega$
Scale X=1cm /div, Y=2 $\Omega$ / div	

CSA803A COMMUNICATIONS SIGNAL ANALYZER  
date: 26-FEB-02 time: 10:01:00



## Insulation Resistance

(According to IEC 1169-1 9.2.5)

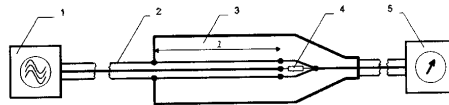
Equipment	NORMA, UNILAP ISO X type 2
Quantity tested	6 connector samples were tested
Test procedure	According to IEC 1169-1 9.2.5 the insulation resistance shall be measured between the contacts with a DC voltage of 500 V or with the rated voltage of the connector whichever is less
Measurement	
No.	Results
1	Pass
2	Pass
3	Pass
4	Pass
5	Pass
6	Pass

# PERFORMANCE TEST REPORT

## Shielding Effectiveness

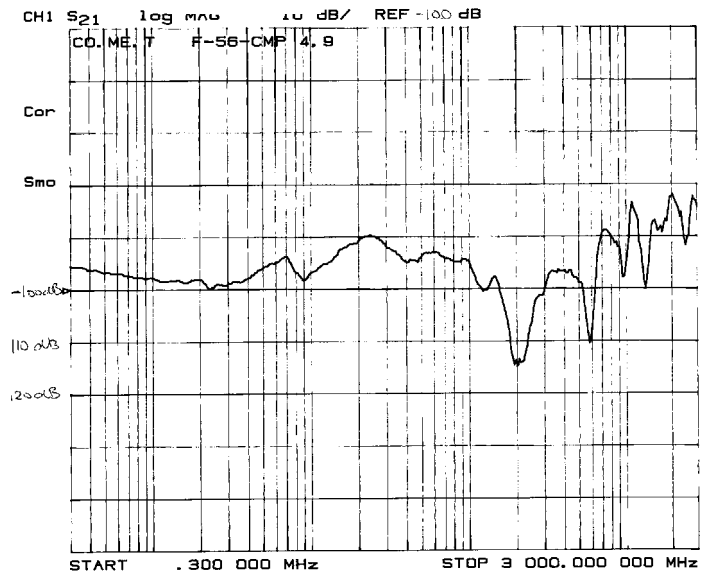
(According IEC 61196-1, Amendment 1, EN 50289-1-6 Appendix C)

Analyser	HP 8753C
Tube	Bedeac CoMeT Coupling Measuring Tube.
Calibration kit	HP 85054D
Measuring adapters	NF/50-5/8F
Measuring cables	Suhner Sucoflex 0,50m and 2,0m NM-NM 50Ω cables.
Quantity tested	2 connector samples were tested on a one 3-ft. double-ended cable assembly.
Test procedure	Bedeac CoMeT Coupling Measuring Tube.



- |                  |                        |
|------------------|------------------------|
| 1 Generator      | 4 Termination resistor |
| 2 DUT            | 5 Receiver             |
| 3 Measuring Tube | l Coupling length      |

Measurement results 5 - 862 Mhz > 90 dB



## Dielectric Strength

(According to IEC 1169-1 9.2.6)

Equipment	Heinrich C. Kosmeier GMBH WT-30, 5 kV
Quantity tested	6 connector samples were tested
Test procedure	According to IEC 1169-1 9.2.6, the connector shall withstand without breakdown or flashover with the voltage specified by the relevant specification

Measurement results

No.	Results
1	> 2kV = Cable Data
2	> 2kV = Cable Data
3	> 2kV = Cable Data
4	> 2kV = Cable Data
5	> 2kV = Cable Data
6	> 2kV = Cable Data

# PERFORMANCE TEST REPORT

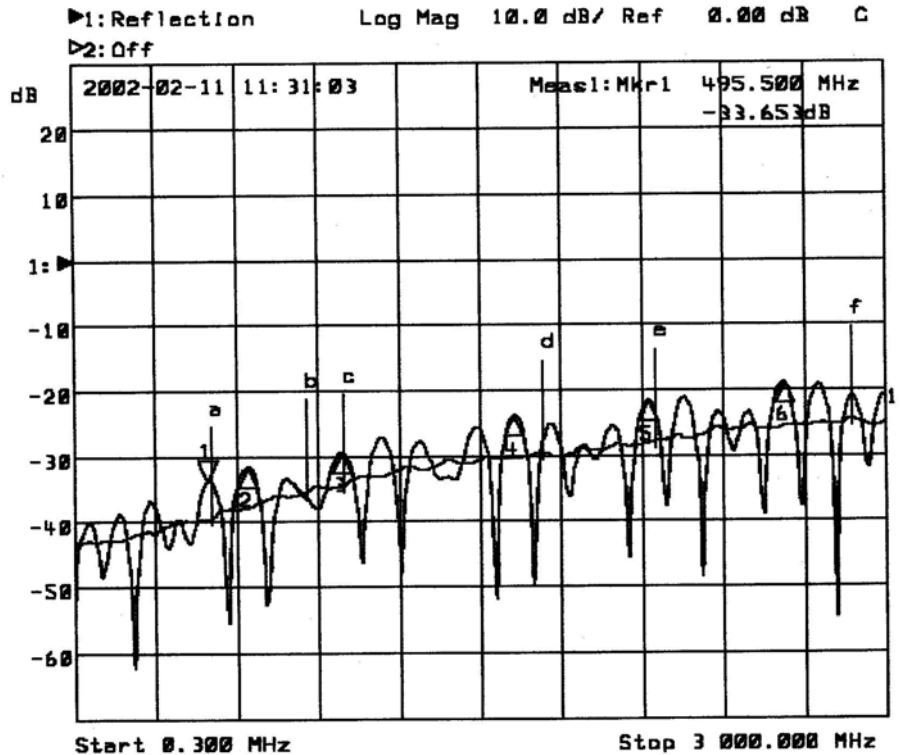
## Return loss

(According to IEC 1169-1 9.2.1)

Analyser HP 8719C  
 Calibration kit HP 85039B type F  
 Measure adapter HP 85039-60014 NF-FF  
 Measure cables Suhner Sucoflex 0,75m NM-NM 75Ω cable  
 Quantity tested 10 connector samples were tested on 5 double-ended cable assemblies  
 Test procedure Return loss measured on a 3-ft. jumper (see "RETURN LOSS JUMPER" graph below). Return loss calculated for one connector (see "CALCULATED IEC VALUES" below).

## Measurement results

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 TW



### RETURN LOSS JUMPER

0.3	-	500 MHz	-33.65 dB	marker 1	495 MHz
500	-	860 MHz	-31.57 dB	marker 2	645 MHz
860	-	1000 MHz	-29.32 dB	marker 3	990 MHz
1000	-	1750 MHz	-23.7 dB	marker 4	1628 MHz
1750	-	2150 MHz	-21.57 dB	marker 5	2123 MHz
2150	-	3000 MHz	-18.87 dB	marker 6	2625 MHz

### CALCULATED IEC VALUES

0.3	-	500 MHz	-39.5 dB	marker a	500 MHz
500	-	860 MHz	-35.3 dB	marker b	860 MHz
860	-	1000 MHz	-34.45 dB	marker c	998 MHz
1000	-	1750 MHz	-29.41 dB	marker d	1740 MHz
1750	-	2150 MHz	-27.74 dB	marker e	2150 MHz
2150	-	3000 MHz	-24.58 dB	marker f	2880 MHz



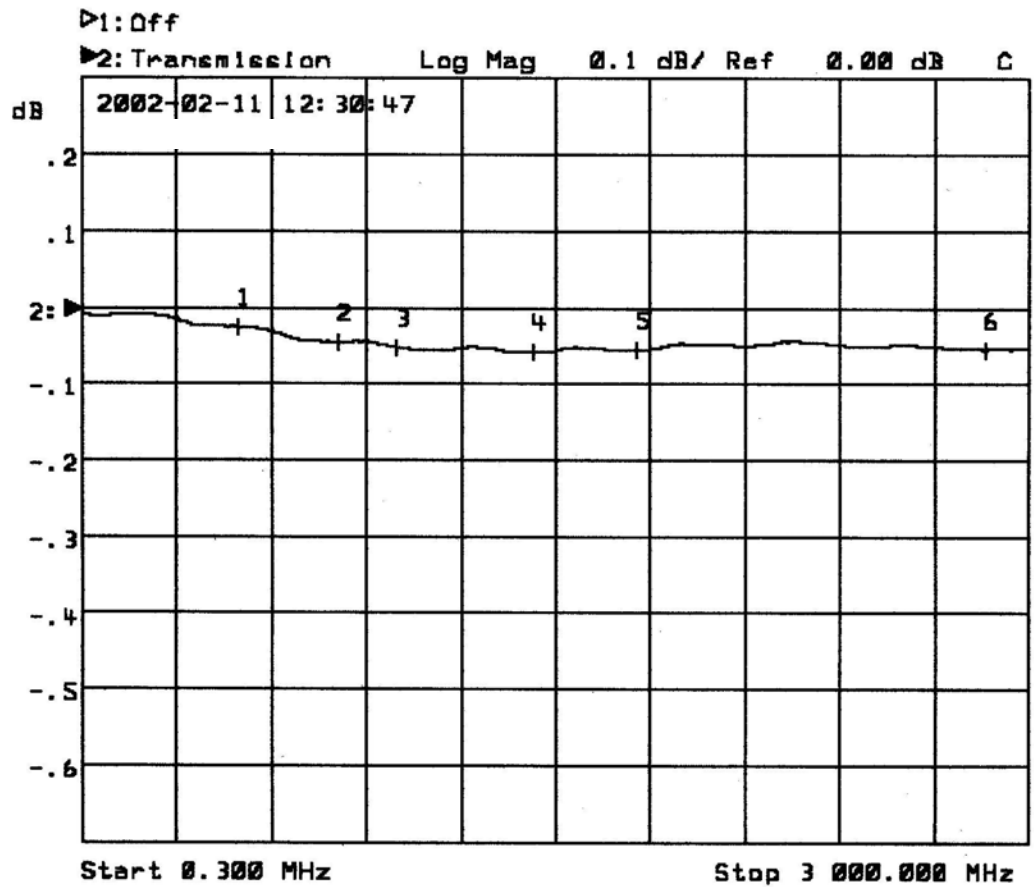
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## Insertion loss

(According to IEC 1169-1 9.2.1)

Analyser HP 8719C  
 Calibration kit HP 85039B type F  
 Measuring adapters: HP 85039-60014 NF-FF  
 Measuring cables Suhner Sucoflex 0,75m NM-NM 75Ω cable.  
 Quantity tested 4 connector samples were tested on one 1-foot and one 3-foot double-ended cable assemblies.  
 Test procedure "CALCULATED INSERTION LOSS 1 CONNECTOR " is the insertion loss of one connector calculated from the 1 and 3 feet jumpers.

## Measurement results



### CALCULATED INSERTION LOSS 1 CONNECTOR

0.3	-	500 MHz	- .03 dB	marker 1	495 MHz
500	-	860 MHz	- .05 dB	marker 2	810 MHz
860	-	1000 MHz	- .06 dB	marker 3	997 MHz
1000	-	1750 MHz	- .06 dB	marker 4	1432 MHz
1750	-	2150 MHz	- .06 dB	marker 5	1762 MHz
2150	-	3000 MHz	- .06 dB	marker 6	2872 MHz

Length jumper1 = 93 cm

Length jumper2 = 26 cm

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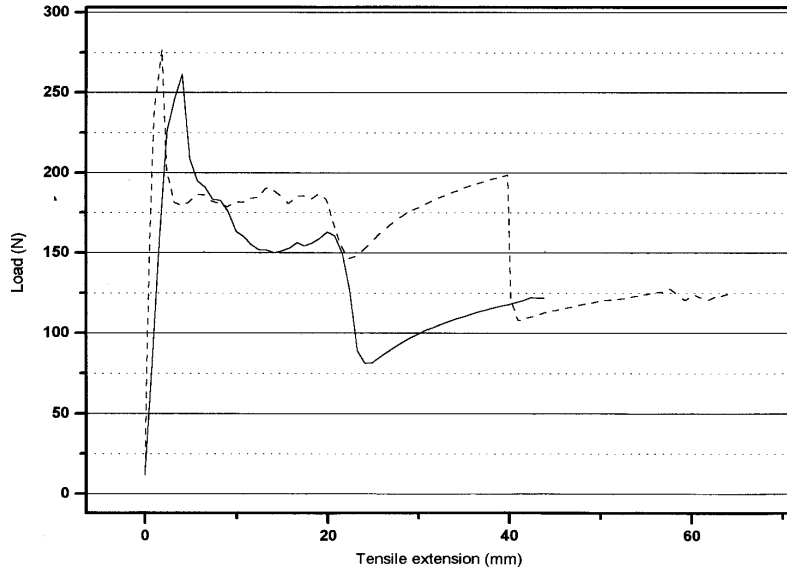


# PERFORMANCE TEST REPORT

## Maximum tensile strength

Equipment                                    Instron ASTM E4-99, ISO7500-1:1999  
Quantity tested                            2 connector samples were tested for "Tensile overall"  
Test procedure                             Tensile speed 2" / min.  
Measurement results  
Tensile overall

Tensile Strength:  
C.S.F6TSV



Specimen 1 ----- 276 N  
Specimen 2 ----- 261 N

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