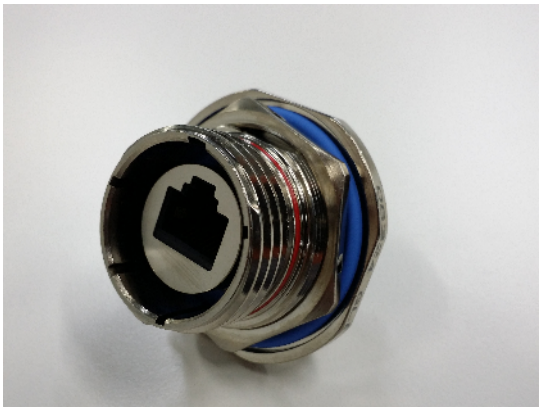
GT-14-30

SuperSeal D38999 Series

233-300 Series, Low Temp CAT5e RJ45 Coupler
Qualification Test Report

233-300M07G195LN3
(Receptacle)



233-300MG6-195LN3
(Plug)

Glenair, Inc.
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Glendale, CA 91201-2497 USA

WWW.GLENAIR.COM

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Revision: A

Revision History

Rev	Date	Approved	Description
A	5/15/2014	P. Brulatti / S. Cremonini / G. Hunziker	Initial Release

Test Laboratory Glenair Italia s.p.a.
Via del Lavoro 7, Quarto Inferiore – Granarolo dell'Emilia (BO) 40057, Italy

Client - cliente**: Glenair Inc.**

Reference contact - contatto**: Guido Hunziker**

Title - titolo**:**

Superseal 38999 RJ45 – Qualification

Tests carried out by - test eseguito da**:** **S.Cremonini**	
Test report compiled by - rapporto di prova scritto da**:** **S.Cremonini**	

Statement - dichiarazione**:** *This is to certify that all tests have been conducted in accordance with the order/ specification / test programme. The results relate to the samples tested and have been accurately recorded in the test report given under the Testlab Manager authority. This report shall not be reproduced without the written approval of the laboratory- Questo per dichiarare che tutte le prove sono state effettuate in accordo agli ordini / norme / programmi di prova. I risultati sono relativi ai campioni sottoposti alle prove sono stati registrati in maniera accurata nel rapporto di prova distribuito sotto la supervisione del Responsabile del Laboratorio. Questo rapporto di prova non deve essere riprodotto senza il consenso scritto del Laboratorio.*

Test report approved by – rapporto di prova approvato da: **P. Brulatti**	

Test Laboratory Glenair Italia s.p.a.
Tel. +390516069915 / +390516069998
Email: pbrulatti@glenair.it

Description of samples – descrizione dei campioni**:**

6 couples of Superseal 38999 RJ45:
Plug: 233-300MG6-195LN3 1336 / Receptacle: 233-300M07G195LN3 1337
SN1R RdPe001-14 mated with SN1P RdPe001-14

SN2R RdPe001-14 mated with SN2P RdPe001-14

SN3R RdPe001-14 mated with SN3P RdPe001-14

SN4R RdPe001-14 mated with SN4P RdPe001-14

SN5R RdPe001-14 mated with SN5P RdPe001-14

SN6R RdPe001-14 mated with SN6P RdPe001-14

Conclusions / Outcome – conclusioni / esito**:**

Test	Result
DWV (900 VAC 50Hz)	**PASS**
Thermal shock (-40 °C & +85 °C – 90 cycles)	**PASS**
Vibrations (20 G – 8 hours for axis)	**PASS**
Mating cycles (1000)	**PASS**

The SUPERSEAL RJ45 38999 PASS with positive result all the qualification test.

Date of receipt of samples – data di ricezione campioni**: 09/12/13**

List of tests – lista delle prove:	Description - Descrizione	Standard applicable – norme applicabili
Group 1 DIELECTRIC WHITSTANDING VOLTAGE		
Sample Tested: SN4 RDPe 001/14		
Dielectric withstanding voltage	Determine the maximum voltage at breakdown. Reduce by 30% for subsequent pass/fail criteria	MIL-STD-38999
Group 2 THERMAL SHOCK		
Samples Tested: SN1 RDPe 001/14; SN2 RDPe 001/14		
Ground Resistance (*)	0.1 mA - 1,5 VDC Pass if <=2.5 mOhm	MIL-STD-38999
Insulation Resistance	500 VDC - 1 minute =>5 Gohm	MIL-STD-38999
Ethernet compliance Test (*)	Compliant with TIA/EIA568 Cat 5 - EN50173-1D	TIA/EIA568 - EN50173
Dielectric withstanding voltage	900 VAC - 1 minute leakage current <2 mA	MIL-STD-38999
Thermal Shock	5 cycles -40 °C to +85 °C	MIL-STD-38999
Ground Resistance (*)	0.1 mA - 1,5 VDC Pass if <=2.5 mOhm	MIL-STD-38999
Insulation Resistance	500 VDC - 1 minute =>5 Gohm	MIL-STD-38999
Ethernet compliance Test (*)	Compliant with TIA/EIA568 Cat 5 - EN50173-1D	TIA/EIA568 - EN50173
Dielectric withstanding voltage	900 VAC - 1 minute leakage current <2 mA	MIL-STD-38999
Thermal Shock	+10 cycles -40 °C to +85 °C	MIL-STD-38999
Ground Resistance (*)	0.1 mA - 1,5 VDC Pass if <=2.5 mOhm	MIL-STD-38999
Insulation Resistance	500VDC - 1 minute =>5 Gohm	MIL-STD-38999
Ethernet compliance Test (*)	Compliant with TIA/EIA568 Cat 5 - EN50173-1D	TIA/EIA568 - EN50173
Dielectric withstanding voltage	900VAC - 1 minute leakage current <2mA	MIL-STD-38999
Thermal Shock	+25 cycles -40 °C to +85 °C	MIL-STD-38999
Ground Resistance (*)	0.1mA - 1,5VDC Pass if <=2.5 mOhm	MIL-STD-38999
Insulation Resistance	500VDC - 1 minute =>5 Gohm	MIL-STD-38999
Ethernet compliance Test (*)	Compliant with TIA/EIA568 Cat 5e - EN50173-1D	TIA/EIA568 - EN50173

List of tests – lista delle prove:	Description - Descrizione	Standard applicable – norme applicabili
Dielectric withstanding voltage	900VAC - 1 minute leakage current <2mA	MIL-STD-38999
Thermal Shock	+50 cycles -40 °C to +85 °C	MIL-STD-38999
Ground Resistance (*)	0.1mA - 1,5VDC Pass if <=2.5 mOhm	MIL-STD-38999
Insulation Resistance	500VDC - 1 minute =>5 Gohm	MIL-STD-38999
Ethernet compliance Test (*)	Compliant with TIA/EIA568 Cat 5e - EN50173-1D	TIA/EIA568 - EN50173
Dielectric withstanding voltage	900VAC - 1 minute leakage current <2mA	MIL-STD-38999
Water tightness (*)	IP68 - 1 Bar - 12 hours	CEI EN 60529
Group 3 VIBRATION		
Samples Tested: SN5 RDPe 001/14; SN6 RDPe 001/14		
Ground Resistance (*)	0.1 mA - 1,5 VDC Pass if <=2.5 mOhm	MIL-STD-38999
Insulation Resistance	500 VDC - 1 minute =>5 Gohm	MIL-STD-38999
Ethernet compliance Test (*)	Compliant with TIA/EIA568 Cat 5e - EN50173-1D	TIA/EIA568 - EN50173
Dielectric withstanding voltage	900 VAC - 1 minute leakage current <2 mA	MIL-STD-38999
Vibration	MIL-STD-202G Method 204 D sine Test condition D (20g peak) - 10% reduced (2G) 3 axis - 1 hour each axis	MIL-STD-202G
Ground Resistance (*)	0.1 mA - 1,5 VDC Pass if <=2.5 mOhm	MIL-STD-38999
Insulation Resistance	500 VDC - 1 minute =>5 Gohm	MIL-STD-38999
Ethernet compliance Test (*)	Compliant with TIA/EIA568 Cat 5e - EN50173-1D	TIA/EIA568 - EN50173
Dielectric withstanding voltage	900 VAC - 1 minute leakage current <2 mA	MIL-STD-38999
Vibration	MIL-STD-202G Method 204 D sine Test condition D (20g peak) - 30% reduced (6G) 3 axis - 1 hour each axis	MIL-STD-202G
Ground Resistance (*)	0.1 mA - 1,5 VDC Pass if <=2.5 mOhm	MIL-STD-38999
Insulation Resistance	500 VDC - 1 minute =>5 Gohm	MIL-STD-38999
Ethernet compliance Test (*)	Compliant with TIA/EIA568 Cat 5e - EN50173-1D	TIA/EIA568 - EN50173
Dielectric withstanding voltage	900 VAC - 1 minute leakage current <2 mA	MIL-STD-38999

List of tests – lista delle prove:	Description - Descrizione	Standard applicable – norme applicabili
Vibration	MIL-STD-202G Method 204 D sine Test condition D (20g peak) - 50% reduced (10G) 3 axis - 1 hour each axis	MIL-STD-202G
Ground Resistance (*)	0.1 mA - 1,5VDC Pass if <=2.5 mOhm	MIL-STD-38999
Insulation Resistance	500 VDC - 1 minute =>5 Gohm	MIL-STD-38999
Ethernet compliance Test (*)	Compliant with TIA/EIA568 Cat 5e - EN50173-1D	TIA/EIA568 - EN50173
Dielectric withstanding voltage	900 VAC - 1 minute leakage current <2 mA	MIL-STD-38999
Vibration	MIL-STD-202G Method 204 D sine Test condition D (20g peak) 3 axis - 1 hour each axis	MIL-STD-202G
Ground Resistance (*)	0.1mA - 1,5 VDC Pass if <=2.5 mOhm	MIL-STD-38999
Insulation Resistance	500 VDC - 1 minute =>5 Gohm	MIL-STD-38999
Ethernet compliance Test (*)	Compliant with TIA/EIA568 Cat 5e - EN50173-1D	TIA/EIA568 - EN50173
Dielectric withstanding voltage	900 VAC - 1 minute leakage current <2 mA	MIL-STD-38999
Vibration	MIL-STD-202G Method 204 D sine Test condition D (20 g peak) 3 axis - 8 hour each axis	MIL-STD-202G
Ground Resistance (*)	0.1mA - 1,5 VDC Pass if <=2.5 mOhm	MIL-STD-38999
Insulation Resistance	500 VDC - 1 minute =>5 Gohm	MIL-STD-38999
Ethernet compliance Test (*)	Compliant with TIA/EIA568 Cat 5e - EN50173-1D	TIA/EIA568 - EN50173
Dielectric withstanding voltage	900 VAC - 1 minute leakage current <2mA	MIL-STD-38999
Watertightness (*)	IP68 - 1 Bar - 12 hours	CEI EN 60529
Group 4 MATING CYCLE		
Sample Tested: SN3 RDPe 001/14		
Ground Resistance (*)	0.1mA - 1,5 VDC Pass if <=2.5 mOhm	MIL-STD-38999
Insulation Resistance	500 VDC - 1 minute =>5 Gohm	MIL-STD-38999
Ethernet compliance Test (*)	Compliant with TIA/EIA568 Cat 5e - EN50173-1D	TIA/EIA568 - EN50173
Dielectric withstanding voltage	900 VAC - 1 minute leakage current <2 mA	MIL-STD-38999
Mating Cycle	100 cycles	MIL-STD-38999
Ground Resistance (*)	0.1mA - 1,5 VDC Pass if <=2.5 mOhm	MIL-STD-38999
Insulation Resistance	500 VDC - 1 minute =>5 Gohm	MIL-STD-38999

List of tests – lista delle prove:	Description - Descrizione	Standard applicable – norme applicabili
Ethernet compliance Test (*)	Compliant with TIA/EIA568 Cat 5e - EN50173-1D	TIA/EIA568 - EN50173
Dielectric withstanding voltage	900 VAC - 1 minute leakage current <2 mA	MIL-STD-38999
Mating Cycle	+150 cycles	MIL-STD-38999
Ground Resistance (*)	0.1 mA - 1,5 VDC Pass if <=2.5 mOhm	MIL-STD-38999
Insulation Resistance	500 VDC - 1 minute =>5 Gohm	MIL-STD-38999
Ethernet compliance Test (*)	Compliant with TIA/EIA568 Cat 5e - EN50173-1D	TIA/EIA568 - EN50173
Dielectric withstanding voltage	900 VAC - 1 minute leakage current <2mA	MIL-STD-38999
Mating Cycle	+250 cycles	MIL-STD-38999
Ground Resistance (*)	0.1 mA - 1,5 VDC Pass if <=2.5 mOhm	MIL-STD-38999
Insulation Resistance	500VDC - 1 minute =>5 Gohm	MIL-STD-38999
Ethernet compliance Test (*)	Compliant with TIA/EIA568 Cat 5 - EN50173-1D	TIA/EIA568 - EN50173
Dielectric withstanding voltage	900 VAC - 1 minute leakage current <2mA	MIL-STD-38999
Mating Cycle	+500 cycles	MIL-STD-38999
Ground Resistance (*)	0.1 mA - 1,5 VDC Pass if <=2.5 mOhm	MIL-STD-38999
Insulation Resistance	500 VDC - 1 minute =>5 Gohm	MIL-STD-38999
Ethernet compliance Test (*)	Compliant with TIA/EIA568 Cat 5e - EN50173-1D	TIA/EIA568 - EN50173
Dielectric withstanding voltage	900 VAC - 1 minute leakage current <2 mA	MIL-STD-38999

(*) Tests out of the laboratory scope of approval

Test methods cross reference

List of tests – lista delle prove:	IEC standard	MIL standard
Insulation Resistance	IEC 60512-3-1	MIL-STD-38999
Dielectric withstanding voltage	IEC 60512-4-1	MIL-STD-38999
Thermal Shock	IEC 60068-2-14	MIL-STD-38999
Vibration	IEC 60068-2-6	MIL-STD-202G

Comments / remarks – commenti / osservazioni**:**

- After about 25 cycles of the last 50 cycles the cable of the receptacle and the cable of the plug show damage on the external sheet. However, the qualification concerns the connectors and on the connectors there are not presence of damages or other defects.

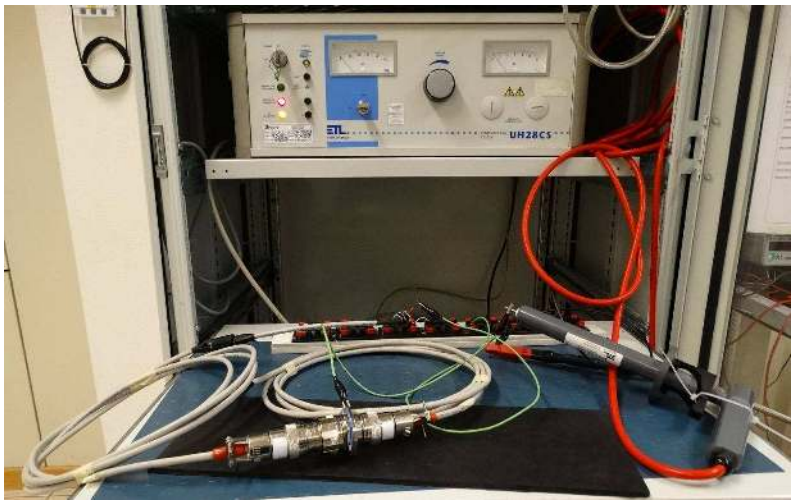
- Together with the connectors received, there were some inserts, which were not assembled to connectors. Those samples failed the ethernet test (NEXT), however those samples do not concern the qualification of the assembled connectors.

1. Dielectric Withstanding voltage

1.1. Description of Test method procedure – Descrizione della procedura del metodo di prova

The connectors are mated and connected to the test equipment. Test voltage is applied in steps of 100 Vac, starting from a first step of 500 Vac. Voltage frequency of 50 Hz applies for all tests. The voltage is applied for 1 minute and between each contact against all the others and the shell part.

Test Set-up for dielectric withstanding voltage test



1.2. Items tested – campioni sottoposti a prova

SN4P RDPe001/2014 mated with SN4R RDPe001/2014

1.3. Relevant equipment – strumenti utilizzati

Equipment / Identification- strumenti / numero di matricola	**Manufacturer / model** – marca / modello	**Calibration expiration date** – scadenza taratura
Dielectric breakdown tester/ UH28CS	**Etl-Prueftechnik/ UH28CS**	**04/16**

1.4. Requirement - requisiti

Current Leak: <2 mA

1.5. Date and place of test – data e luogo della prova

12/12/14 - Glenair Italia S.p.A. Testlab – Electrical Test Room

1.6. Environmental conditions – condizioni ambientali

Temperature: 22,2 °C
Humidity: 29,3 %

1.7. Result – risultati

Applied voltage ->	**500 VAC**	**600 VAC**	**700 VAC**	**800 VAC**	**900 VAC**
Cable	**Leakage current (mA)**				
Orange	0,1	0,1	0,15	0,2	0,2
White-Orange	0,1	0,1	0,15	0,2	0,2
Green	0,1	0,1	0,15	0,2	0,2
White-Green	0,1	0,1	0,15	0,2	0,2
Blue	0,1	0,1	0,15	0,2	0,2
White-blue	<0,1	0,1	0,15	0,2	0,2
Brown	0,1	0,1	0,15	0,2	0,2
White-Brown	0,1	0,1	0,15	0,2	0,2

Applied voltage ->	**1000 VAC**	**1100 VAC**	**1200 VAC**	**1300 VAC**
Cable	**Leakage current (mA)**			
Orange	0,2	0,2	0,25 (1*)	0,3
White-Orange	0,2	0,2	0,25	0,3
Green	0,2	0,2	0,25 (1*)	0,3 (1*)
White-Green	0,2	0,2	0,25	Breakdown
Blue	0,2	0,2	0,25	0,3-3 (*2)
White-blue	0,2	0,2	0,25	Breakdown
Brown	0,2	0,2	0,25	0,3
White-Brown	0,2	0,2	0,25	Breakdown

1*: short time spark at the beginning of test, after that the leakage current is stable.
2*: Continuos sparks from 0,3 mA to 3 mA.

1.8. Comments / remarks – commenti / osservazioni

The connectors have the breakdown discharge at 1300VAC, so we consider as Test Voltage: 900VAC.

2. Thermal Shock

2.1. Description of Test method procedure – Descrizione della procedura del metodo di prova

The connectors are mated. Then they are subjected to cycles of:

-40 °C 30 minutes
+85 °C 30 minutes.

The connectors are subjected to the following steps and number of cycles:

step1: 5 cycles
step2: +10 cycles
step3: +25 cycles
step4: +50 cycles.

Before step1 and after each step the connectors are subjected to the Pass/Fail criteria Test, which are as follows:

Visual inspection
Ground Resistance measurement: on the mated connectors is applied 1,5VDC & 0,1mA and measured the voltage drop between the cable clamp of the receptacle and the cable clamp of the plug.
Insulation Resistance measurement: at 500VDC for 1 minute between each contact against the others and the shell.
Ethernet compliance Test: the mated connectors cable are connected to the Ethernet compliance certificatory tester, then a TIA/EIA568 Category 5 test and a EN50173 Category D test are made.
Dielectric withstanding voltage test: a voltage of 900VAC 50Hz is applied between each contacts and the others for 1 minute.
Water tightness Test IP68: only after the last step, the mated connectors with back-shell and cables protected by heat shrink boot are placed under water at 1BAR pressure for 16 hours. Then the connectors are removed from water, un-mated to check presence of water moisture inside the connectors and check insulation resistance.

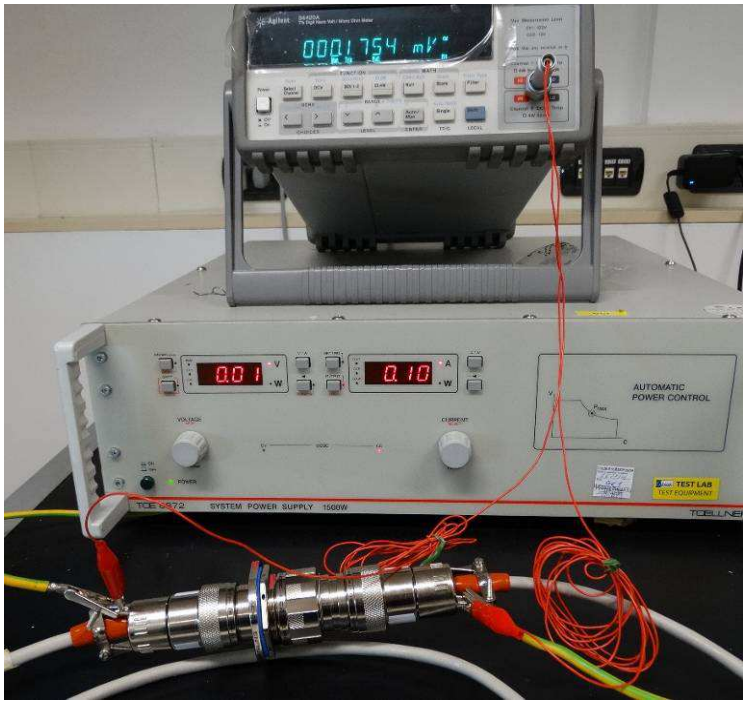
The thermal shock cycles were carried out manually and interrupted overnight.

Test Set-up for Thermal Shock Test

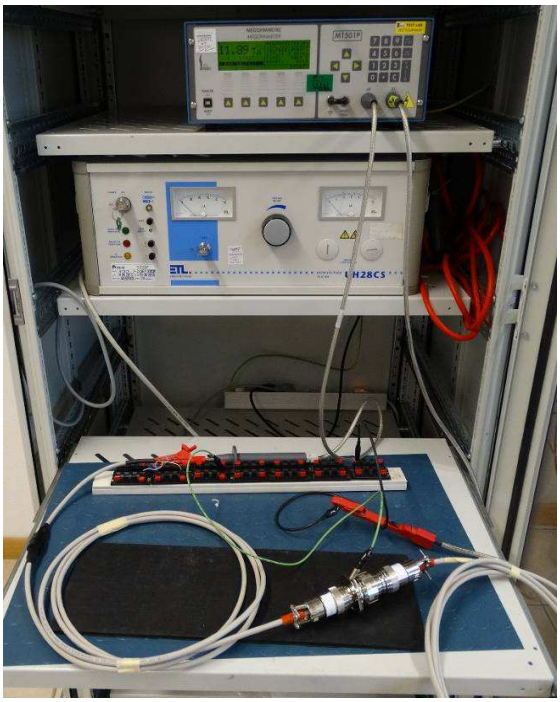
Connectors inside oven	Connectors inside refrigerator
	

PASS/FAIL Criteria test set-up

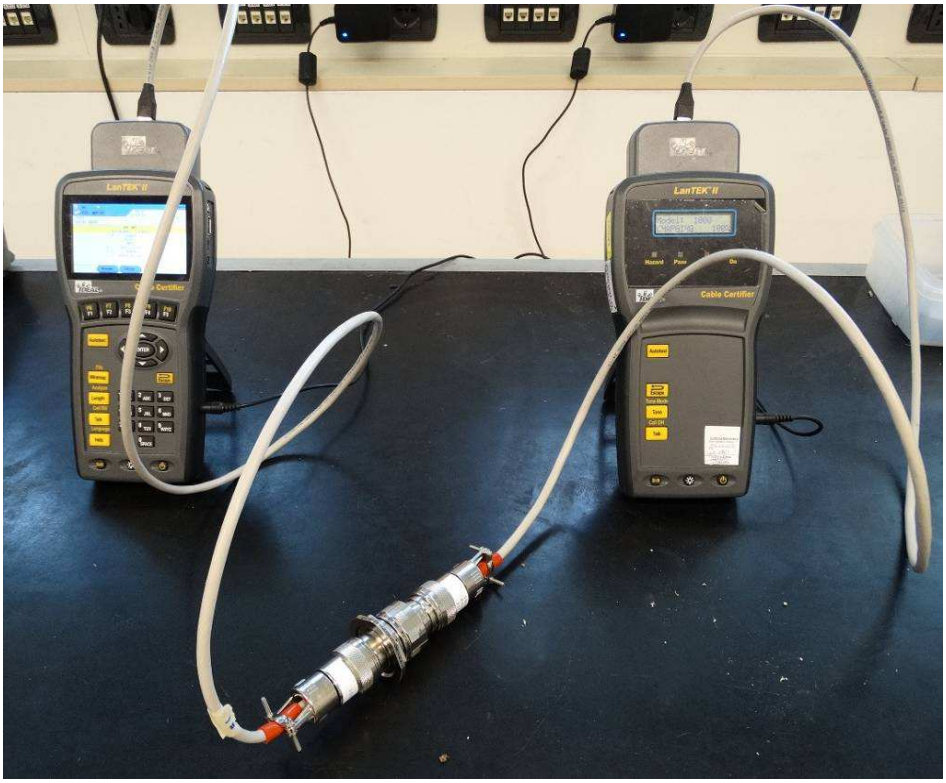
Test Set-up for ground resistance measurement



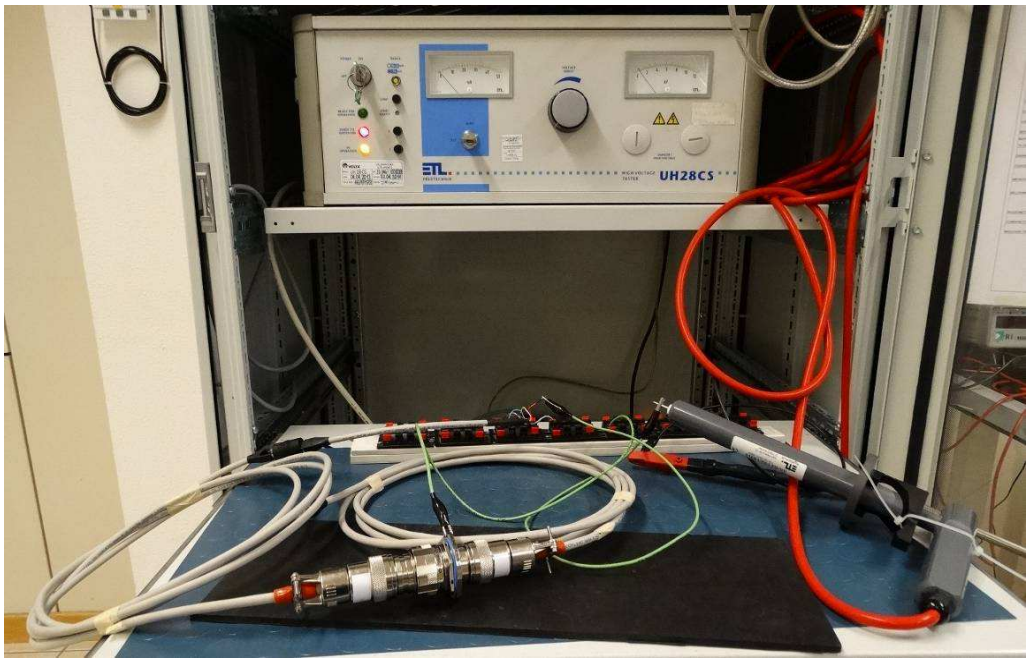
Test Set-up for insulation resistance measurement



Test Set-up for Ethernet Compliance Test



Test Set-up for dielectric withstanding voltage test



Test Set-up for Water-tightness Test
 

2.2. Items tested – campioni sottoposti a prova

SN1R RDPe001/14 mated with SN1P RDPe001/14
SN2R RDPe001/14 mated with SN2P RDPe001/14

2.3. Relevant equipment – strumenti utilizzati

Equipment / Identification- strumenti / numero di matricola	**Manufacturer / model** – marca / modello	**Calibration expiration date** – scadenza taratura
Thermal Shock		
Oven / FO16	**Fratelli Galli / G-2100**	**07/14**
Refrigerator / FR1	**Angelantoni / PR 85 C**	**07/14**
Temperature probe / TC01	**Thermocouple T**	**07/14**
Temperature probe / TC02	**Thermocouple T**	**07/14**
Data Logger / TC-08	**PICO TECHNOLOGY / TC-08**	**07/14**
Insulation resistance		
Megaohmmeter/ R7	**Sefelec/ M1501M**	**09/14**
Ground Resistance		
Voltmeter / NV01	**Agilent / 34420 A**	**03/14**
Power supplier GC1	**Toelnerr / TOE 8872/40**	**07/14**
Ethernet Test		
Ethernet Cables Tester/ LK7G/1	**Lantek Ideal / Lantek II**	**02/15**
Dielectric Withstanding Voltage		
Dielectric breakdown tester/ UH28CS	**Etl-Prueftechnik/ UH28CS**	**04/16**
Watertightness Test		
Pressure gauges/ MAN11	**Wikia / 0-2.5BAR Kl.1.6**	**06/14**

2.4. Requirement - requisiti

Visual inspection: Absence of mechanical cracks/irregularities
Ground Resistance: <=2,5 mohm
Insulation Resistance: >5 Gohm
Dielectric Withstanding Voltage: nor breakdown nor flashover detected, current Leak: <2 mA
Compliant with TIA/EIA568 cat 5e and EN50173 D
Water-tightness: absence of moisture inside the connector.

2.5. Date and place of test – data e luogo della prova

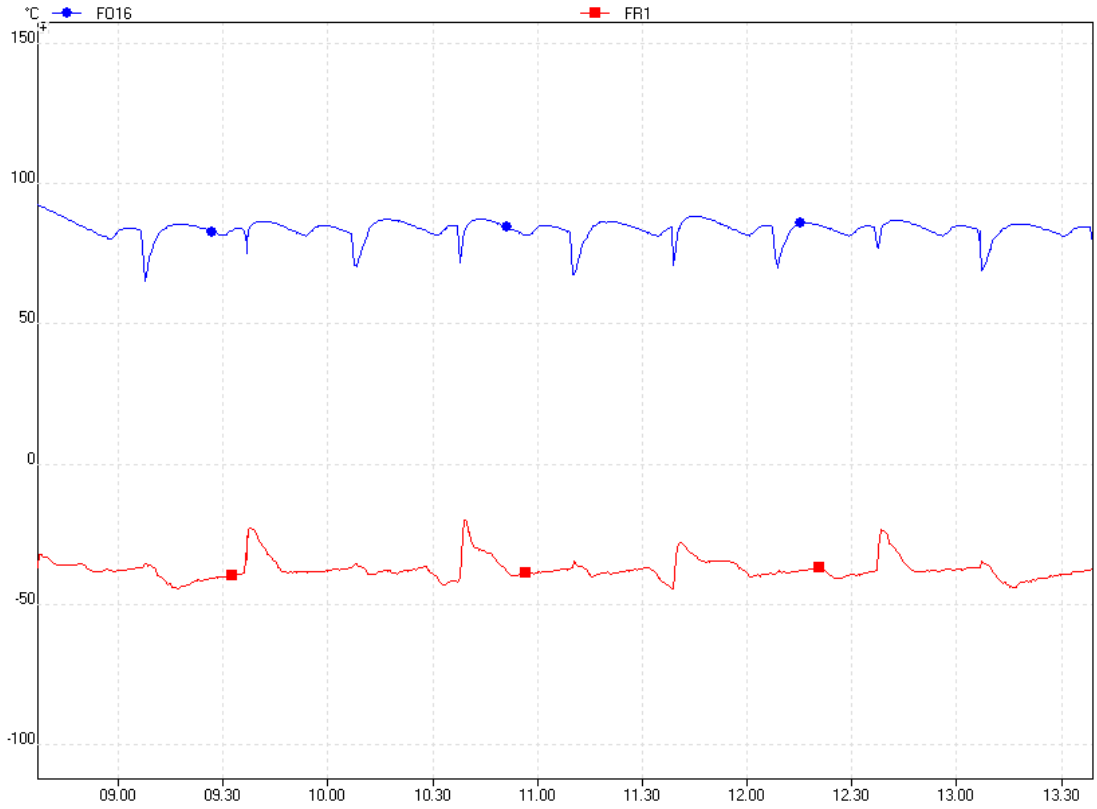
Place of test: Glenair Italia S.p.A. Testlab – Environmental Test Room

Step1: 5 cycles: 17/12/13
Step2: 10 cycles: 18-19/12/13
Step3: 20 cycles: 20-27/12/13
Step4: 50 cycles: 09-21/01/14

2.6. Environmental conditions – condizioni ambientali

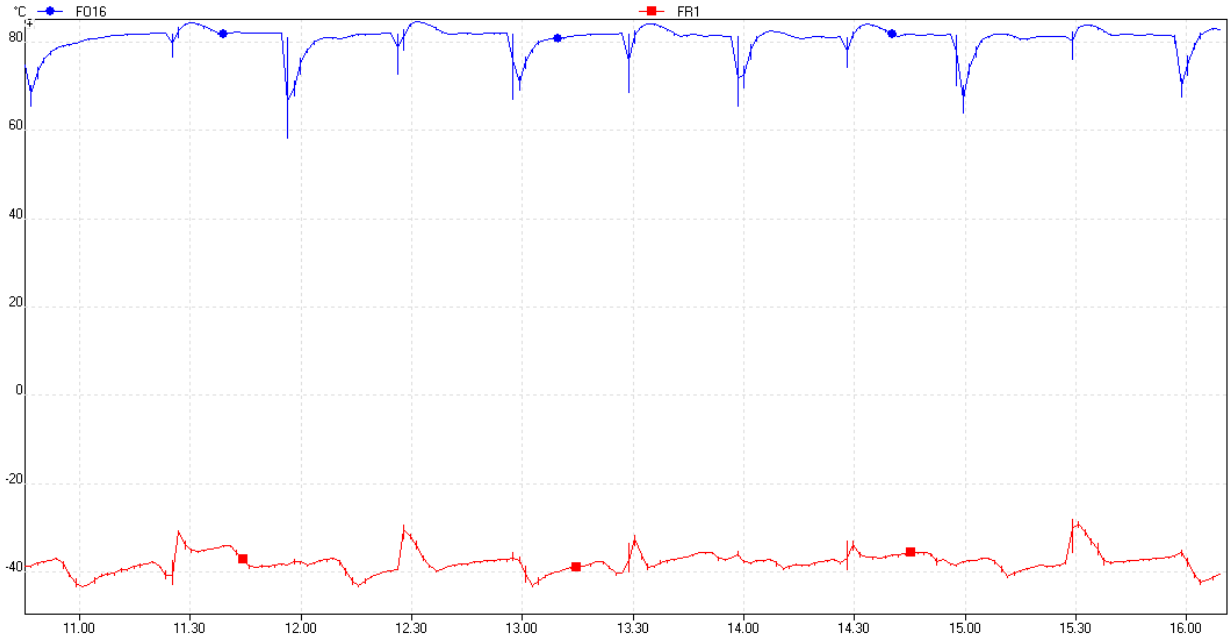
Step1: 5 cycles:

17/12/2013 Day 1 – 5 cycles:

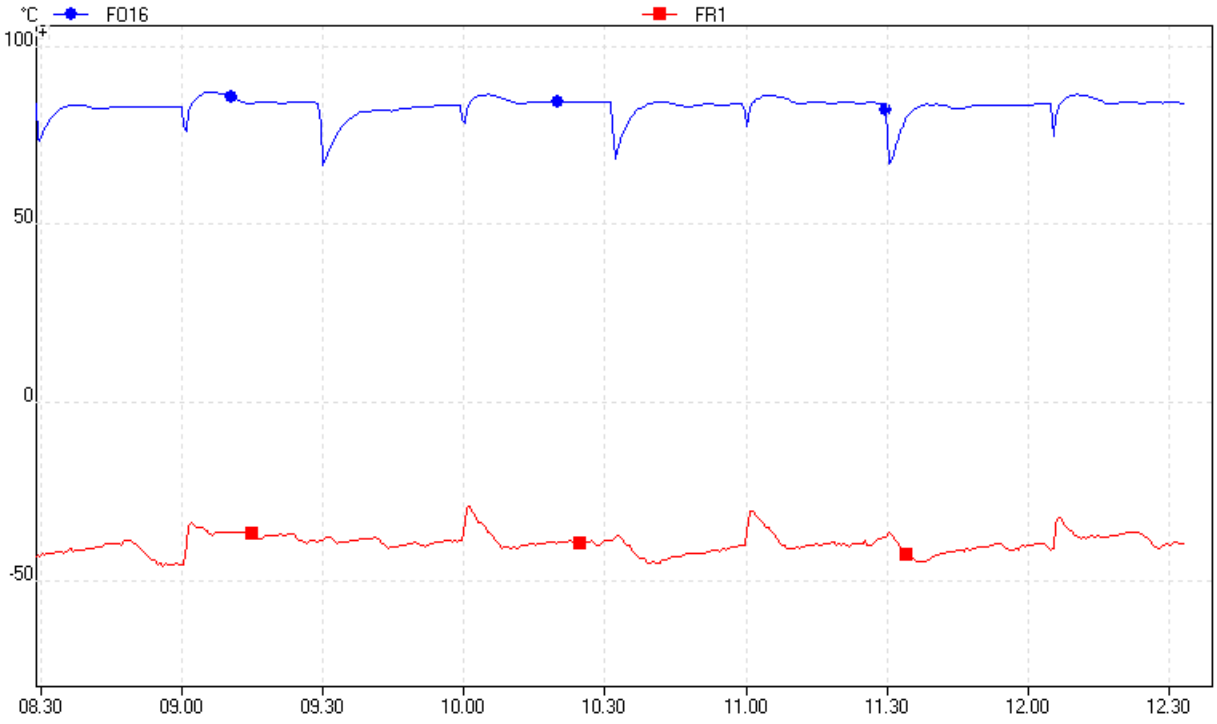


Step2: 10 cycles

18/12/2013 Day 1 - 6 cycles:

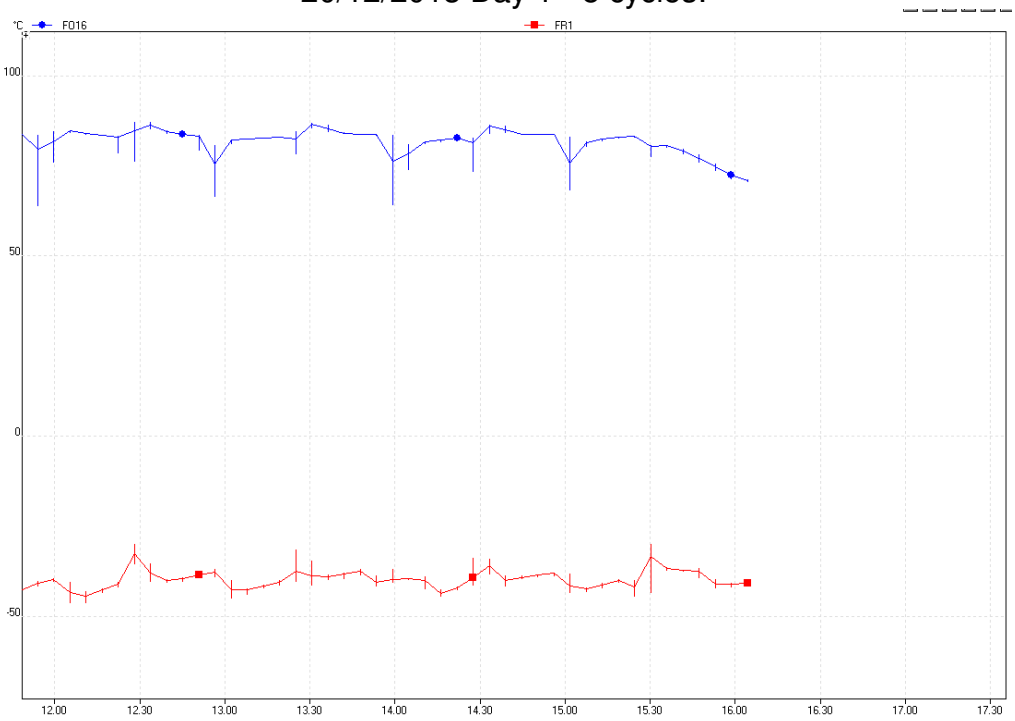


19/12/2013 Day 2 - 4 cycles:

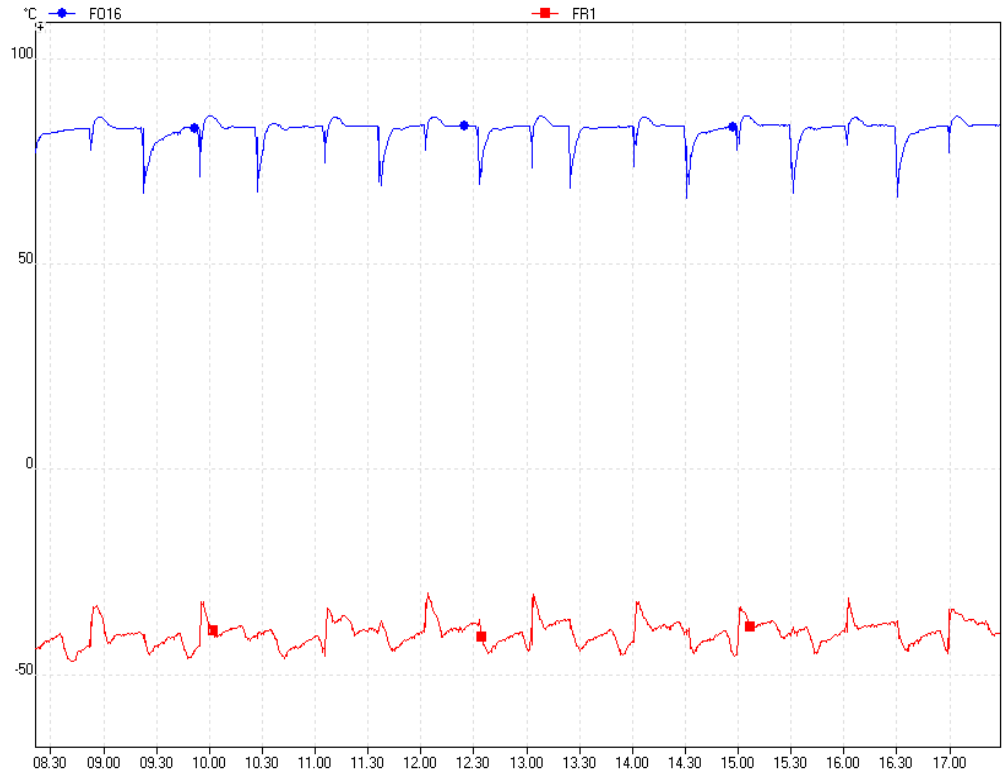


Step3: 20 cycles

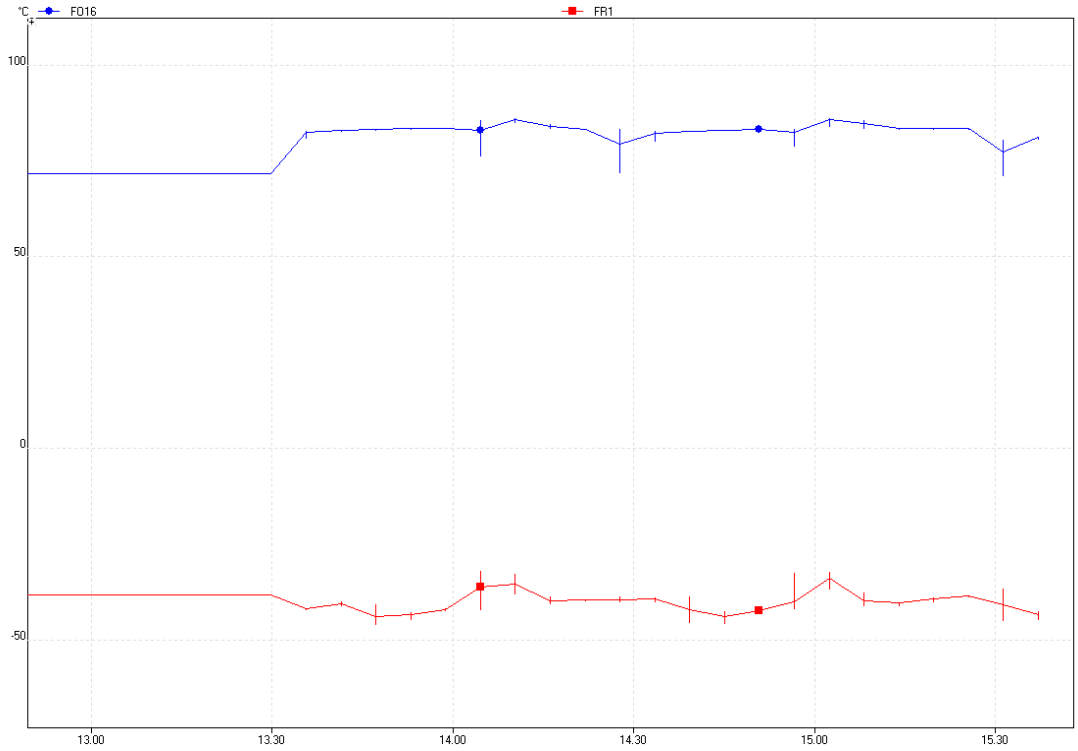
20/12/2013 Day 1 - 8 cycles:



23/12/2013 Day 2 - 9 cycles:

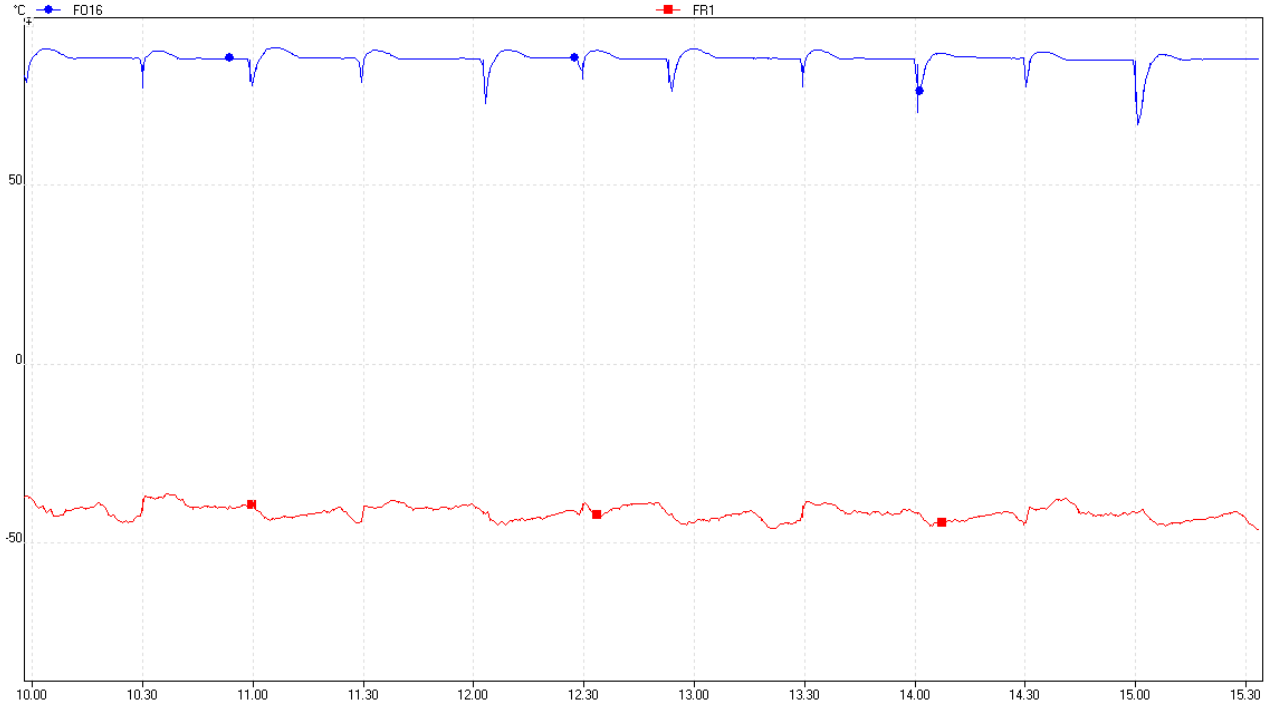


24/12/2013 Day 3 - 3 cycles:

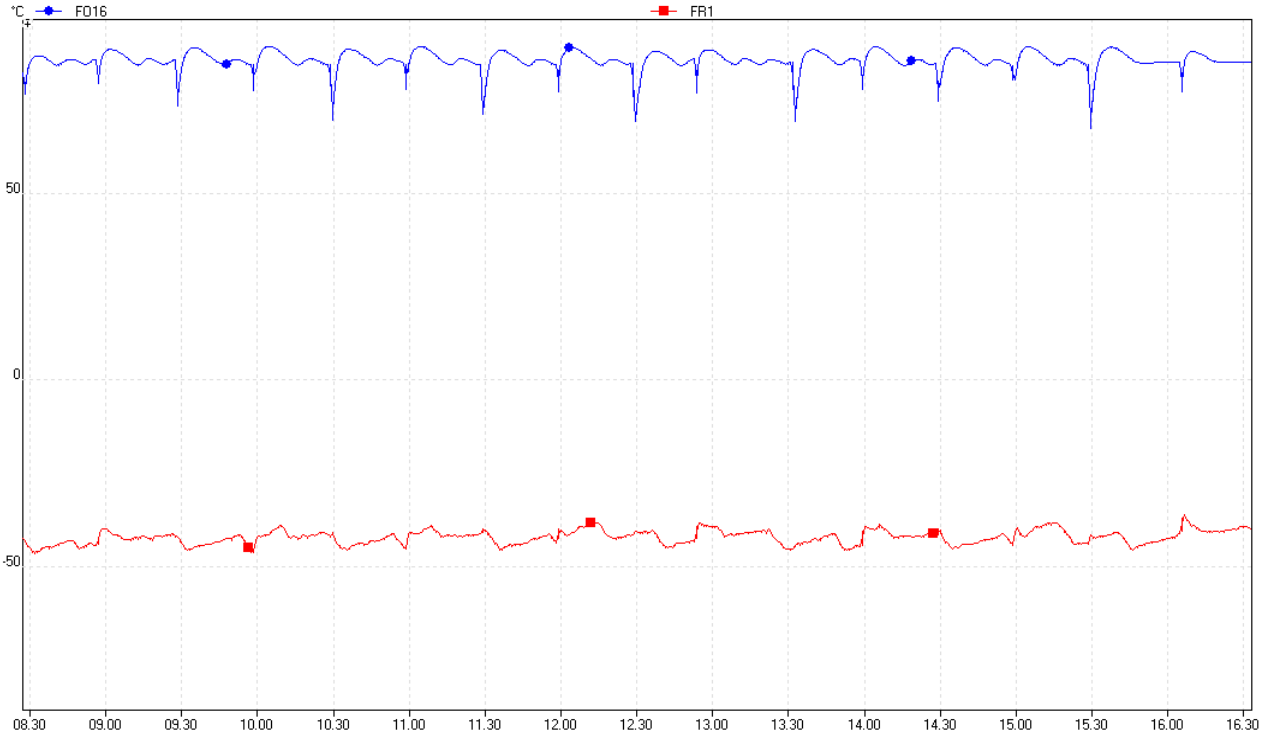


Step4: 50 cycles:

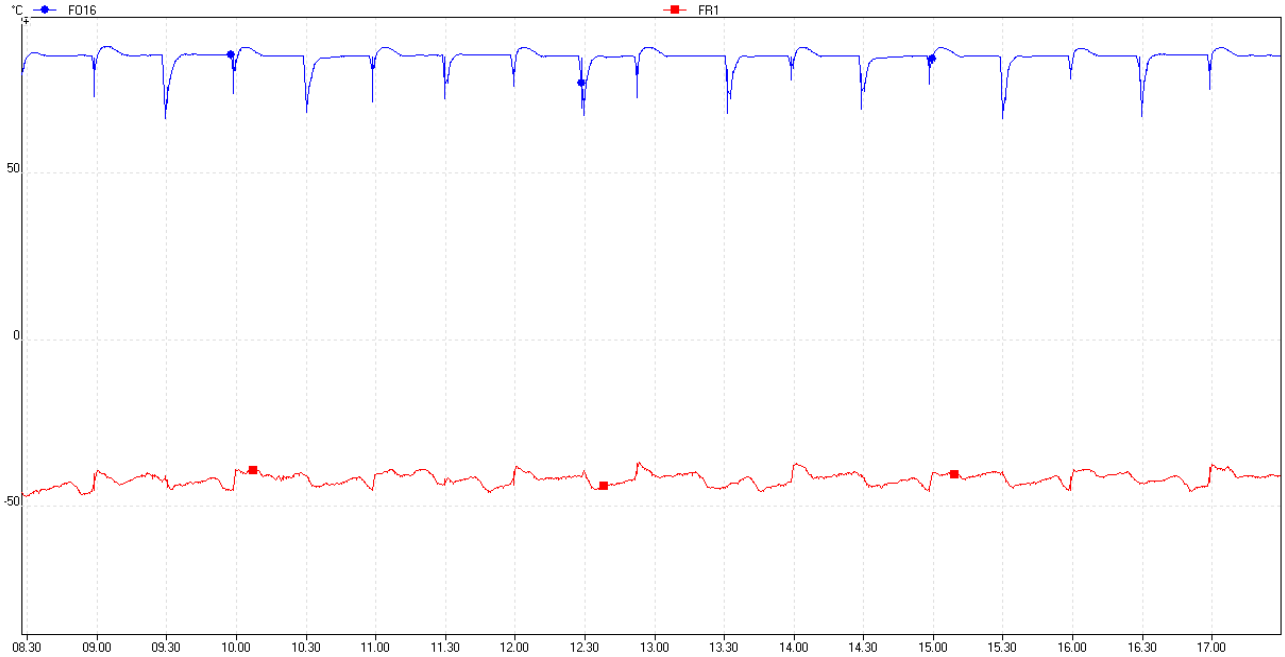
09/01/2014 Day 1 - 7 cycles:



10/01/2014 Day 2 - 8 cycles:

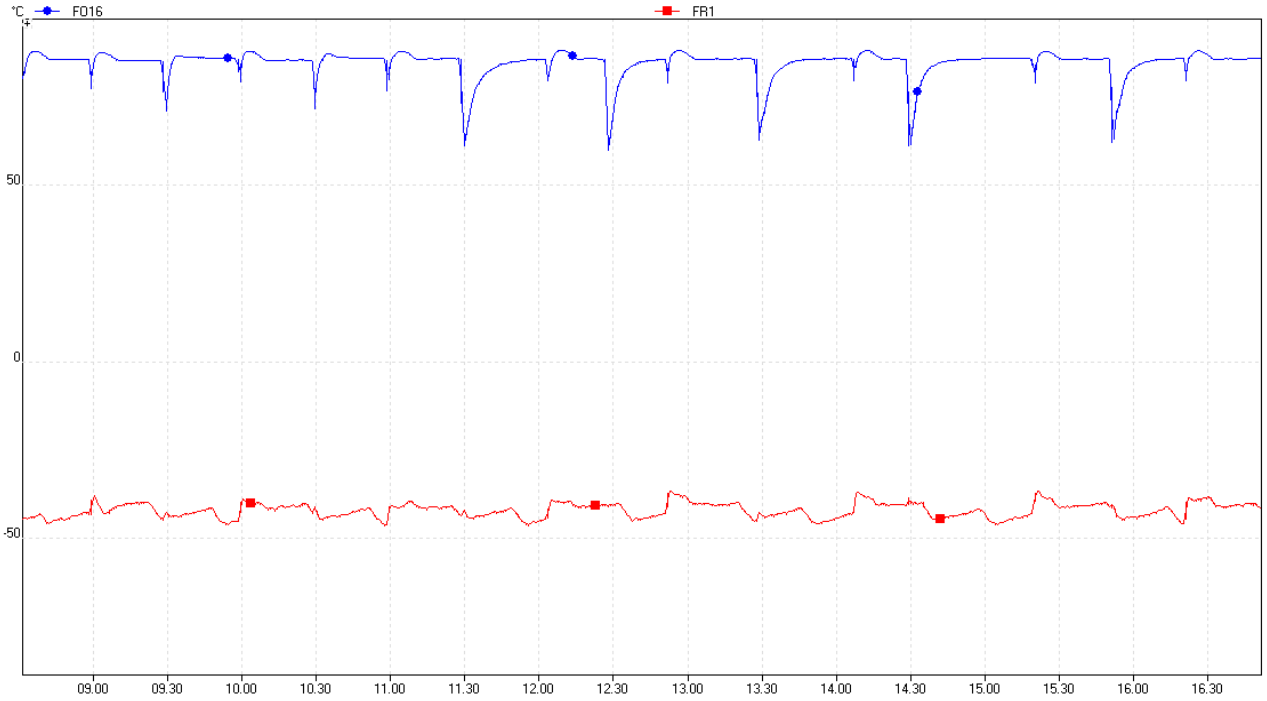


14/01/2014 Day 3 - 9 cycles:

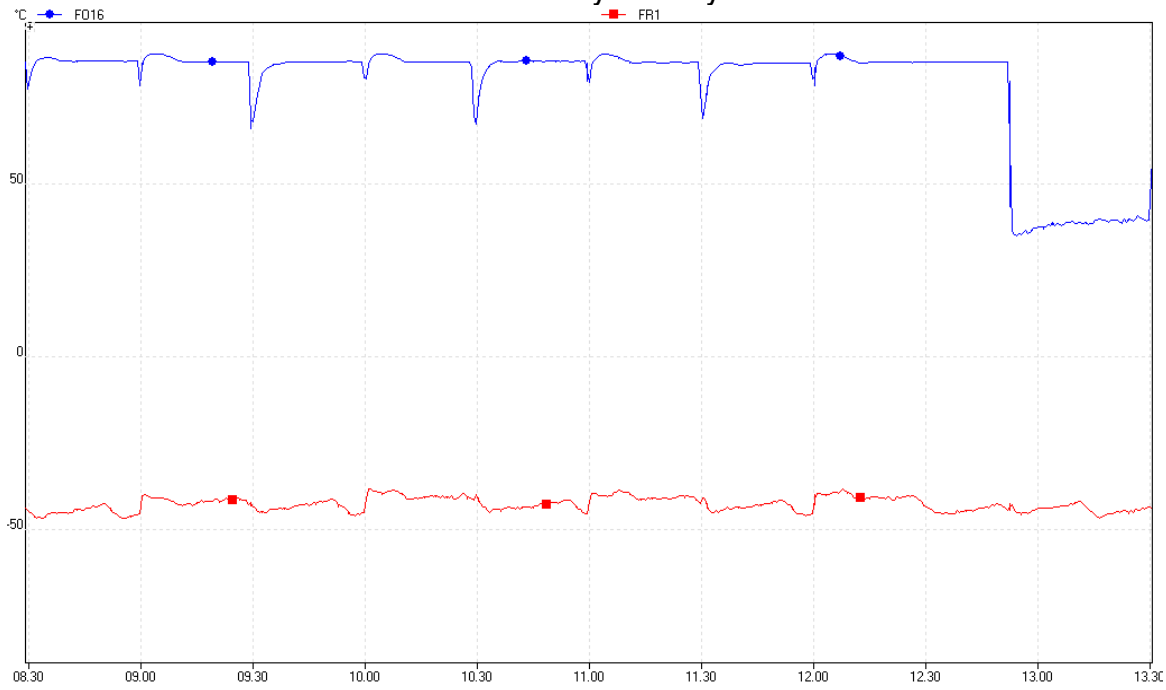


15/01/14 Day 4 – 6 cycles:

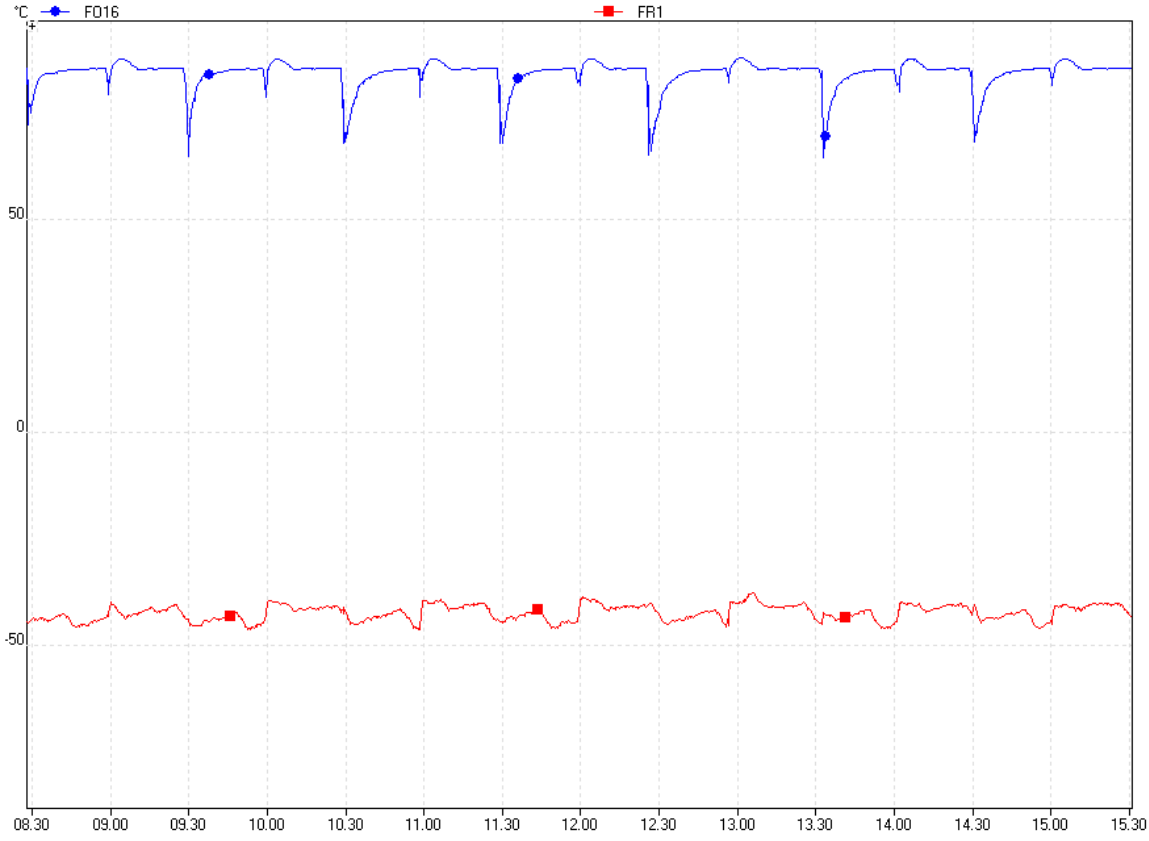
16/01/14 Day 5 – 8 cycles:



20/01/2014 Day 6 - 5 cycles:



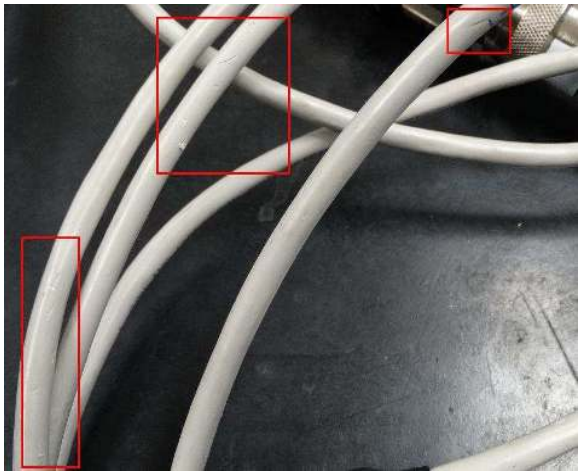
21/01/2014 Day 7 - 7 cycles:

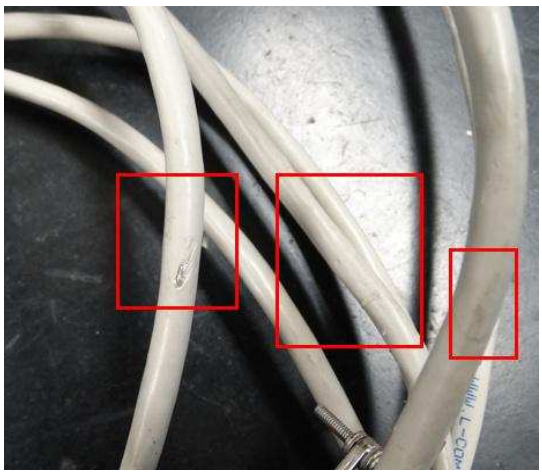


2.7. Result – risultati

Visual examination:

After 5 cycles: No evidence of damages or other defects on the connectors.
After 10 cycles: No evidence of damages or other defects on the connectors.
After 20 cycles: No evidence of damages or other defects on the connectors.
After 50 cycles: After 25 cycles of the last 50 cycles the cable of the receptacle and the cable of the plug show damages on the external sheet. However, this does not affect the qualification tests of the connectors.





RESULT: PASS

Ground Resistance (<=2,5mohm):

Before the first cycle		
Cable	Ground Resistance (1,5VDC - 100mA)	
	SN1	SN2
Measure (mV)	0,175	0,072
Result (mohm)	1,75	0,72

After 5 cycles			After 10cycles		
Cable	Ground Resistance (1,5VDC - 100mA)		Cable	Ground Resistance (1,5VDC - 100mA)	
	SN1	SN2		SN1	SN2
Measure (mV)	0,072	0,069	Measure (mV)	0,074	0,063
Result (mohm)	0,72	0,69	Result (mohm)	0,74	0,63

20 cycles			50 cycles		
Cable	Ground Resistance (1,5VDC – 100mA)		Cable	Ground Resistance (1,5VDC - 100mA)	
	SN1	SN2		SN1	SN2
Measure (mV)	0,089	0,065	Measure (mV)	0,051	0,077
Result (mohm)	0,89	0,65	Result (mohm)	0,51	0,77

RESULT: PASS

Insulation resistance (>5 Gohm):

Before the first cycle		
Cable	500VDC - 1minutes (GOHM)	
	SN1	SN2
Orange	2380	1422
White-Orange	3050	1420
Green	1825	8650
White-Green	3270	1496
Blue	1627	5230
White-blue	10260	8930
Brown	5640	14540
White-Brown	11930	42100

5 cycles			10 cycles		
Cable	500VDC - 1minutes (GOHM)		Cable	500VDC - 1minutes (GOHM)	
	SN1	SN2		SN1	SN2
Orange	9220	41700	Orange	845	27500
White-Orange	7790	20800	White-Orange	5110	15730
Green	8060	21200	Green	6010	24100
White-Green	9360	108000	White-Green	5040	24700
Blue	9190	22100	Blue	3410	24900
White-blue	30300	48000	White-blue	1097	26500
Brown	34600	120300	Brown	8440	23400
White-Brown	16780	65700	White-Brown	7980	18010

20 cycles			50 cycles		
Cable	500VDC - 1minutes (GOHM)		Cable	500VDC - 1minutes (GOHM)	
	SN1	SN2		SN1	SN2
Orange	6380	6120	Orange	4960	13490
White-Orange	4270	9220	White-Orange	5550	9800
Green	4970	9810	Green	2390	2770
White-Green	4920	5080	White-Green	4320	3920
Blue	332	6040	Blue	4450	3330
White-blue	310	9730	White-blue	2600	2710
Brown	9650	9570	Brown	9680	11210
White-Brown	6180	7670	White-Brown	8750	11400

RESULT: PASS

Dielectric Withstanding Voltage (I leak.<2mA):

Before the first cycle		
Cable	900VAC - 1minutes (mA)	
	SN1	SN2
Orange	0,1	0,1
White-Orange	0,1	0,1
Green	0,1	0,1
White-Green	0,1	0,1
Blue	0,1	0,1
White-blue	0,1	0,1
Brown	0,1	0,1
White-Brown	0,1	0,1

5 cycles			10 cycles		
Cable	900VAC - 1minutes (mA)		Cable	900VAC - 1minutes (mA)	
	SN1	SN2		SN1	SN2
Orange	0,1	0,1	Orange	0,1	0,1
White-Orange	0,1	0,1	White-Orange	0,1	0,1
Green	0,1	0,1	Green	0,1	0,1
White-Green	0,1	0,1	White-Green	0,1	0,1
Blue	0,1	0,1	Blue	0,1	0,1
White-blue	0,1	0,1	White-blue	0,1	0,1
Brown	0,1	0,1	Brown	0,1	0,1
White-Brown	0,1	0,1	White-Brown	0,1	0,1

20 cycles			50 cycles		
Cable	900VAC - 1minutes (mA)		Cable	900VAC - 1minutes (mA)	
	SN1	SN2		SN1	SN2
Orange	0,1	0,1	Orange	0,1	0,1
White-Orange	0,1	0,1	White-Orange	0,1	0,1
Green	0,1	0,1	Green	0,1	0,1
White-Green	0,1	0,1	White-Green	0,1	0,1
Blue	0,1	0,1	Blue	0,1	0,1
White-blue	0,1	0,1	White-blue	0,1	0,1
Brown	0,1	0,1	Brown	0,1	0,1
White-Brown	0,1	0,1	White-Brown	0,1	0,1

RESULT: PASS

Ethernet Test:

Before the first cycle		
	Ethernet CAT5e TEST	
	SN1	SN2
RESULT	PASS	PASS
	Ethernet EN D TEST	
	SN1	SN2
RESULT	PASS	PASS

5 cycles			10 cycles		
	Ethernet CAT5e TEST			Ethernet CAT5e TEST	
	SN1	SN2		SN1	SN2
RESULT	PASS	PASS	RESULT	PASS	PASS
	Ethernet EN D TEST			Ethernet EN D TEST	
	SN1	SN2		SN1	SN2
RESULT	PASS	PASS	RESULT	PASS	PASS
20 cycles			50 cycles		
	Ethernet CAT5e TEST			Ethernet CAT5e TEST	
	SN1	SN2		SN1	SN2
RESULT	PASS	PASS	RESULT	PASS	PASS
	Ethernet EN D TEST			Ethernet EN D TEST	
	SN1	SN2		SN1	SN2
RESULT	PASS	PASS	RESULT	PASS	PASS

SN1 at the beginning of qualification– Test based on TIA/EIA568 CAT5e Test:

IDEAL INDUSTRIES, Inc. Certified - Test Report

Job Name: SUPERS_38999.job
Company: COMPANY NAME

Report Date: Wednesday, February 19, 2014 12:24 PM
Version: 1.3.0.5

Summary:

All Cables	Twisted Pair	Coax/Twinax	Fiber
Total: 1	Total: 1	Total: 0	Total: 0
Pass: 1	Pass: 1	Pass: 0	Pass: 0
Fail: 0	Fail: 0	Fail: 0	Fail: 0
Tot. Length: 3,9m	Tot. Length: 3,9m	Tot. Length: 0m	Tot. Length: 0m

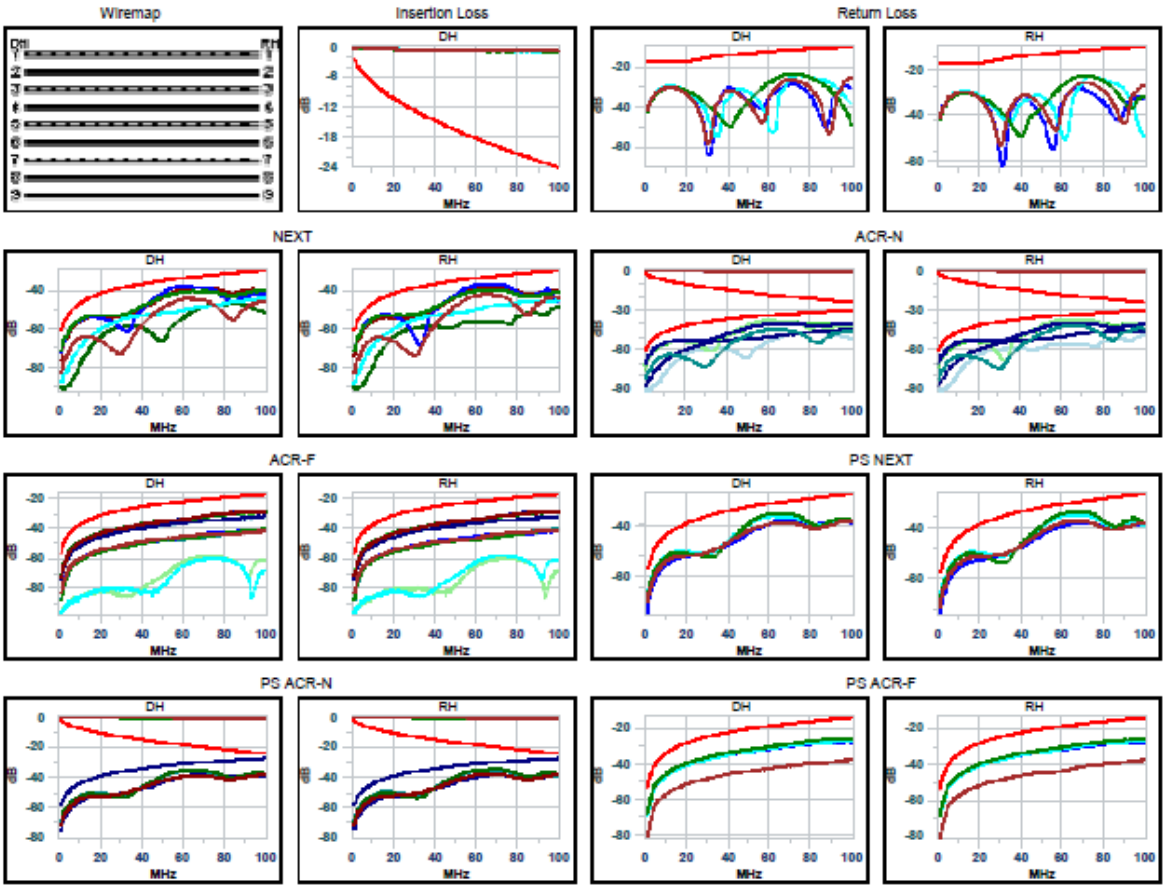
Pass

Test Name: SN1 SH5
Test Limit: CAT5E
Test Date: 12/18/2013
Test Time: 10:49:19
Adapter ID: 6004, Cat 6A Chan
User Notes:

NVP: 72
LANTEK II-1000 [948185/948240]
Firmware 2.012

Standard: TIA 568-B.2-Custom-Cust-Custom
Frequency Range: 1 - 100MHz
Operator: OPERATOR NAME
Contractor: CONTRACTOR NAME
Company: COMPANY NAME

	Result	Worst Case Value		Pairs	Limit	Margin		Pairs	Worst Overall Value	Limit	Margin
Wiremap	Pass	N/A		N/A	N/A	N/A					
Length	N/A	3,9 m.		1,2							
DC Resistance	Pass	2,0 ohms		1,2	20,0 ohms	18,0 ohms					
Capacitance	Pass	3,9 pF/m.		5,4	66,0 pF/m.	62,1 pF/m.					
Propagation Delay	Pass	20,0 ns		7,8	555,0 ns	535,0 ns					
Delay Skew	Pass	1,8 ns		7,8	50,0 ns	48,2 ns					
Insertion Loss	Pass	0,2 dB @ 1,0MHz	DH	7,8	< 2,2 dB	2,0 dB	DH	5,4	0,9 dB @ 100,0MHz	< 24,0 dB	23,1 dB
Return Loss	Pass	22,7 dB @ 69,5MHz	RH	3,6	> 11,6 dB	11,1 dB	RH	3,6	22,7 dB @ 72,3MHz	> 11,4 dB	11,3 dB
NEXT	Pass	37,6 dB @ 59,3MHz	RH	3,6-5,4	> 34,0 dB	3,6 dB	RH	3,6-5,4	37,2 dB @ 72,0MHz	> 32,5 dB	4,7 dB
ACR-N	Pass	64,8 dB @ 2,5MHz	RH	7,8-5,4	>= 53,4 dB	11,4 dB	RH	3,6-5,4	36,4 dB @ 71,0MHz	>= 12,7 dB	23,7 dB
ACR-F	Pass	30,1 dB @ 78,5MHz	RH	5,4-3,6	> 19,5 dB	10,6 dB	DH	5,4-3,6	28,3 dB @ 100,0MHz	> 17,4 dB	10,9 dB
Headroom	N/A	55,7 dB		N/A	N/A	N/A					
PS NEXT	Pass	34,5 dB @ 61,8MHz	RH	3,6	> 30,7 dB	3,8 dB	RH	3,6	34,2 dB @ 71,5MHz	> 29,6 dB	4,6 dB
PS ACR-N	Pass	64,9 dB @ 1,8MHz	RH	5,4	> 53,5 dB	11,4 dB	RH	3,6	33,4 dB @ 71,0MHz	> 9,7 dB	23,7 dB
PS ACR-F	Pass	26,8 dB @ 82,3MHz	DH	3,6	> 16,1 dB	10,7 dB	RH	3,6	25,5 dB @ 100,0MHz	> 14,4 dB	11,1 dB



SN1 at the beginning of qualification – Test based on EN50173 D:

IDEAL INDUSTRIES, Inc. Certified - Test Report

Job Name: SUPERS_38999.job
Company: COMPANY NAME

Report Date: Wednesday, February 19, 2014 12:24 PM
Version: 1.3.0.5

Summary:

All Cables	Twisted Pair	Coax/Twinax	Fiber
Total: 1	Total: 1	Total: 0	Total: 0
Pass: 1	Pass: 1	Pass: 0	Pass: 0
Fail: 0	Fail: 0	Fail: 0	Fail: 0
Tot. Length: 4,3m	Tot. Length: 4,3m	Tot. Length: 0m	Tot. Length: 0m

Pass

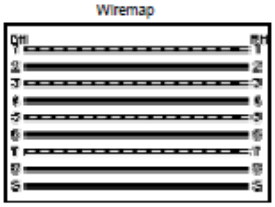
Test Name: SN1 SH5 EN
Test Limit: EN D
Test Date: 12/18/2013
Test Time: 09:57:35
Adapter ID: 6004, Cat 6A Chan
User Notes:

NVP: 79
LANTEK II-1000 [948185/948240]
Firmware 2.012

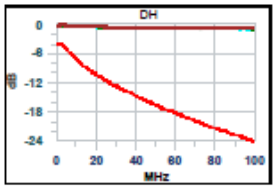
Standard: EN50173-1-Custom
Frequency Range: 1 - 100MHz
Operator: OPERATOR NAME
Contractor: CONTRACTOR NAME
Company: COMPANY NAME

	Result	Worst Case Value		Pairs	Limit	Margin		Pairs	Worst Overall Value	Limit	Margin
Wiremap	Pass	N/A		N/A	N/A	N/A					
Length	N/A	4,3 m.		1,2							
DC Resistance	Pass	2,0 ohms		1,2	25,0 ohms	23,0 ohms					
Capacitance	Pass	3,6 pF/m.		5,4	56,0 pF/m.	52,4 pF/m.					
Propagation Delay	Pass	20,0 ns		7,8	548,0 ns	528,0 ns					
Delay Skew	Pass	1,6 ns		7,8	50,0 ns	48,4 ns					
Insertion Loss	Pass	0,2 dB @ 1,0MHz	DH	7,8	< 4,0 dB	3,8 dB	DH	3,6	0,8 dB @ 100,0MHz	< 24,0 dB	23,2 dB
Return Loss	Pass	22,2 dB @ 74,0MHz	RH	5,4	> 11,3 dB	10,9 dB	RH	5,4	22,2 dB @ 74,5MHz	> 11,3 dB	10,9 dB
NEXT	Pass	33,0 dB @ 97,5MHz	RH	3,6-5,4	> 30,3 dB	2,7 dB	RH	3,6-5,4	32,9 dB @ 100,0MHz	> 30,1 dB	2,8 dB
ACR-N	Pass	65,4 dB @ 2,2MHz	RH	7,8-5,4	>= 53,8 dB	11,6 dB	RH	3,6-5,4	32,1 dB @ 98,8MHz	>= 6,3 dB	25,8 dB
ACR-F	Pass	30,6 dB @ 74,5MHz	DH	3,6-5,4	> 20,0 dB	10,6 dB	DH	3,6-5,4	28,4 dB @ 100,0MHz	> 17,4 dB	11,0 dB
PS NEXT	Pass	35,4 dB @ 57,0MHz	RH	3,6	> 31,3 dB	4,1 dB	RH	3,6	31,8 dB @ 99,3MHz	> 27,1 dB	4,7 dB
PS ACR-N	Pass	61,5 dB @ 2,8MHz	RH	5,4	> 49,1 dB	12,4 dB	RH	3,6	31,0 dB @ 98,8MHz	> 3,3 dB	27,7 dB
PS ACR-F	Pass	26,5 dB @ 84,5MHz	DH	3,6	> 15,9 dB	10,6 dB	DH	3,6	25,3 dB @ 100,0MHz	> 14,4 dB	10,9 dB

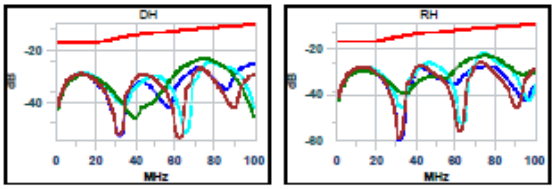
Wiremap



Insertion Loss



Return Loss



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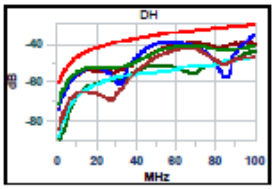
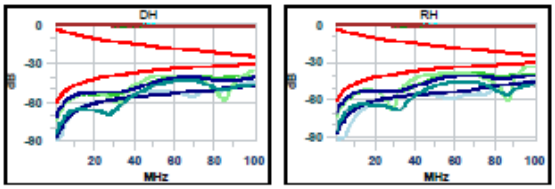
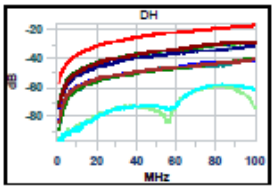


ACR-N



ACR-F



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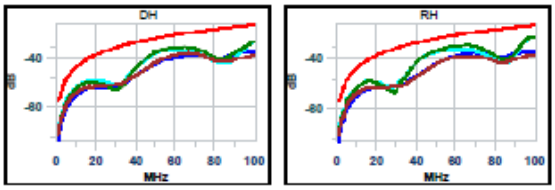
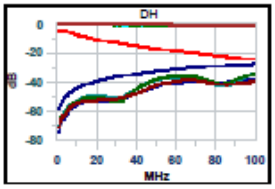
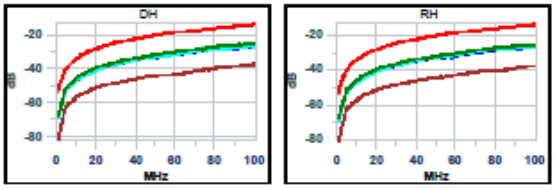


PS ACR-N



PS ACR-F



SN1 after 85 cycles of Thermal Shock – Test based on TIA/EIA568 CAT5e Test:

IDEAL INDUSTRIES, Inc. Certified - Test Report

Job Name: SUPERS_38999.job
Company: COMPANY NAME

Report Date: Wednesday, February 19, 2014 12:26 PM
Version: 1.3.0.5

Summary:

All Cables	Twisted Pair	Coax/Twinax	Fiber
Total: 1	Total: 1	Total: 0	Total: 0
Pass: 1	Pass: 1	Pass: 0	Pass: 0
Fail: 0	Fail: 0	Fail: 0	Fail: 0
Tot. Length: 3,9m	Tot. Length: 3,9m	Tot. Length: 0m	Tot. Length: 0m

Pass

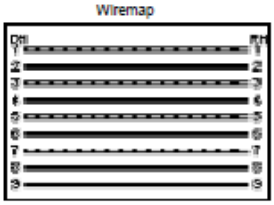
Test Name: SN1 SH50
Test Limit: CAT5E
Test Date: 1/22/2014
Test Time: 08:39:41
Adapter ID: 6004, Cat 6A Chan
User Notes:

NVP: 72
LANTEK II-1000 [948185/948240]
Firmware 2.012

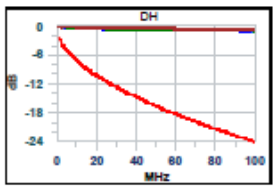
Standard: TIA 568-B.2-Custom-Cust-Custom
Frequency Range: 1 - 100MHz
Operator: OPERATOR NAME
Contractor: CONTRACTOR NAME
Company: COMPANY NAME

	Result	Worst Case Value		Pairs	Limit	Margin		Pairs	Worst Overall Value	Limit	Margin
Wiremap	Pass	N/A		N/A	N/A	N/A					
Length	N/A	3,9 m.		1,2							
DC Resistance	Pass	2,2 ohms		1,2	20,0 ohms	17,8 ohms					
Capacitance	Pass	3,8 pF/m.		3,6	66,0 pF/m.	62,2 pF/m.					
Propagation Delay	Pass	19,8 ns		7,8	555,0 ns	535,2 ns					
Delay Skew	Pass	1,6 ns		7,8	50,0 ns	48,4 ns					
Insertion Loss	Pass	0,1 dB @ 1,0MHz	DH	7,8	< 2,2 dB	2,1 dB	DH	1,2	0,9 dB @ 100,0MHz	< 24,0 dB	23,1 dB
Return Loss	Pass	24,9 dB @ 13,0MHz	RH	1,2	> 17,0 dB	7,9 dB	RH	3,6	21,3 dB @ 73,0MHz	> 11,4 dB	9,9 dB
NEXT	Pass	37,5 dB @ 48,5MHz	RH	3,6-5,4	> 35,5 dB	2,0 dB	RH	3,6-5,4	32,2 dB @ 100,0MHz	> 30,1 dB	2,1 dB
ACR-N	Pass	64,3 dB @ 2,5MHz	RH	3,6-5,4	>= 53,4 dB	10,9 dB	RH	3,6-5,4	31,4 dB @ 100,0MHz	>= 6,1 dB	25,3 dB
ACR-F	Pass	29,8 dB @ 81,5MHz	DH	3,6-5,4	> 19,2 dB	10,6 dB	DH	3,6-5,4	28,3 dB @ 100,0MHz	> 17,4 dB	10,9 dB
Headroom	N/A	54,5 dB		N/A	N/A	N/A					
PS NEXT	Pass	35,5 dB @ 51,0MHz	RH	3,6	> 32,1 dB	3,4 dB	RH	3,6	31,4 dB @ 100,0MHz	> 27,1 dB	4,3 dB
PS ACR-N	Pass	61,5 dB @ 2,5MHz	RH	5,4	> 50,4 dB	11,1 dB	RH	3,6	30,6 dB @ 100,0MHz	> 3,1 dB	27,5 dB
PS ACR-F	Pass	26,9 dB @ 80,3MHz	DH	3,6	> 16,3 dB	10,6 dB	DH	3,6	25,2 dB @ 100,0MHz	> 14,4 dB	10,8 dB

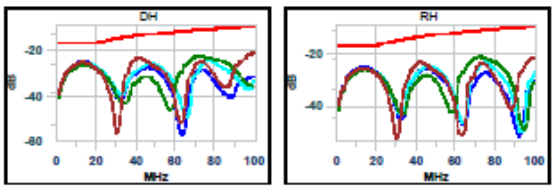
Wiremap



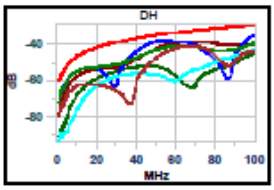
Insertion Loss



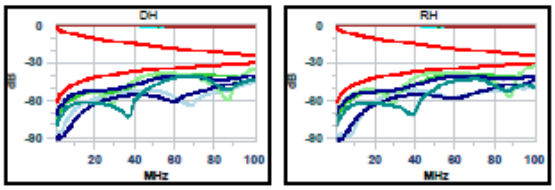
Return Loss



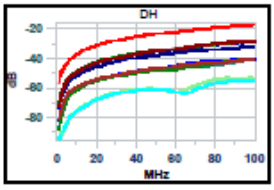
NEXT



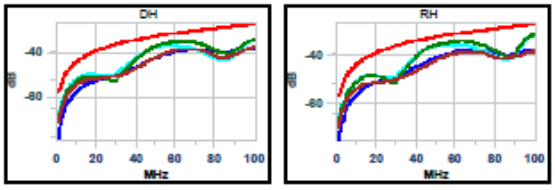
ACR-N



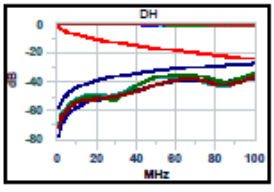
ACR-F



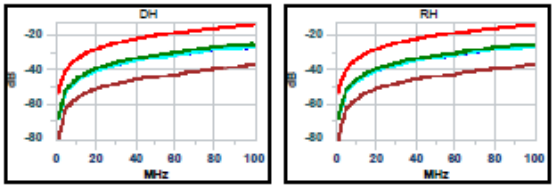
PS NEXT



PS ACR-N



PS ACR-F



SN1 after 85 cycles of Thermal Shock – Test based on EN50173 D:

IDEAL INDUSTRIES, Inc. Certified - Test Report

Job Name: SUPERS_38999.job
Company: COMPANY NAME

Report Date: Wednesday, February 19, 2014 12:27 PM
Version: 1.3.0.5

Summary:

All Cables	Twisted Pair	Coax/Twinax	Fiber
Total: 1	Total: 1	Total: 0	Total: 0
Pass: 1	Pass: 1	Pass: 0	Pass: 0
Fail: 0	Fail: 0	Fail: 0	Fail: 0
Tot. Length: 4,3m	Tot. Length: 4,3m	Tot. Length: 0m	Tot. Length: 0m

Pass

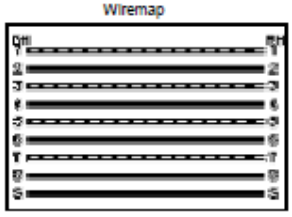
Test Name: SN1 SH50 EN
Test Limit: EN D
Test Date: 1/22/2014
Test Time: 08:38:42
Adapter ID: 6004, Cat 6A Chan
User Notes:

NVP: 79
LANTEK II-1000 [948165/948240]
Firmware 2.012

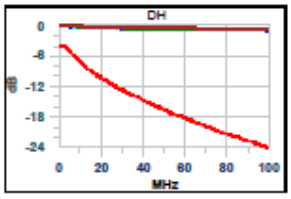
Standard: EN50173-1-Custom
Frequency Range: 1 - 100MHz
Operator: OPERATOR NAME
Contractor: CONTRACTOR NAME
Company: COMPANY NAME

	Result	Worst Case Value		Pairs	Limit	Margin		Pairs	Worst Overall Value	Limit	Margin
Wiremap	Pass	N/A		N/A	N/A	N/A					
Length	N/A	4,3 m.		1,2							
DC Resistance	Pass	2,2 ohms		1,2	25,0 ohms	22,8 ohms					
Capacitance	Pass	3,5 pF/m.		1,2	56,0 pF/m.	52,5 pF/m.					
Propagation Delay	Pass	19,8 ns		7,8	548,0 ns	528,2 ns					
Delay Skew	Pass	1,6 ns		7,8	50,0 ns	48,4 ns					
Insertion Loss	Pass	0,1 dB @ 1,0MHz	DH	7,8	< 4,0 dB	3,9 dB	DH	1,2	0,8 dB @ 100,0MHz	< 24,0 dB	23,2 dB
Return Loss	Pass	24,9 dB @ 12,9MHz	RH	1,2	> 17,0 dB	7,9 dB	RH	3,6	21,3 dB @ 72,8MHz	> 11,4 dB	9,9 dB
NEXT	Pass	37,5 dB @ 48,5MHz	RH	3,6-5,4	> 35,5 dB	2,0 dB	RH	3,6-5,4	32,2 dB @ 100,0MHz	> 30,1 dB	2,1 dB
ACR-N	Pass	63,9 dB @ 2,8MHz	RH	3,6-5,4	>= 52,1 dB	11,8 dB	RH	3,6-5,4	31,5 dB @ 100,0MHz	>= 6,1 dB	25,4 dB
ACR-F	Pass	29,9 dB @ 80,5MHz	DH	3,6-5,4	> 19,3 dB	10,6 dB	DH	3,6-5,4	28,2 dB @ 100,0MHz	> 17,4 dB	10,8 dB
PS NEXT	Pass	35,4 dB @ 52,0MHz	RH	3,6	> 32,0 dB	3,4 dB	RH	3,6	31,4 dB @ 100,0MHz	> 27,1 dB	4,3 dB
PS ACR-N	Pass	61,4 dB @ 2,7MHz	RH	5,4	> 49,5 dB	11,9 dB	RH	3,6	30,7 dB @ 100,0MHz	> 3,1 dB	27,6 dB
PS ACR-F	Pass	26,2 dB @ 84,8MHz	DH	3,6	> 15,8 dB	10,4 dB	DH	3,6	25,3 dB @ 100,0MHz	> 14,4 dB	10,9 dB

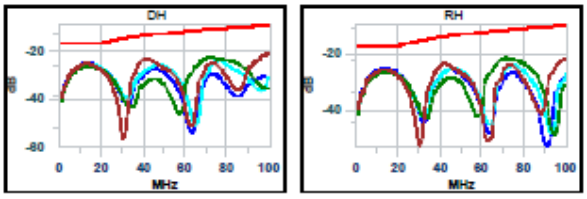
Wiremap



Insertion Loss



Return Loss



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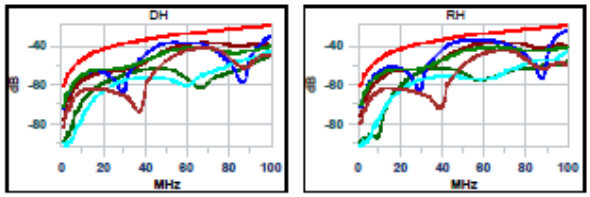
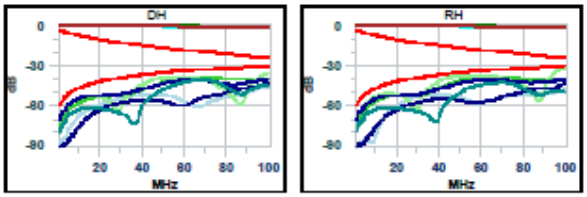
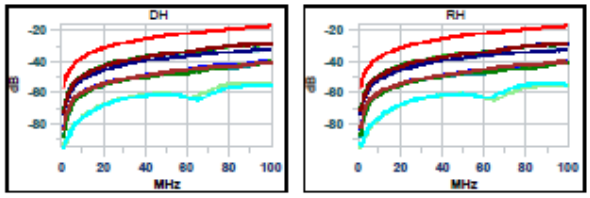


ACR-N



ACR-F



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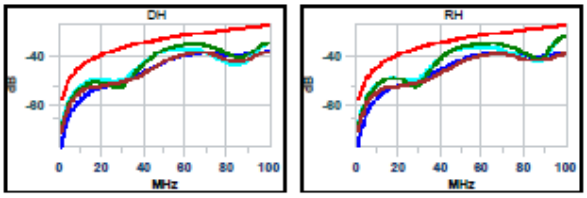
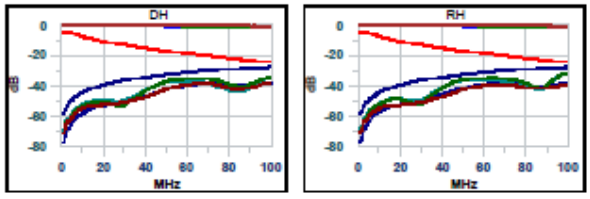
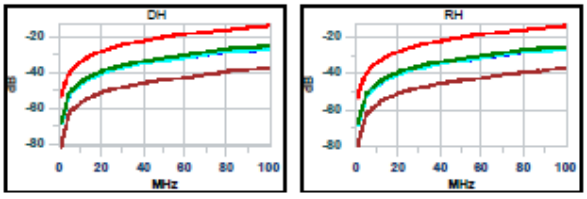


PS ACR-N



PS ACR-F



SN2 at the beginning of qualification– Test based on TIA/EIA568 CAT5e Test:

IDEAL INDUSTRIES, Inc. Certified - Test Report

Job Name: SUPERS_38999.job
Company: COMPANY NAME

Report Date: Wednesday, February 19, 2014 2:02 PM
Version: 1.3.0.5

Summary:

All Cables	Twisted Pair	Coax/Twinax	Fiber
Total: 1	Total: 1	Total: 0	Total: 0
Pass: 1	Pass: 1	Pass: 0	Pass: 0
Fail: 0	Fail: 0	Fail: 0	Fail: 0
Tot. Length: 3,9m	Tot. Length: 3,9m	Tot. Length: 0m	Tot. Length: 0m

Pass

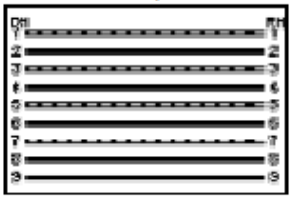
Test Name: SN2 SH5
Test Limit: CAT5E
Test Date: 12/18/2013
Test Time: 10:57:40
Adapter ID: 6004, Cat 6A Chan
User Notes:

NVP: 72
LANTEK II-1000 [948185/948240]
Firmware 2.012

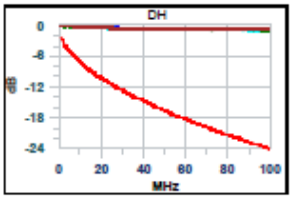
Standard: TIA 568-B.2-Custom-Cust-Custom
Frequency Range: 1 - 100MHz
Operator: OPERATOR NAME
Contractor: CONTRACTOR NAME
Company: COMPANY NAME

	Result	Worst Case Value		Pairs	Limit	Margin		Pairs	Worst Overall Value	Limit	Margin
Wiremap	Pass	N/A		N/A	N/A	N/A					
Length	N/A	3,9 m.		1,2							
DC Resistance	Pass	2,1 ohms		1,2	20,0 ohms	17,9 ohms					
Capacitance	Pass	3,9 pF/m.		5,4	66,0 pF/m.	62,1 pF/m.					
Propagation Delay	Pass	20,0 ns		7,8	555,0 ns	535,0 ns					
Delay Skew	Pass	1,6 ns		7,8	50,0 ns	48,4 ns					
Insertion Loss	Pass	0,1 dB @ 1,0MHz	DH	7,8	< 2,2 dB	2,1 dB	DH	5,4	0,9 dB @ 100,0MHz	< 24,0 dB	23,1 dB
Return Loss	Pass	21,8 dB @ 73,0MHz	RH	3,6	> 11,4 dB	10,4 dB	RH	3,6	21,8 dB @ 75,5MHz	> 11,2 dB	10,6 dB
NEXT	Pass	37,8 dB @ 60,3MHz	RH	3,6-5,4	> 33,9 dB	3,9 dB	RH	3,6-5,4	37,7 dB @ 63,8MHz	> 33,4 dB	4,3 dB
ACR-N	Pass	65,9 dB @ 2,1MHz	RH	3,6-5,4	>= 55,1 dB	10,8 dB	RH	7,8-5,4	36,9 dB @ 100,0MHz	>= 6,1 dB	30,8 dB
ACR-F	Pass	29,9 dB @ 83,5MHz	DH	3,6-1,2	> 19,0 dB	10,9 dB	RH	5,4-3,6	28,4 dB @ 100,0MHz	> 17,4 dB	11,0 dB
Headroom	N/A	60,7 dB		N/A	N/A	N/A					
PS NEXT	Pass	35,2 dB @ 61,0MHz	RH	3,6	> 30,8 dB	4,4 dB	DH	5,4	35,1 dB @ 100,0MHz	> 27,1 dB	8,0 dB
PS ACR-N	Pass	62,9 dB @ 2,1MHz	RH	5,4	> 52,1 dB	10,8 dB	DH	5,4	34,2 dB @ 100,0MHz	> 3,1 dB	31,1 dB
PS ACR-F	Pass	27,8 dB @ 74,5MHz	DH	3,6	> 17,0 dB	10,8 dB	DH	3,6	25,4 dB @ 100,0MHz	> 14,4 dB	11,0 dB

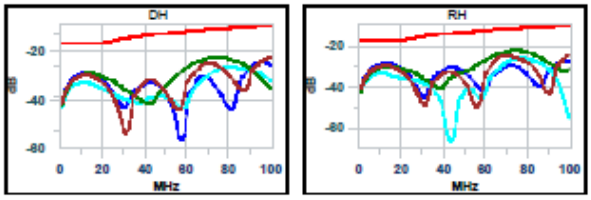
Wiremap



Insertion Loss



Return Loss



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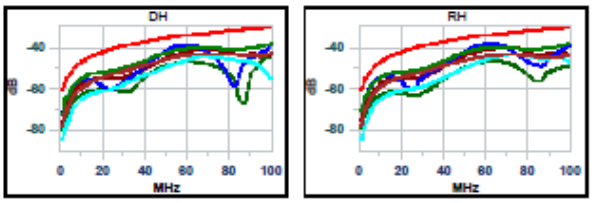
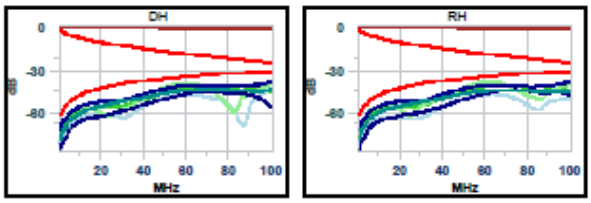
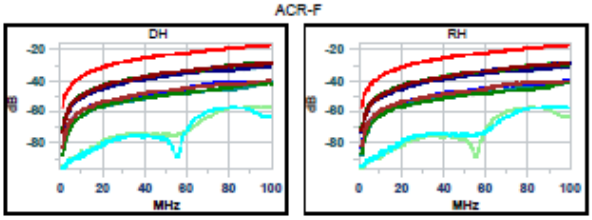


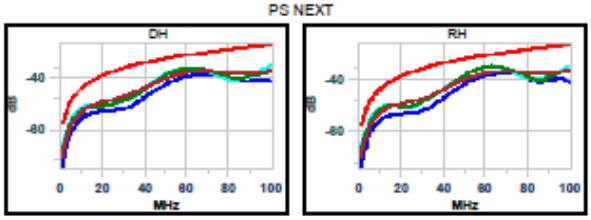
ACR-N



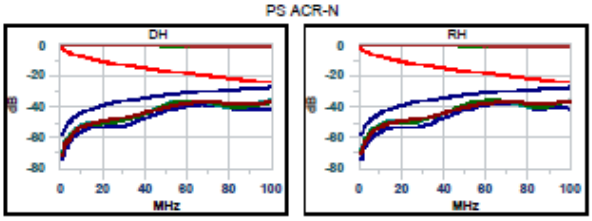
ACR-F



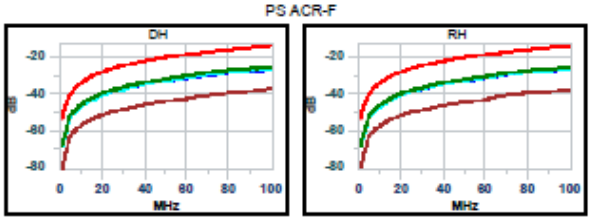
PS NEXT



PS ACR-N



PS ACR-F



SN2 at the beginning of qualification – Test based on EN50173 D:

IDEAL INDUSTRIES, Inc. Certified - Test Report

Job Name: SUPERS_38999.job
Company: COMPANY NAME

Report Date: Wednesday, February 19, 2014 2:02 PM
Version: 1.3.0.5

Summary:

All Cables	Twisted Pair	Coax/Twinax	Fiber
Total: 1	Total: 1	Total: 0	Total: 0
Pass: 1	Pass: 1	Pass: 0	Pass: 0
Fail: 0	Fail: 0	Fail: 0	Fail: 0
Tot. Length: 4,2m	Tot. Length: 4,2m	Tot. Length: 0m	Tot. Length: 0m

Pass

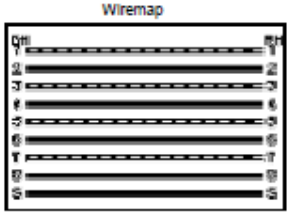
Test Name: SN2 SH5 EN
Test Limit: EN D
Test Date: 12/18/2013
Test Time: 09:56:32
Adapter ID: 6004, Cat 6A Chan
User Notes:

NVP: 79
LANTEK II-1000 [948185/948240]
Firmware 2.012

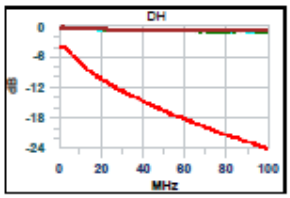
Standard: EN50173-1-Custom
Frequency Range: 1 - 100MHz
Operator: OPERATOR NAME
Contractor: CONTRACTOR NAME
Company: COMPANY NAME

	Result	Worst Case Value		Pairs	Limit	Margin		Pairs	Worst Overall Value	Limit	Margin
Wiremap	Pass	N/A		N/A	N/A	N/A					
Length	N/A	4,2 m.		1,2							
DC Resistance	Pass	2,0 ohms		1,2	25,0 ohms	23,0 ohms					
Capacitance	Pass	3,6 pF/m.		3,6	56,0 pF/m.	52,4 pF/m.					
Propagation Delay	Pass	20,0 ns		7,8	548,0 ns	528,0 ns					
Delay Skew	Pass	2,0 ns		7,8	50,0 ns	48,0 ns					
Insertion Loss	Pass	0,3 dB @ 2,5MHz	DH	5,4	< 4,0 dB	3,7 dB	DH	3,6	0,8 dB @ 100,0MHz	< 24,0 dB	23,2 dB
Return Loss	Pass	27,7 dB @ 12,1MHz	DH	1,2	> 17,0 dB	10,7 dB	RH	3,6	23,2 dB @ 78,3MHz	> 11,1 dB	12,1 dB
NEXT	Pass	40,4 dB @ 57,0MHz	RH	7,8-5,4	> 34,3 dB	6,1 dB	DH	7,8-5,4	37,7 dB @ 100,0MHz	> 30,1 dB	7,6 dB
ACR-N	Pass	64,5 dB @ 2,5MHz	RH	7,8-5,4	>= 52,9 dB	11,6 dB	DH	7,8-5,4	36,9 dB @ 100,0MHz	>= 6,1 dB	30,8 dB
ACR-F	Pass	30,6 dB @ 83,5MHz	DH	3,6-1,2	> 19,0 dB	11,6 dB	DH	3,6-1,2	29,7 dB @ 99,0MHz	> 17,5 dB	12,2 dB
PS NEXT	Pass	37,8 dB @ 59,0MHz	RH	7,8	> 31,0 dB	6,8 dB	DH	5,4	35,8 dB @ 100,0MHz	> 27,1 dB	8,7 dB
PS ACR-N	Pass	62,2 dB @ 2,8MHz	RH	5,4	> 49,1 dB	13,1 dB	DH	5,4	35,0 dB @ 100,0MHz	> 3,1 dB	31,9 dB
PS ACR-F	Pass	51,6 dB @ 5,7MHz	RH	1,2	> 39,4 dB	12,2 dB	DH	1,2	27,1 dB @ 100,0MHz	> 14,4 dB	12,7 dB

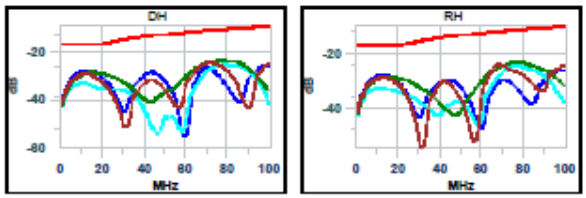
Wiremap



Insertion Loss



Return Loss



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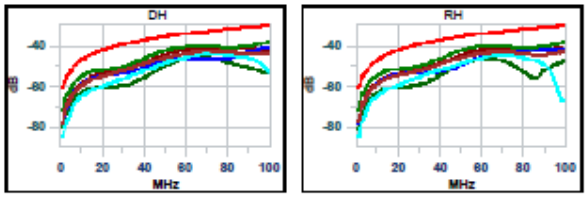
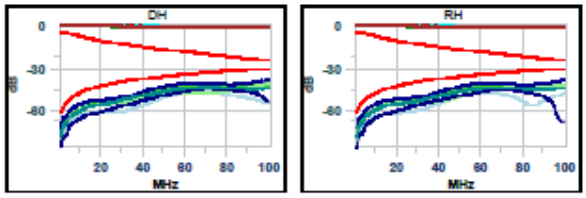
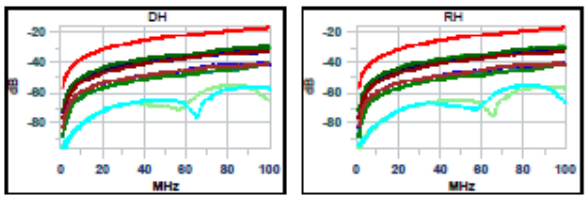


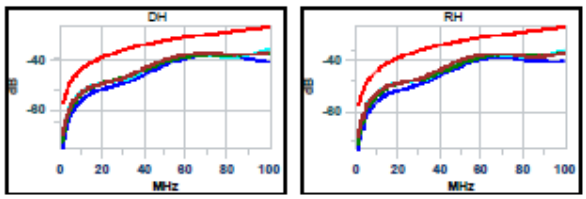
ACR-N



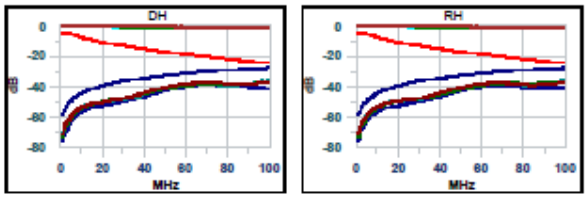
ACR-F



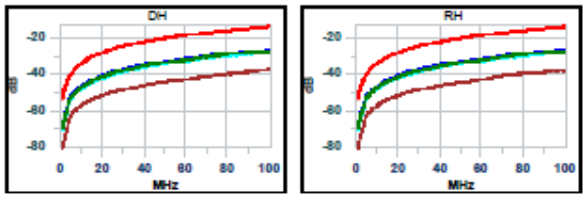
PS NEXT



PS ACR-N



PS ACR-F



SN2 after 85 cycles of Thermal Shock – Test based on TIA/EIA568 CAT5e Test:

IDEAL INDUSTRIES, Inc. Certified - Test Report

Job Name: SUPERS_38999.job
Company: COMPANY NAME

Report Date: Wednesday, February 19, 2014 2:03 PM
Version: 1.3.0.5

Summary:

All Cables	Twisted Pair	Coax/Twinax	Fiber
Total: 1	Total: 1	Total: 0	Total: 0
Pass: 1	Pass: 1	Pass: 0	Pass: 0
Fail: 0	Fail: 0	Fail: 0	Fail: 0
Tot. Length: 3,8m	Tot. Length: 3,8m	Tot. Length: 0m	Tot. Length: 0m

Pass

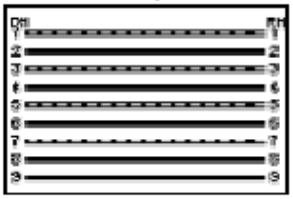
Test Name: SN2 SH50
Test Limit: CAT5E
Test Date: 1/22/2014
Test Time: 08:40:35
Adapter ID: 6004, Cat 6A Chan
User Notes:

NVP: 72
LANTEK II-1000 [948165/948240]
Firmware 2.012

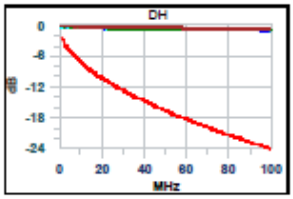
Standard: TIA 568-B.2-Custom-Cust-Custom
Frequency Range: 1 - 100MHz
Operator: OPERATOR NAME
Contractor: CONTRACTOR NAME
Company: COMPANY NAME

	Result	Worst Case Value		Pairs	Limit	Margin		Pairs	Worst Overall Value	Limit	Margin
Wiremap	Pass	N/A		N/A	N/A	N/A					
Length	N/A	3,8 m.		1,2							
DC Resistance	Pass	2,1 ohms		1,2	20,0 ohms	17,9 ohms					
Capacitance	Pass	4,0 pF/m.		5,4	66,0 pF/m.	62,0 pF/m.					
Propagation Delay	Pass	20,0 ns		7,8	555,0 ns	535,0 ns					
Delay Skew	Pass	2,0 ns		7,8	50,0 ns	48,0 ns					
Insertion Loss	Pass	0,2 dB @ 1,0MHz	DH	5,4	< 2,2 dB	2,0 dB	DH	1,2	0,9 dB @ 100,0MHz	< 24,0 dB	23,1 dB
Return Loss	Pass	24,9 dB @ 12,4MHz	RH	1,2	> 17,0 dB	7,9 dB	RH	3,6	22,0 dB @ 78,8MHz	> 11,0 dB	11,0 dB
NEXT	Pass	39,7 dB @ 58,5MHz	RH	7,8-5,4	> 34,1 dB	5,6 dB	DH	7,8-5,4	37,2 dB @ 100,0MHz	> 30,1 dB	7,1 dB
ACR-N	Pass	65,0 dB @ 2,5MHz	RH	7,8-5,4	>= 53,4 dB	11,6 dB	DH	7,8-5,4	36,4 dB @ 100,0MHz	>= 6,1 dB	30,3 dB
ACR-F	Pass	30,1 dB @ 86,5MHz	DH	3,6-1,2	> 18,7 dB	11,4 dB	RH	1,2-3,6	29,3 dB @ 100,0MHz	> 17,4 dB	11,9 dB
Headroom	N/A	55,8 dB		N/A	N/A	N/A					
PS NEXT	Pass	37,1 dB @ 62,8MHz	RH	7,8	> 30,6 dB	6,5 dB	RH	5,4	35,0 dB @ 100,0MHz	> 27,1 dB	7,9 dB
PS ACR-N	Pass	63,4 dB @ 2,5MHz	RH	7,8	> 50,4 dB	13,0 dB	RH	5,4	34,2 dB @ 100,0MHz	> 3,1 dB	31,1 dB
PS ACR-F	Pass	51,6 dB @ 5,7MHz	DH	1,2	> 39,4 dB	12,2 dB	DH	1,2	27,0 dB @ 100,0MHz	> 14,4 dB	12,6 dB

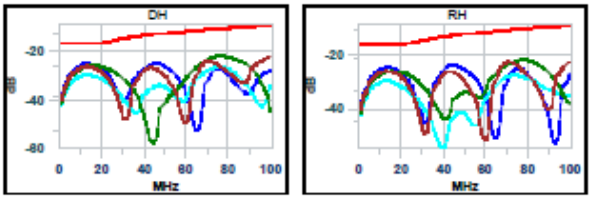
Wiremap



Insertion Loss



Return Loss



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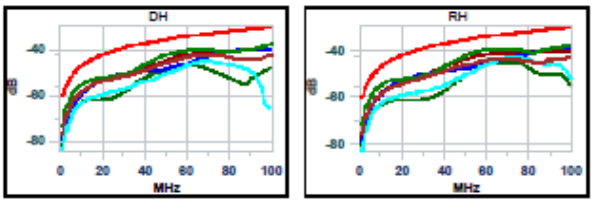
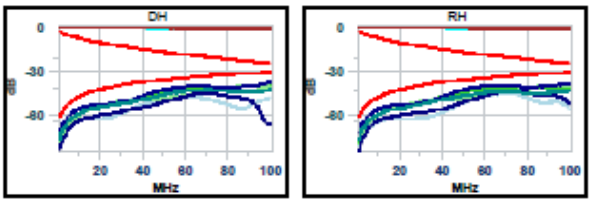
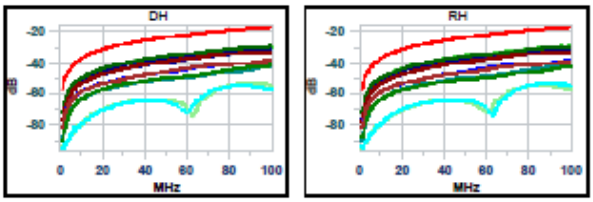


ACR-N



ACR-F



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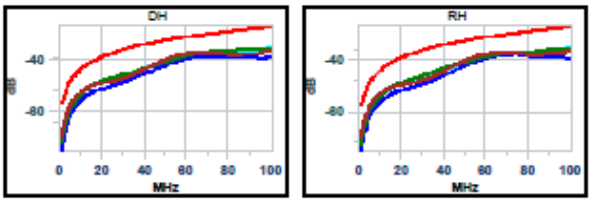
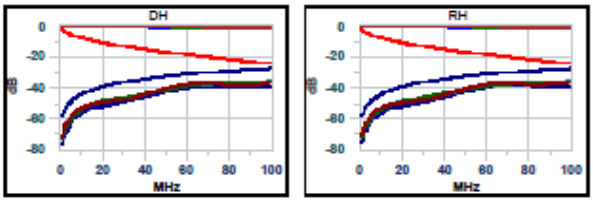
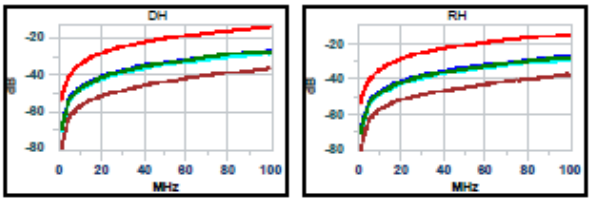


PS ACR-N



PS ACR-F



SN2 after 85 cycles of Thermal Shock – Test based on EN50173 D:

IDEAL INDUSTRIES, Inc. Certified - Test Report

Job Name: SUPERS_38999.job
Company: COMPANY NAME

Report Date: Wednesday, February 19, 2014 2:04 PM
Version: 1.3.0.5

Summary:

All Cables	Twisted Pair	Coax/Twinax	Fiber
Total: 1	Total: 1	Total: 0	Total: 0
Pass: 1	Pass: 1	Pass: 0	Pass: 0
Fail: 0	Fail: 0	Fail: 0	Fail: 0
Tot. Length: 4,3m	Tot. Length: 4,3m	Tot. Length: 0m	Tot. Length: 0m

Pass

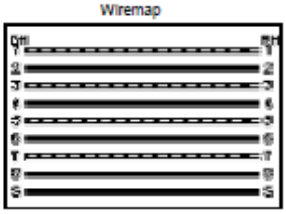
Test Name: SN2 SH50 EN
Test Limit: EN D
Test Date: 1/22/2014
Test Time: 08:37:34
Adapter ID: 6004, Cat 6A Chan
User Notes:

NVP: 79
LANTEK II-1000 [948185/948240]
Firmware 2.012

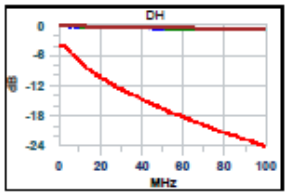
Standard: EN50173-1-Custom
Frequency Range: 1 - 100MHz
Operator: OPERATOR NAME
Contractor: CONTRACTOR NAME
Company: COMPANY NAME

	Result	Worst Case Value		Pairs	Limit	Margin		Pairs	Worst Overall Value	Limit	Margin
Wiremap	Pass	N/A		N/A	N/A	N/A					
Length	N/A	4,3 m.		1,2							
DC Resistance	Pass	2,2 ohms		1,2	25,0 ohms	22,8 ohms					
Capacitance	Pass	3,6 pF/m.		5,4	56,0 pF/m.	52,4 pF/m.					
Propagation Delay	Pass	20,0 ns		7,8	548,0 ns	528,0 ns					
Delay Skew	Pass	1,8 ns		7,8	50,0 ns	48,2 ns					
Insertion Loss	Pass	0,1 dB @ 1,0MHz	DH	7,8	< 4,0 dB	3,9 dB	DH	5,4	0,8 dB @ 100,0MHz	< 24,0 dB	23,2 dB
Return Loss	Pass	24,9 dB @ 12,6MHz	RH	1,2	> 17,0 dB	7,9 dB	RH	3,6	22,0 dB @ 78,5MHz	> 11,1 dB	10,9 dB
NEXT	Pass	39,5 dB @ 60,3MHz	RH	7,8-5,4	> 33,9 dB	5,6 dB	DH	7,8-5,4	37,2 dB @ 100,0MHz	> 30,1 dB	7,1 dB
ACR-N	Pass	65,9 dB @ 2,2MHz	RH	7,8-5,4	>= 53,8 dB	12,1 dB	DH	7,8-5,4	36,4 dB @ 100,0MHz	>= 6,1 dB	30,3 dB
ACR-F	Pass	30,2 dB @ 85,5MHz	DH	3,6-1,2	> 18,8 dB	11,4 dB	DH	3,6-1,2	29,2 dB @ 100,0MHz	> 17,4 dB	11,8 dB
PS NEXT	Pass	37,3 dB @ 61,0MHz	RH	7,8	> 30,8 dB	6,5 dB	DH	5,4	34,8 dB @ 100,0MHz	> 27,1 dB	7,7 dB
PS ACR-N	Pass	61,3 dB @ 3,3MHz	RH	7,8	> 47,9 dB	13,4 dB	DH	5,4	34,0 dB @ 100,0MHz	> 3,1 dB	30,9 dB
PS ACR-F	Pass	51,8 dB @ 5,5MHz	DH	1,2	> 39,6 dB	12,2 dB	DH	1,2	27,0 dB @ 100,0MHz	> 14,4 dB	12,6 dB

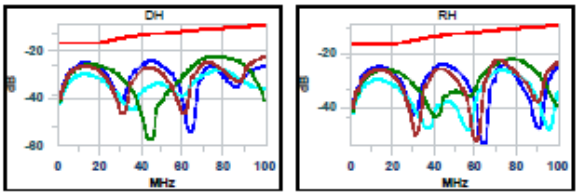
Wiremap



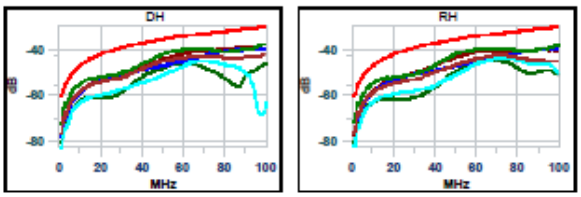
Insertion Loss



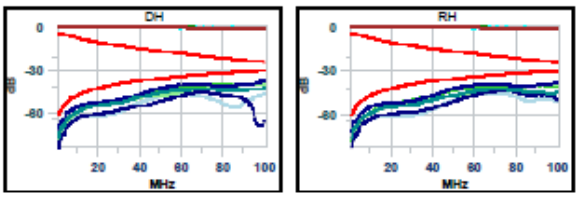
Return Loss



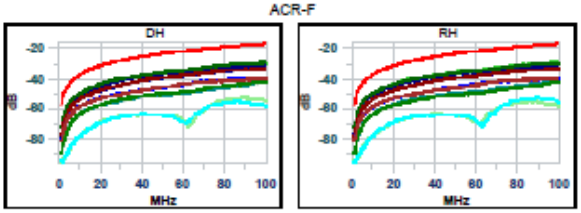
NEXT



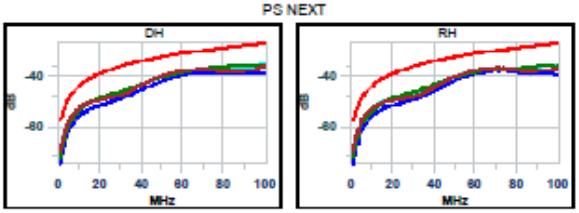
ACR-N



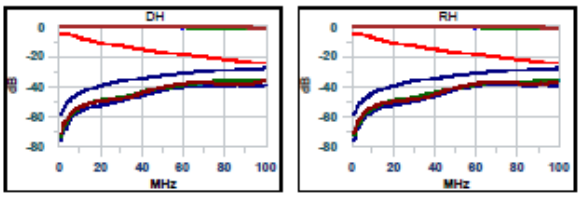
ACR-F



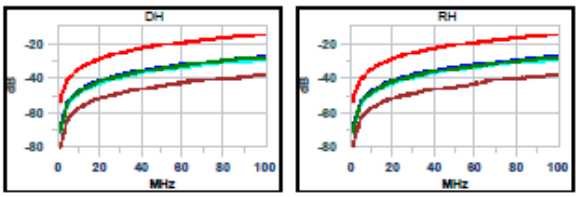
PS NEXT



PS ACR-N



PS ACR-F



Ethernet Test Compliance:

the connectors are in compliance with both TIA/EIA568 Cat.5 and EN 50173-1 D, and there are not significant differences in the Ethernet Test parameters before and after the thermal cycling.

Watertightness Test:

After 16 hours inside water at 1Bar pressure there is no evidence of water moisture inside the connectors.

Insulation Resistance after watertightness:

Cable	500VDC - 1minutes (GOHM)	
	SN1	SN2
Orange	10,95	8,56
White-Orange	13,42	22,4
Green	21	48,9
White-Green	87,6	23,9
Blue	6,62	9,81
White-blue	41,8	15,64
Brown	102	58,3
White-Brown	34,5	8,76

2.8. Comments / remarks – commenti / osservazioni

The connectors pass with positive result the Thermal Shock test and the acceptance tests before and after thermal shock (including watertightness test).

3. Vibration Test

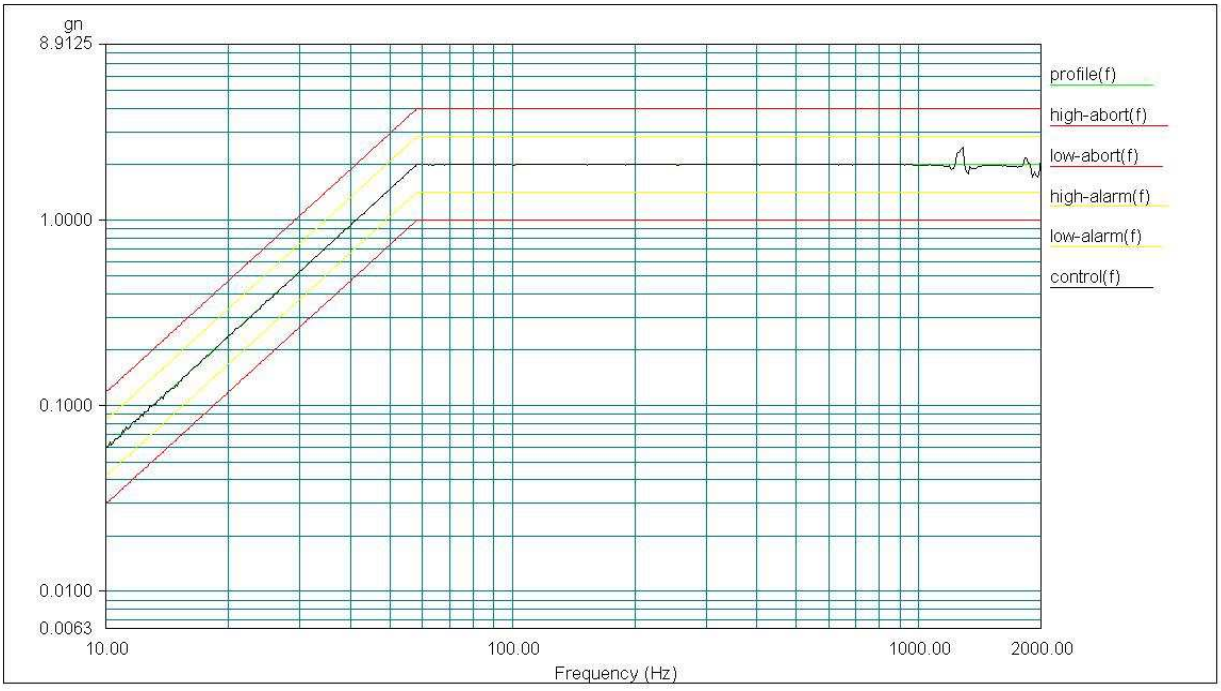
3.1. Description of Test method procedure – Descrizione della procedura del metodo di prova

The test involves 2 couples of connectors: SN5R mated with SN5P and SN6R mated with SN6R. The connectors are connected to the power supply in such a manner that there is a single circuit that starts on the PIN 1 of the first connector and end on the PIN 8 of the second connector. Previously the fixture was checked with the vibration program to ensure that there is not fixture frequency resonance on the frequency range of the program.
The connectors are tested according to MIL-STD-202G Method 204 D Sine Test condition D (20g peak) on the 3 axis: vertical, transversal, longitudinal. At each step we assembly the connector on the fixture in the axis that we have to test.
During the test the cable are connected to a power supply device that supply 5VDC – 100mA at the connector circuit and a 50 ohm resistor. We check micro-interruptions by the voltage drop on the resistance by an oscilloscope. A voltage drop of 50% is considered an interruption.

The test consist on the following vibration steps:

Step1: MIL-STD-202G Method 204 D sine Test condition D (20g peak) - 10% reduced (2G) 3 axis - 1 hour each axis.

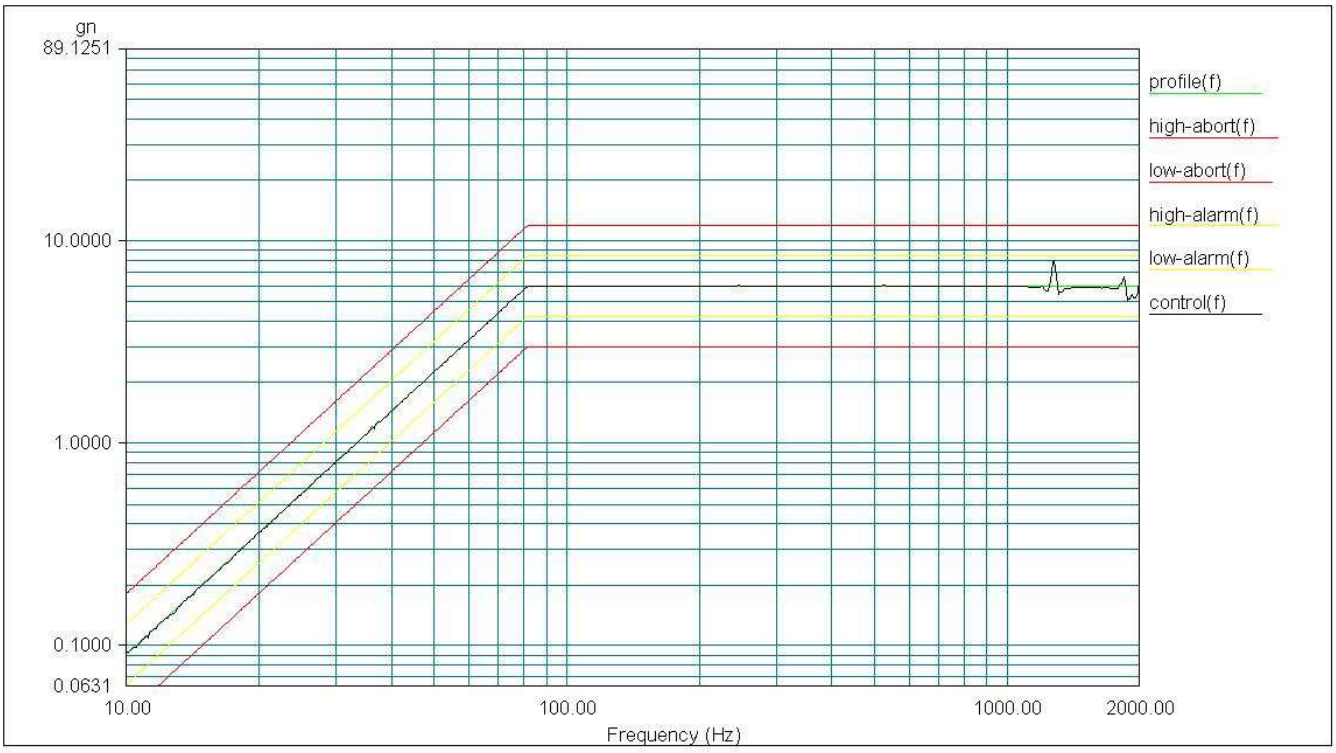
Profile:



Frequency Hz	Left Slope dB/Oct	Acceleration (gn Peak)	Velocity (m/s) Peak	Displacement (mm) Peak-Peak	Right Slope dB/Oct
10.0		0.0603852	0.00942478	0.3	Const. Disp.
55.0	Const. Disp.	1.82665	0.0518363	0.3	Const. Disp.
57.6	Const. Disp.	2	0.0542402	0.3	Const. Acce.
2000.0	Const. Acce.	2	0.00156078	0.000248405	

Step2: MIL-STD-202G Method 204 D sine Test condition D (20g peak) - 30% reduced (6G) 3 axis - 1 hour each axis.

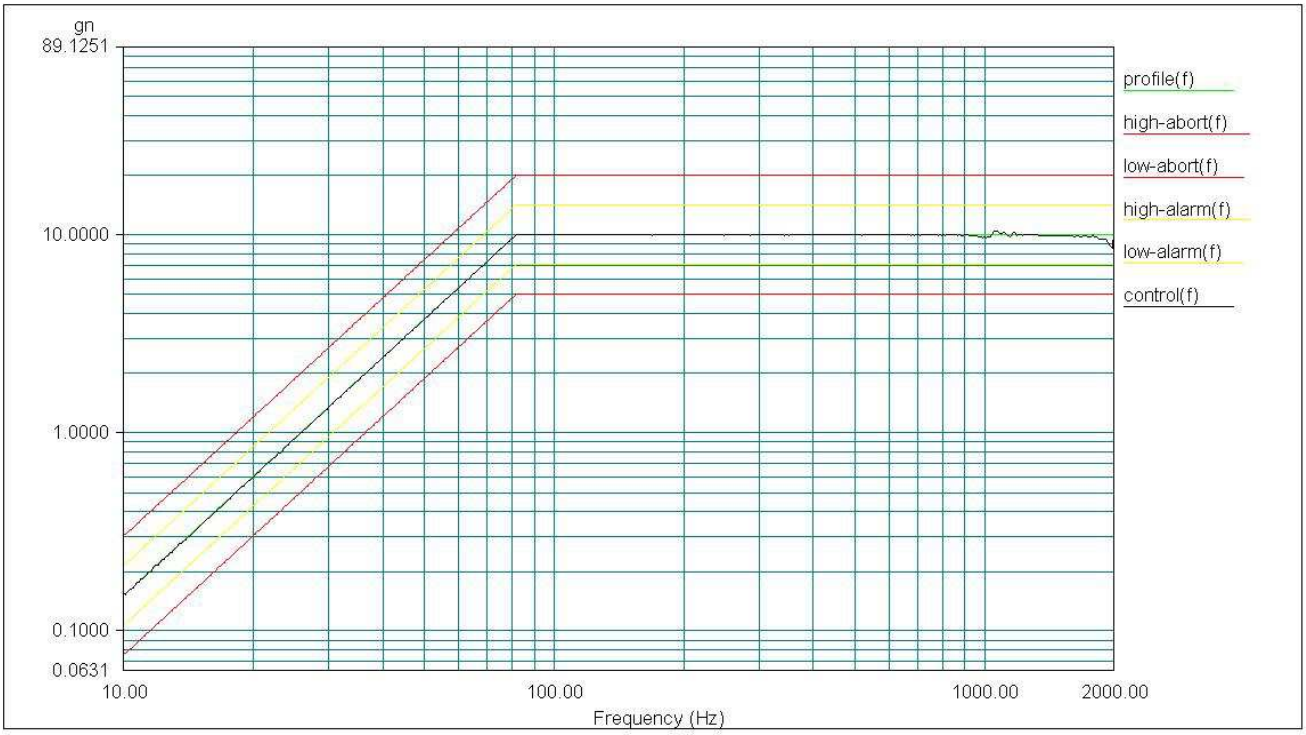
Profile:



Frequency Hz	Left Slope dB/Oct	Acceleration (gn) Peak	Velocity (m/s) Peak	Displacement (mm) Peak-Peak	Right Slope dB/Oct
10.0		0.092027	0.0143634	0.4572	Const. Disp.
55.0	Const. Disp.	2.78382	0.0789985	0.4572	Const. Disp.
80.7	Const. Disp.	6	0.115978	0.4572	Const. Acce.
2000.0	Const. Acce.	6	0.00468233	0.000745216	

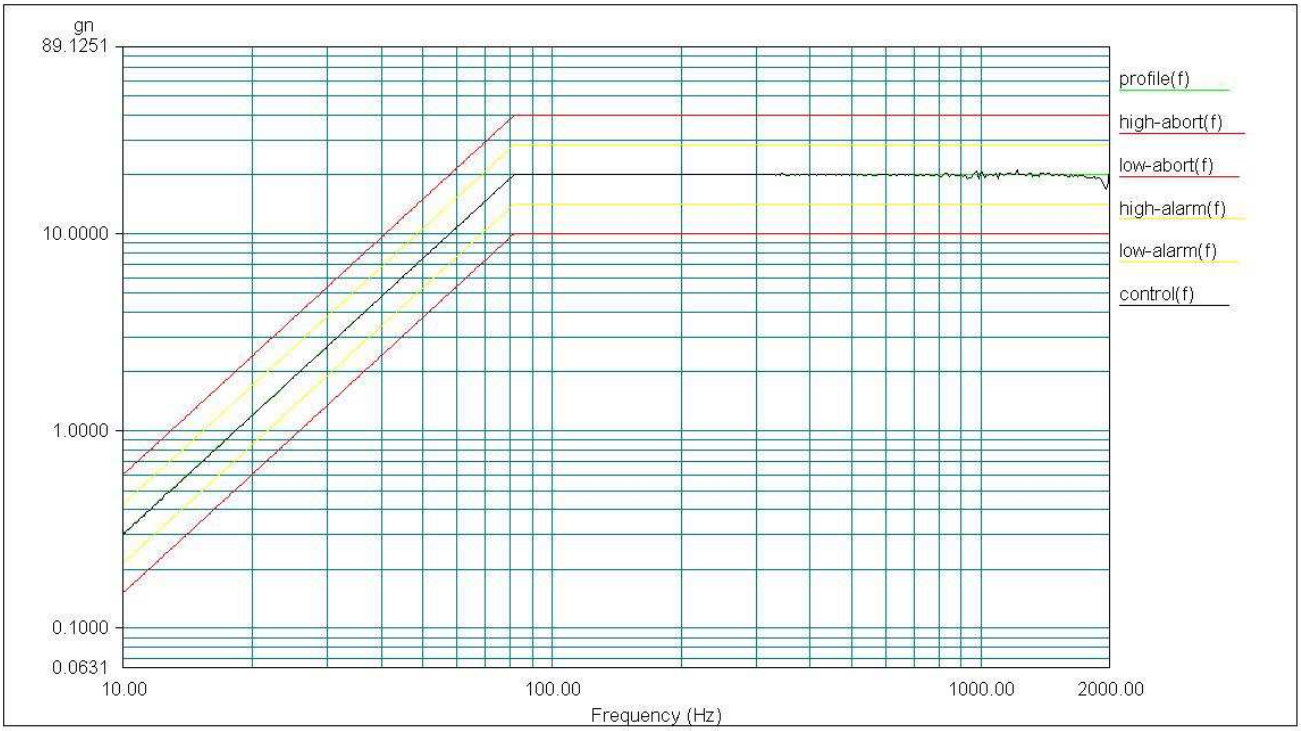
Step3: MIL-STD-202G Method 204 D sine Test condition D (20g peak) - 50% reduced (10G) 3 axis - 1 hour each axis.

Profile:



Frequency Hz	Left Slope dB/Oct	Acceleration (gn) Peak	Velocity (m/s) Peak	Displacement (mm) Peak-Peak	Right Slope dB/Oct
10.0		0.153378	0.0239389	0.762	Const. Disp.
55.0	Const. Disp.	4.6397	0.131664	0.762	Const. Disp.
80.7	Const. Disp.	10	0.193296	0.762	Const. Acce.
2000.0	Const. Acce.	10	0.00780388	0.00124203	

Step4: MIL-STD-202G Method 204 D sine Test condition D (20g peak) 100% (20G) 3 axis - 1 hour each axis.



Frequency Hz	Left Slope dB/Oct	Acceleration (gn) Peak	Velocity (m/s) Peak	Displacement (mm) Peak-Peak	Right Slope dB/Oct
10.0		0.306757	0.0478779	1.524	Const. Disp.
55.0	Const. Disp.	9.27939	0.263328	1.524	Const. Disp.
80.7	Const. Disp.	20	0.386592	1.524	Const. Acce.
2000.0	Const. Acce.	20	0.0156078	0.00248405	

Step5: MIL-STD-202G Method 204 D sine Test condition D (20g peak) 100% (20G) 3 axis - 8 hours each axis.

The Profile is the same of step 4.

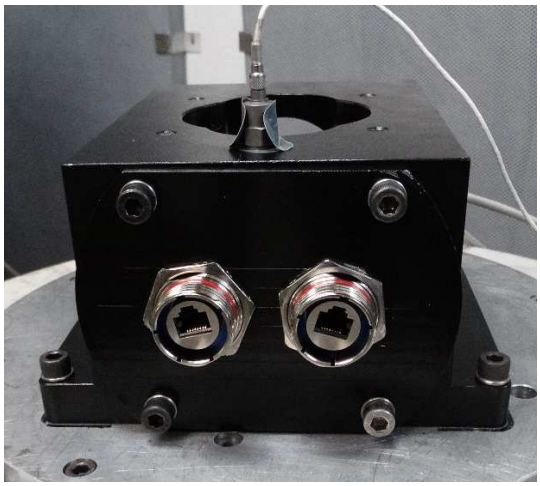
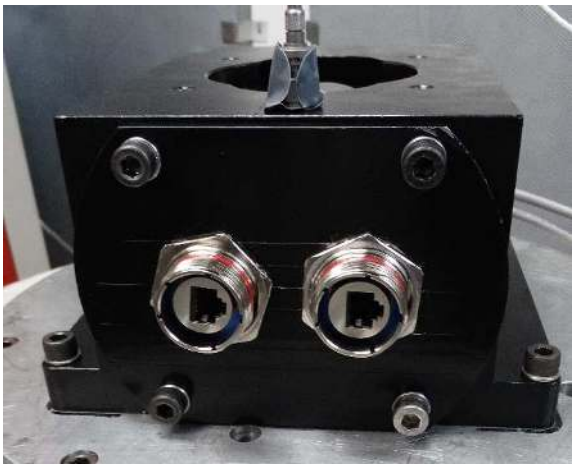
Before the first step and after each steps the connectors are subjected to the Pass/Fail criteria Test:

Visual inspection
Ground Resistance measurement: on the mated connectors 1,5VDC & 0,1mA is applied and the voltage drop is measured between the cable clamp of the receptacle and the cable clamp of the plug.

Insulation Resistance measurement: at 500VDC for 1 minute between each contacts and the other contact and the shell is measured.
Ethernet compliance Test: the mated connectors cables are connected to the Ethernet compliance certificatory tester, then a TIA/EIA568 Category 5 test and a EN50173 Category D test are made.
Dielectric withstanding voltage test: a voltage of 900VAC 50Hz is applied between each contacts and the others for 1 minute.
Water tightness Test IP68: this test is made only after the last step. The mated connectors with back-shell and cables protected by heat shrink boot are placed under water at 1BAR pressure for 16 hours. Then the connectors are removed from water, un-mated to check if there is water moisture inside the connectors and the insulation resistance test is made.

Test Set-up for Vibration Test

Vertical Axis	Transversal/Horizontal Axis
	

Between transversal/horizontal axis changes of 90° the rotation of the connectors	
Horizontal	Transversal
	

3.2. Items tested – campioni sottoposti a prova

SN5R RDPe001/14 mated with SN5P RDPe001/14
SN6R RDPe001/14 mated with SN6P RDPe001/14

Relevant equipment – strumenti utilizzati

Equipment / Identification- strumenti / numero di matricola	**Manufacturer / model** – marca / modello	**Calibration expiration date** – scadenza taratura
Vibration		
Vibration controller / ASV	**DACTRON / LDS**	**04/14**
Vibration Machine /ASV-1	**Belotti / LDSV830-335/SPA16K**	**01/15**
Oscilloscope / OSC1	**Agilent / DSO-X 2002A**	**06/14**
Power supply / ALIM1	**Thurlby Thandar / EX725M**	**07/14**
Accelerometer / 3056A	**Dactron / 3056A**	**08/14**
Insulation resistance		
Megaohmmeter/ R7	**Sefelec/ M1501M**	**09/14**
Ground Resistance		
Voltmeter / NV01	**Agilent / 34420 A**	**03/14**
Power supplier GC1	**Toelnerr / TOE 8872/40**	**07/14**
Ethernet Test		
Ethernet Cables Tester/ LK7G/1	**Lantek Ideal / Lantek II**	**02/15**

Equipment / Identification- strumenti / numero di matricola	**Manufacturer / model** – marca / modello	**Calibration expiration date** – scadenza taratura
Dielectric Withstanding Voltage		
Dielectric breakdown tester/ UH28CS	**Etl-Prueftechnik/ UH28CS**	**04/16**
Watertightness Test		
Pressure gauges/ MAN11	**Wikia / 0-2.5BAR Kl.1.6**	**06/14**

3.3. Requirement - requisiti

Vibration: no evidence of micro interruption > 1 µs
Visual inspection: no evidence of mechanical cracks/irregularities
Ground Resistance: <=2,5 mohm
Insulation Resistance: >5 Gohm
Dielectric Withstanding Voltage: nor breakdown nor flashover, current Leak: <2 mA
Compliant with TIA/EIA568 cat 5e and EN50173 D
Water-tightness: no evidence of moisture inside the connector.

3.4. Date and place of test – data e luogo della prova

Place of test: Glenair Italia S.p.A. Testlab – Vibration Test Room
From 20/12/13 to 27/01/14

3.5. Environmental conditions – condizioni ambientali

Vibration test Room:
Step1:
20/12/13 temperature: 15,8 °C Humidity: 41,7 %

Step2:
24/12/13 temperature: 18,4 °C Humidity: 46,1 %
27/12/13 temperature: 15,6 °C Humidity: 57,6 %

Step3:
09/01/14 temperature: 17,8 °C Humidity: 47,3 %
10/01/14 temperature: 21,7 °C Humidity: 41,8 %

Step4:
15/01/14 temperature: 19,4 °C Humidity: 41,0 %
16/01/14 temperature: 17,3 °C Humidity: 41,3 %

Step5:
22/01/14 temperature: 16,7 °C Humidity: 50,0 %
23/01/14 temperature: 16,1 °C Humidity: 45,5 %
27/01/14 temperature: 16,5 °C Humidity: 47,6 %

3.6. Result – risultati

Microinterruptions during vibration:

Step1 2G: There are not microinterruptions longer than 1 µs during the test. PASS.
Step2: 6G: There are not microinterruptions longer than 1 µs during the test. PASS.
Step3: 10G: There are not microinterruptions longer than 1 µs during the test. PASS.
Step4: 20G: There are not microinterruptions longer than 1 µs during the test. PASS.
Step5: 20G & 8 hours: There are not microinterruptions longer than 1 µs during the test. PASS.

RESULT: PASS

Visual examination:
After the Step1: Not presence of damages or other defects on the connectors.
After the Step2: Not presence of damages or other defects on the connectors.
After the Step3: Not presence of damages or other defects on the connectors.
After the Step4: Not presence of damages or other defects on the connectors.
After the Step5: Not presence of damages or other defects on the connectors.

RESULT: PASS

Ground Resistance (<=2,5mohm):

Before the first step			After vibration 10% (2 G)		
Cable	Ground Resistance (1,5 VDC - 100 mA)		Cable	Ground Resistance (1,5 VDC - 100 mA)	
	SN5	SN6		SN5	SN6
Measure (mV)	0,093	0,113	Measure (mV)	0,107	0,084
Result (mohm)	0,93	1,13	Result (mohm)	1,07	0,84
After vibration 30% (6 G)			After vibration 50% (10 G)		
Cable	Ground Resistance (1,5 VDC - 100 mA)		Cable	Ground Resistance (1,5 VDC - 100 mA)	
	SN5	SN6		SN5	SN6
Measure (mV)	0,082	0,051	Measure (mV)	0,063	0,054
Result (mohm)	0,82	0,51	Result (mohm)	0,63	0,54
After vibration 100% (20 G)			After vibration 100% (20 G) 8 hours		
Cable	Ground Resistance (1,5 VDC - 100 mA)		Cable	Ground Resistance (1,5 VDC - 100 mA)	
	SN5	SN6		SN5	SN6
Measure (mV)	0,052	0,063	Measure (mV)	0,098	0,13
Result (mohm)	0,52	0,63	Result (mohm)	0,98	1,3

RESULT: PASS

Insulation resistance (>5Gohm):

Before the first step			After vibration 10% (2G)		
Cable	500 VDC - 1 minute (GOHM)		Cable	500 VDC - 1 minute (GOHM)	
	SN5	SN6		SN5	SN6
Orange	27100	12360	Orange	4520	4780
White-Orange	12190	5600	White-Orange	3590	3720
Green	10360	1331	Green	2840	654
White-Green	11890	6660	White-Green	3150	3090
Blue	10410	1677	Blue	2740	701
White-blue	18260	5020	White-blue	4170	1934
Brown	18870	5310	Brown	3680	1790
White-Brown	45124	2880	White-Brown	2640	1466
After vibration 30% (6G)			After vibration 50% (10G)		
Cable	500 VDC - 1 minute (GOHM)		Cable	500 VDC - 1 minute (GOHM)	
	SN5	SN6		SN5	SN6
Orange	2640	1420	Orange	5640	5960
White-Orange	2150	1400	White-Orange	3890	2660
Green	1681	345	Green	2790	427
White-Green	1596	1102	White-Green	2750	1793
Blue	1051	278	Blue	2200	447
White-blue	2100	578	White-blue	4390	987
Brown	1100	611	Brown	4540	1563
White-Brown	1086	608	White-Brown	4110	934
After vibration 100% (20G)			After vibration 100% (20G) 8 hours		
Cable	500 VDC - 1 minute (GOHM)		Cable	500 VDC - 1 minute (GOHM)	
	SN5	SN6		SN5	SN6
Orange	388	179,9	Orange	3720	3430
White-Orange	1302	287	White-Orange	2980	1432
Green	2740	305	Green	3410	238
White-Green	3040	3260	White-Green	12420	2050
Blue	2240	341	Blue	1577	284
White-blue	3510	756	White-blue	6340	447
Brown	3520	1087	Brown	809	840
White-Brown	3170	716	White-Brown	1138	546

RESULT: PASS

Dielectric Withstanding Voltage (I leak.<2mA):

Before the first step			After vibration 10% (2G)		
Cable	900 VAC - 1 minute (mA)		Cable	900 VAC - 1 minute (mA)	
	SN5	SN6		SN5	SN6
Orange	0,2	0,2	Orange	0,2	0,2
White-Orange	0,2	0,2	White-Orange	0,2	0,2
Green	0,2	0,2	Green	0,2	0,2
White-Green	0,2	0,2	White-Green	0,2	0,2
Blue	0,2	0,2	Blue	0,2	0,2
White-blue	0,2	0,2	White-blue	0,2	0,2
Brown	0,2	0,2	Brown	0,2	0,2
White-Brown	0,2	0,2	White-Brown	0,2	0,2
After vibration 30% (6G)			After vibration 50% (10G)		
Cable	900 VAC - 1 minute (mA)		Cable	900 VAC - 1 minute (mA)	
	SN5	SN6		SN5	SN6
Orange	0,2	0,2	Orange	0,2	0,2
White-Orange	0,2	0,2	White-Orange	0,2	0,2
Green	0,2	0,2	Green	0,2	0,2
White-Green	0,2	0,2	White-Green	0,2	0,2
Blue	0,2	0,2	Blue	0,2	0,2
White-blue	0,2	0,2	White-blue	0,2	0,2
Brown	0,2	0,2	Brown	0,2	0,2
White-Brown	0,2	0,2	White-Brown	0,2	0,2
After vibration 100% (20G)			After vibration 100% (20G) 8 hours		
Cable	900 VAC - 1 minute (mA)		Cable	900 VAC - 1 minute (mA)	
	SN5	SN6		SN5	SN6
Orange	0,2	0,2	Orange	0,2	0,2
White-Orange	0,2	0,2	White-Orange	0,2	0,2
Green	0,2	0,2	Green	0,2	0,2
White-Green	0,2	0,2	White-Green	0,2	0,15
Blue	0,2	0,2	Blue	0,2	0,2
White-blue	0,2	0,2	White-blue	0,2	0,2
Brown	0,2	0,2	Brown	0,2	0,2
White-Brown	0,2	0,2	White-Brown	0,2	0,2

RESULT: PASS

Ethernet Test:

Before the first step			After vibration 10% (2G)		
	Ethernet CAT5e TEST			Ethernet CAT5e TEST	
	SN5	SN6		SN5	SN6
RESULT	PASS	PASS	RESULT	PASS	PASS
	Ethernet EN D TEST			Ethernet EN D TEST	
	SN5	SN6		SN5	SN6
RESULT	PASS	PASS	RESULT	PASS	PASS
After vibration 30% (6G)			After vibration 50% (10G)		
	Ethernet CAT5e TEST			Ethernet CAT5e TEST	
	SN5	SN6		SN5	SN6
RESULT	PASS	PASS	RESULT	PASS	PASS
	Ethernet EN D TEST			Ethernet EN D TEST	
	SN5	SN6		SN5	SN6
RESULT	PASS	PASS	RESULT	PASS	PASS
After vibration 100% (20G)			After vibration 100% (20G) 8 hours		
	Ethernet CAT5e TEST			Ethernet CAT5e TEST	
	SN5	SN6		SN5	SN6
RESULT	PASS	PASS	RESULT	PASS	PASS
	Ethernet EN D TEST			Ethernet EN D TEST	
	SN5	SN6		SN5	SN6
RESULT	PASS	PASS	RESULT	PASS	PASS

SN5 at the beginning of qualification– Test based on TIA/EIA568 CAT5e Test:

IDEAL INDUSTRIES, Inc. Certified - Test Report

Job Name: SUPERS_38999.job
Company: COMPANY NAME

Report Date: Wednesday, February 19, 2014 4:05 PM
Version: 1.3.0.5

Summary:

All Cables	Twisted Pair	Coax/Twinax	Fiber
Total: 1	Total: 1	Total: 0	Total: 0
Pass: 1	Pass: 1	Pass: 0	Pass: 0
Fail: 0	Fail: 0	Fail: 0	Fail: 0
Tot. Length: 7,1m	Tot. Length: 7,1m	Tot. Length: 0m	Tot. Length: 0m

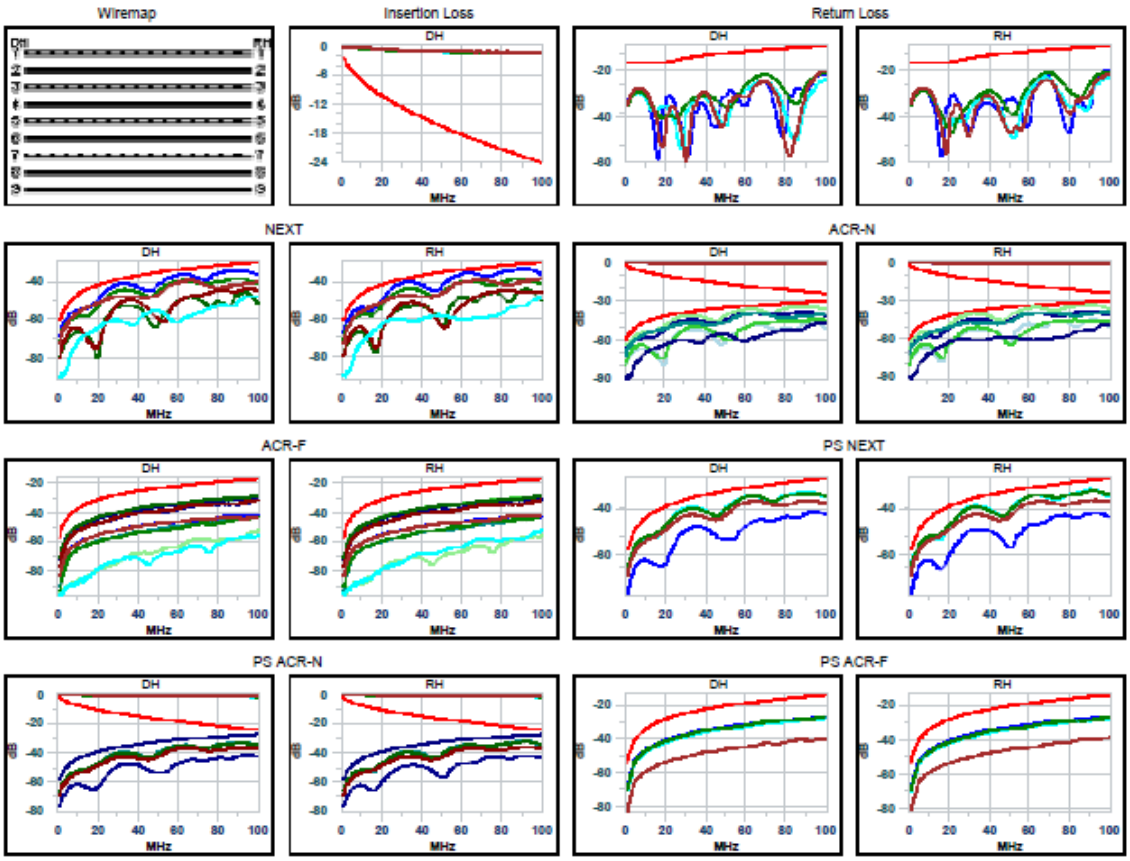
Pass

Test Name: SN5 PREV
Test Limit: CAT5E
Test Date: 12/20/2013
Test Time: 08:48:05
Adapter ID: 6004, Cat 6A Chan
User Notes:

NVP: 72
LANTEK II-1000 [948185/948240]
Firmware 2.012

Standard: TIA 568-B.2-Custom-Cust-Custom
Frequency Range: 1 - 100MHz
Operator: OPERATOR NAME
Contractor: CONTRACTOR NAME
Company: COMPANY NAME

	Result	Worst Case Value		Pairs	Limit	Margin		Pairs	Worst Overall Value	Limit	Margin
Wiremap	Pass	N/A		N/A	N/A	N/A					
Length	N/A	7,1 m.		1,2							
DC Resistance	Pass	2,6 ohms		1,2	20,0 ohms	17,4 ohms					
Capacitance	Pass	4,3 pF/m.		5,4	66,0 pF/m.	61,7 pF/m.					
Propagation Delay	Pass	35,2 ns		5,4	555,0 ns	519,8 ns					
Delay Skew	Pass	2,1 ns		5,4	50,0 ns	47,9 ns					
Insertion Loss	Pass	0,3 dB @ 1,0MHz	DH	3,6	< 2,2 dB	1,9 dB	DH	3,6	1,6 dB @ 99,5MHz	< 23,9 dB	22,3 dB
Return Loss	Pass	21,3 dB @ 68,5MHz	RH	3,6	> 11,7 dB	9,6 dB	RH	1,2	20,2 dB @ 99,8MHz	> 10,0 dB	10,2 dB
NEXT	Pass	40,8 dB @ 30,1MHz	RH	3,6-5,4	> 39,0 dB	1,8 dB	RH	3,6-5,4	33,2 dB @ 91,5MHz	> 30,7 dB	2,5 dB
ACR-N	Pass	64,3 dB @ 1,8MHz	RH	3,6-5,4	>= 56,5 dB	7,8 dB	RH	3,6-5,4	31,8 dB @ 89,8MHz	>= 8,3 dB	23,5 dB
ACR-F	Pass	31,7 dB @ 71,0MHz	DH	3,6-1,2	> 20,4 dB	11,3 dB	DH	3,6-1,2	28,8 dB @ 100,0MHz	> 17,4 dB	11,4 dB
Headroom	N/A	59,9 dB		N/A	N/A	N/A					
PS NEXT	Pass	39,2 dB @ 30,1MHz	RH	5,4	> 36,0 dB	3,2 dB	RH	5,4	31,8 dB @ 91,5MHz	> 27,7 dB	4,1 dB
PS ACR-N	Pass	62,3 dB @ 1,8MHz	RH	5,4	> 53,5 dB	8,8 dB	RH	5,4	30,4 dB @ 90,3MHz	> 5,1 dB	25,3 dB
PS ACR-F	Pass	51,4 dB @ 5,5MHz	DH	1,2	> 39,6 dB	11,8 dB	DH	1,2	26,5 dB @ 100,0MHz	> 14,4 dB	12,1 dB



SN5 at the beginning of qualification – Test based on EN50173 D:

IDEAL INDUSTRIES, Inc. Certified - Test Report

Job Name: SUPERS_38999.job
Company: COMPANY NAME

Report Date: Wednesday, February 19, 2014 4:06 PM
Version: 1.3.0.5

Summary:

All Cables	Twisted Pair	Coax/Twinax	Fiber
Total: 1	Total: 1	Total: 0	Total: 0
Pass: 1	Pass: 1	Pass: 0	Pass: 0
Fail: 0	Fail: 0	Fail: 0	Fail: 0
Tot. Length: 7,8m	Tot. Length: 7,8m	Tot. Length: 0m	Tot. Length: 0m

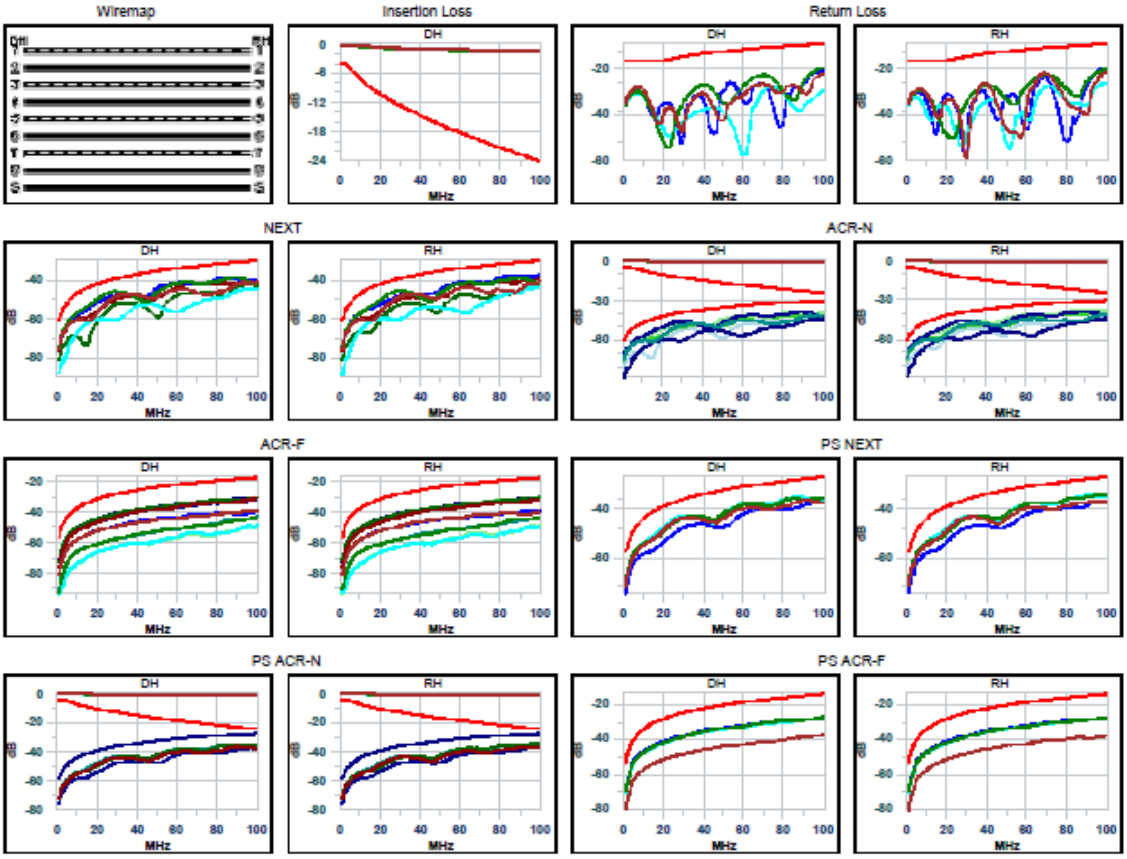
Pass

Test Name: SN5 EN PREV
Test Limit: EN D
Test Date: 12/20/2013
Test Time: 08:44:39
Adapter ID: 6004, Cat 6A Chan
User Notes:

NVP: 79
LANTEK II-1000 [948165/948240]
Firmware 2.012

Standard: EN50173-1-Custom
Frequency Range: 1 - 100MHz
Operator: OPERATOR NAME
Contractor: CONTRACTOR NAME
Company: COMPANY NAME

	Result	Worst Case Value		Pairs	Limit	Margin		Pairs	Worst Overall Value	Limit	Margin
Wiremap	Pass	N/A		N/A	N/A	N/A					
Length	N/A	7,8 m.		1,2							
DC Resistance	Pass	2,6 ohms		1,2	25,0 ohms	22,4 ohms					
Capacitance	Pass	4,0 pF/m.		5,4	56,0 pF/m.	52,0 pF/m.					
Propagation Delay	Pass	35,2 ns		5,4	548,0 ns	512,8 ns					
Delay Skew	Pass	2,1 ns		5,4	50,0 ns	47,9 ns					
Insertion Loss	Pass	0,3 dB @ 3,0MHz	DH	3,6	< 4,0 dB	3,7 dB	DH	3,6	1,5 dB @ 100,0MHz	< 24,0 dB	22,5 dB
Return Loss	Pass	20,3 dB @ 98,8MHz	DH	3,6	> 10,1 dB	10,2 dB	DH	3,6	20,3 dB @ 100,0MHz	> 10,0 dB	10,3 dB
NEXT	Pass	45,8 dB @ 27,1MHz	RH	7,8-5,4	> 39,8 dB	6,0 dB	RH	3,6-5,4	37,1 dB @ 100,0MHz	> 30,1 dB	7,0 dB
ACR-N	Pass	64,8 dB @ 3,1MHz	RH	7,8-5,4	>= 51,3 dB	13,5 dB	RH	3,6-5,4	35,6 dB @ 99,8MHz	>= 6,1 dB	29,5 dB
ACR-F	Pass	54,8 dB @ 5,7MHz	DH	3,6-1,2	> 42,4 dB	12,4 dB	DH	3,6-1,2	29,9 dB @ 100,0MHz	> 17,4 dB	12,5 dB
PS NEXT	Pass	34,9 dB @ 85,5MHz	RH	5,4	> 28,3 dB	6,6 dB	RH	3,6	33,9 dB @ 99,8MHz	> 27,1 dB	6,8 dB
PS ACR-N	Pass	61,5 dB @ 3,1MHz	RH	3,6	> 48,3 dB	13,2 dB	RH	3,6	32,4 dB @ 99,8MHz	> 3,1 dB	29,3 dB
PS ACR-F	Pass	52,5 dB @ 5,2MHz	DH	1,2	> 40,1 dB	12,4 dB	DH	3,6	27,2 dB @ 100,0MHz	> 14,4 dB	12,8 dB



SN5 after all the 5 steps of vibration – Test based on TIA/EIA568 CAT5e Test:

IDEAL INDUSTRIES, Inc. Certified - Test Report

Job Name: SUPERS_38999.job
Company: COMPANY NAME

Report Date: Wednesday, February 19, 2014 4:08 PM
Version: 1.3.0.5

Summary:

All Cables	Twisted Pair	Coax/Twinax	Fiber
Total: 1	Total: 1	Total: 0	Total: 0
Pass: 1	Pass: 1	Pass: 0	Pass: 0
Fail: 0	Fail: 0	Fail: 0	Fail: 0
Tot. Length: 7,1m	Tot. Length: 7,1m	Tot. Length: 0m	Tot. Length: 0m

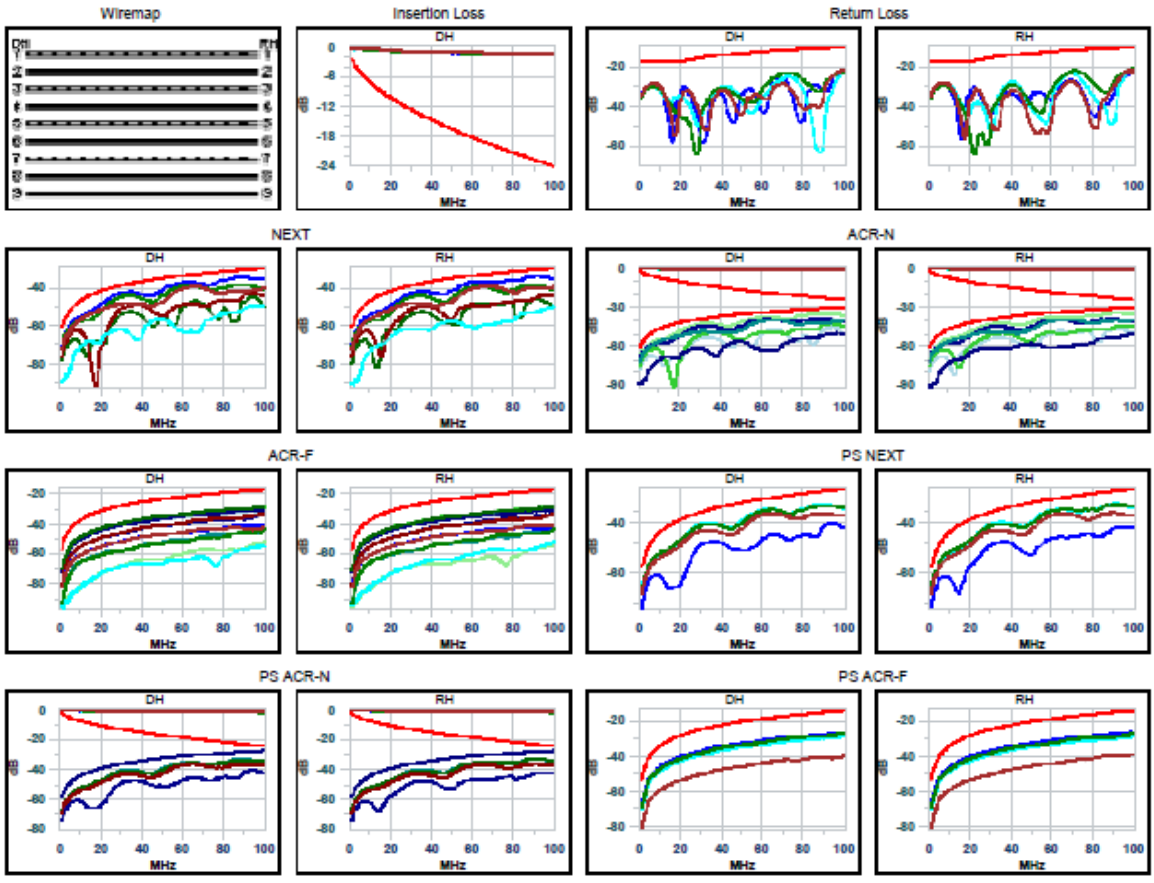
Pass

Test Name: SN5 VIB8
Test Limit: CAT5E
Test Date: 2/3/2014
Test Time: 16:30:37
Adapter ID: 6004, Cat 6A Chan
User Notes:

NVP: 72
LANTEK II-1000 [948185/948240]
Firmware 2.012

Standard: TIA 568-B.2-Custom-Cust-Custom
Frequency Range: 1 - 100MHz
Operator: OPERATOR NAME
Contractor: CONTRACTOR NAME
Company: COMPANY NAME

	Result	Worst Case Value		Pairs	Limit	Margin		Pairs	Worst Overall Value	Limit	Margin
Wiremap	Pass	N/A		N/A	N/A	N/A					
Length	N/A	7,1 m.		1,2							
DC Resistance	Pass	2,6 ohms		1,2	20,0 ohms	17,4 ohms					
Capacitance	Pass	4,2 pF/m.		5,4	66,0 pF/m.	61,8 pF/m.					
Propagation Delay	Pass	35,2 ns		5,4	555,0 ns	519,8 ns					
Delay Skew	Pass	2,1 ns		5,4	50,0 ns	47,9 ns					
Insertion Loss	Pass	0,3 dB @ 1,0MHz	DH	7,8	< 2,2 dB	1,9 dB	DH	3,6	1,6 dB @ 100,0MHz	< 24,0 dB	22,4 dB
Return Loss	Pass	21,8 dB @ 70,8MHz	RH	3,6	> 11,5 dB	10,3 dB	RH	3,6	20,9 dB @ 100,0MHz	> 10,0 dB	10,9 dB
NEXT	Pass	34,5 dB @ 85,8MHz	DH	3,6-5,4	> 31,2 dB	3,3 dB	RH	3,6-5,4	34,2 dB @ 92,5MHz	> 30,7 dB	3,5 dB
ACR-N	Pass	66,3 dB @ 1,8MHz	RH	3,6-5,4	>= 56,5 dB	9,8 dB	RH	3,6-5,4	32,8 dB @ 90,5MHz	>= 8,1 dB	24,7 dB
ACR-F	Pass	54,2 dB @ 5,1MHz	DH	3,6-1,2	> 43,3 dB	10,9 dB	DH	3,6-1,2	28,4 dB @ 98,5MHz	> 17,5 dB	10,9 dB
Headroom	N/A	55,6 dB		N/A	N/A	N/A					
PS NEXT	Pass	35,1 dB @ 60,8MHz	DH	5,4	> 30,8 dB	4,3 dB	RH	5,4	32,7 dB @ 92,5MHz	> 27,7 dB	5,0 dB
PS ACR-N	Pass	63,5 dB @ 1,8MHz	RH	5,4	> 53,5 dB	10,0 dB	RH	5,4	31,3 dB @ 91,5MHz	> 4,8 dB	26,5 dB
PS ACR-F	Pass	51,9 dB @ 5,1MHz	DH	1,2	> 40,3 dB	11,6 dB	DH	1,2	26,5 dB @ 100,0MHz	> 14,4 dB	12,1 dB



SN5 after all the 5 steps of vibration – Test based on EN50173 D:

IDEAL INDUSTRIES, Inc. Certified - Test Report

Job Name: SUPERS_38999.job
Company: COMPANY NAME

Report Date: Wednesday, February 19, 2014 4:09 PM
Version: 1.3.0.5

Summary:

All Cables	Twisted Pair	Coax/Twinax	Fiber
Total: 1	Total: 1	Total: 0	Total: 0
Pass: 1	Pass: 1	Pass: 0	Pass: 0
Fail: 0	Fail: 0	Fail: 0	Fail: 0
Tot. Length: 7,8m	Tot. Length: 7,8m	Tot. Length: 0m	Tot. Length: 0m

Pass

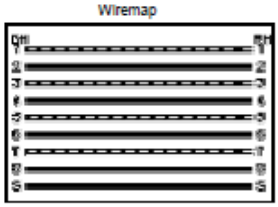
Test Name: SN5 VIB8 EN
Test Limit: EN D
Test Date: 2/3/2014
Test Time: 16:31:24
Adapter ID: 6004, Cat 6A Chan
User Notes:

NVP: 79
LANTEK II-1000 [948185/948240]
Firmware 2.012

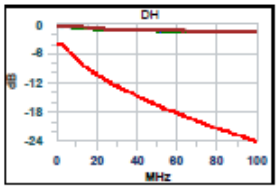
Standard: EN50173-1-Custom
Frequency Range: 1 - 100MHz
Operator: OPERATOR NAME
Contractor: CONTRACTOR NAME
Company: COMPANY NAME

	Result	Worst Case Value		Pairs	Limit	Margin	Pairs	Worst Overall Value	Limit	Margin
Wiremap	Pass	N/A		N/A	N/A	N/A				
Length	N/A	7,8 m.		1,2						
DC Resistance	Pass	2,6 ohms		1,2	25,0 ohms	22,4 ohms				
Capacitance	Pass	3,9 pF/m.		1,2	56,0 pF/m.	52,1 pF/m.				
Propagation Delay	Pass	35,2 ns		5,4	548,0 ns	512,8 ns				
Delay Skew	Pass	1,9 ns		5,4	50,0 ns	48,1 ns				
Insertion Loss	Pass	0,5 dB @ 2,5MHz	DH	5,4	< 4,0 dB	3,5 dB	DH 3,6	1,6 dB @ 100,0MHz	< 24,0 dB	22,4 dB
Return Loss	Pass	21,8 dB @ 71,3MHz	RH	3,6	> 11,5 dB	10,3 dB	RH 5,4	20,9 dB @ 100,0MHz	> 10,0 dB	10,9 dB
NEXT	Pass	34,4 dB @ 87,0MHz	RH	3,6-5,4	> 31,1 dB	3,3 dB	RH 3,6-5,4	34,1 dB @ 92,5MHz	> 30,7 dB	3,4 dB
ACR-N	Pass	63,4 dB @ 2,5MHz	RH	3,6-5,4	>= 52,9 dB	10,5 dB	RH 3,6-5,4	32,6 dB @ 92,5MHz	>= 7,7 dB	24,9 dB
ACR-F	Pass	54,0 dB @ 5,2MHz	DH	3,6-1,2	> 43,1 dB	10,9 dB	DH 3,6-1,2	28,3 dB @ 100,0MHz	> 17,4 dB	10,9 dB
PS NEXT	Pass	35,0 dB @ 61,8MHz	RH	5,4	> 30,7 dB	4,3 dB	RH 5,4	32,6 dB @ 91,5MHz	> 27,7 dB	4,9 dB
PS ACR-N	Pass	60,4 dB @ 2,5MHz	RH	5,4	> 49,9 dB	10,5 dB	RH 5,4	31,2 dB @ 91,3MHz	> 5,0 dB	26,2 dB
PS ACR-F	Pass	51,9 dB @ 5,1MHz	DH	1,2	> 40,3 dB	11,6 dB	RH 1,2	26,4 dB @ 100,0MHz	> 14,4 dB	12,0 dB

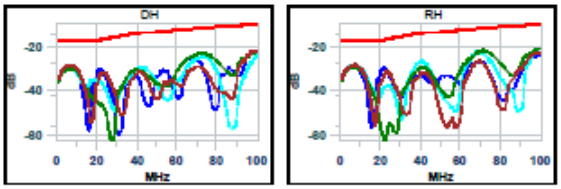
Wiremap



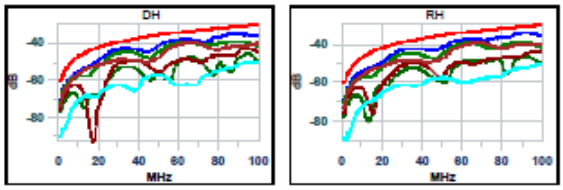
Insertion Loss



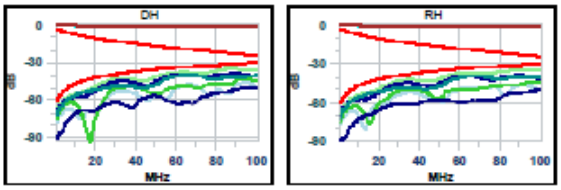
Return Loss



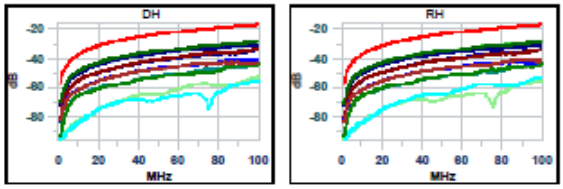
NEXT



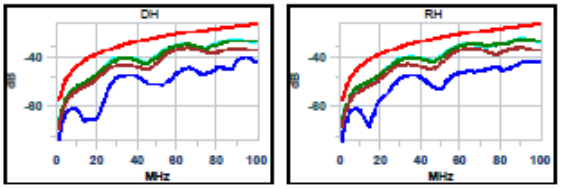
ACR-N



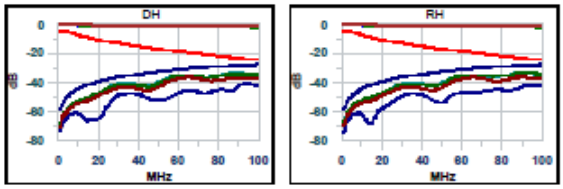
ACR-F



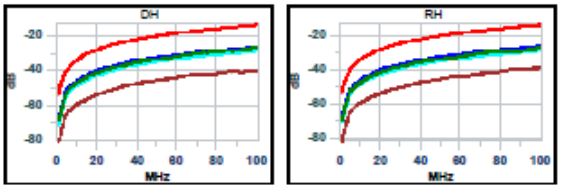
PS NEXT



PS ACR-N



PS ACR-F



SN6 at the beginning of qualification– Test based on TIA/EIA568 CAT5e Test:

IDEAL INDUSTRIES, Inc. Certified - Test Report

Job Name: SUPERS_38999.job
Company: COMPANY NAME

Report Date: Wednesday, February 19, 2014 4:10 PM
Version: 1.3.0.5

Summary:

All Cables	Twisted Pair	Coax/Twinax	Fiber
Total: 1	Total: 1	Total: 0	Total: 0
Pass: 1	Pass: 1	Pass: 0	Pass: 0
Fail: 0	Fail: 0	Fail: 0	Fail: 0
Tot. Length: 7,1m	Tot. Length: 7,1m	Tot. Length: 0m	Tot. Length: 0m

Pass

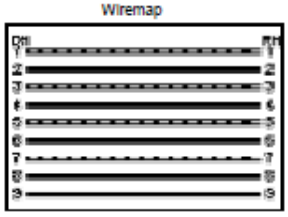
Test Name: SN6 PREV
Test Limit: CAT5E
Test Date: 12/20/2013
Test Time: 08:49:01
Adapter ID: 6004, Cat 6A Chan
User Notes:

NVP: 72
LANTEK II-1000 [948165/948240]
Firmware 2.012

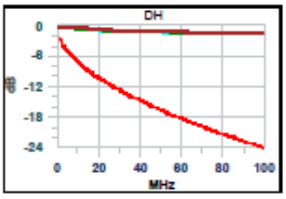
Standard: TIA 568-B.2-Custom-Cust-Custom
Frequency Range: 1 - 100MHz
Operator: OPERATOR NAME
Contractor: CONTRACTOR NAME
Company: COMPANY NAME

	Result	Worst Case Value		Pairs	Limit	Margin		Pairs	Worst Overall Value	Limit	Margin
Wiremap	Pass	N/A		N/A	N/A	N/A					
Length	N/A	7,1 m.		1,2							
DC Resistance	Pass	2,6 ohms		1,2	20,0 ohms	17,4 ohms					
Capacitance	Pass	4,4 pF/m.		5,4	66,0 pF/m.	61,6 pF/m.					
Propagation Delay	Pass	35,4 ns		5,4	555,0 ns	519,6 ns					
Delay Skew	Pass	2,3 ns		5,4	50,0 ns	47,7 ns					
Insertion Loss	Pass	0,3 dB @ 1,0MHz	DH	3,6	< 2,2 dB	1,9 dB	DH	5,4	1,6 dB @ 100,0MHz	< 24,0 dB	22,4 dB
Return Loss	Pass	20,1 dB @ 100,0MHz	RH	3,6	> 10,0 dB	10,1 dB	RH	3,6	20,1 dB @ 100,0MHz	> 10,0 dB	10,1 dB
NEXT	Pass	45,4 dB @ 27,9MHz	RH	7,8-5,4	> 39,6 dB	5,8 dB	RH	3,6-5,4	37,4 dB @ 100,0MHz	> 30,1 dB	7,3 dB
ACR-N	Pass	65,7 dB @ 2,8MHz	RH	7,8-5,4	>= 52,4 dB	13,3 dB	RH	3,6-5,4	35,8 dB @ 100,0MHz	>= 6,1 dB	29,7 dB
ACR-F	Pass	55,7 dB @ 5,1MHz	DH	3,6-1,2	> 43,3 dB	12,4 dB	RH	3,6-1,2	29,8 dB @ 100,0MHz	> 17,4 dB	12,4 dB
Headroom	N/A	58,4 dB		N/A	N/A	N/A					
PS NEXT	Pass	34,2 dB @ 95,3MHz	RH	3,6	> 27,4 dB	6,8 dB	RH	3,6	34,1 dB @ 99,8MHz	> 27,1 dB	7,0 dB
PS ACR-N	Pass	62,6 dB @ 2,8MHz	RH	3,6	> 49,4 dB	13,2 dB	RH	3,6	32,6 dB @ 99,8MHz	> 3,1 dB	29,5 dB
PS ACR-F	Pass	52,5 dB @ 5,2MHz	DH	1,2	> 40,1 dB	12,4 dB	DH	3,6	27,0 dB @ 100,0MHz	> 14,4 dB	12,6 dB

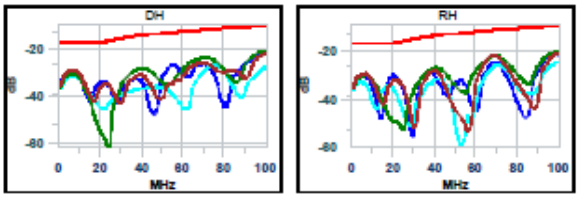
Wiremap



Insertion Loss



Return Loss



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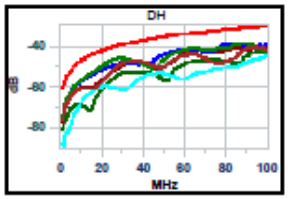
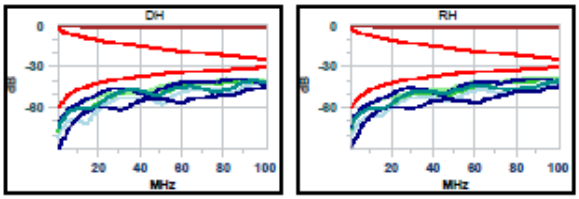
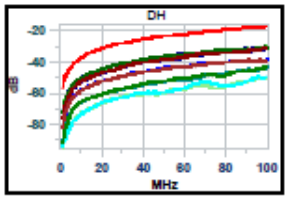


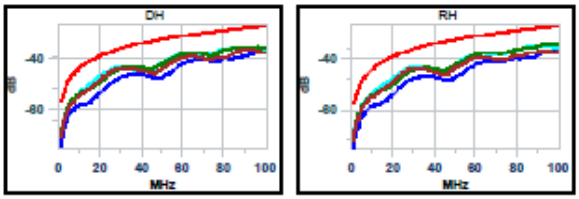
ACR-N



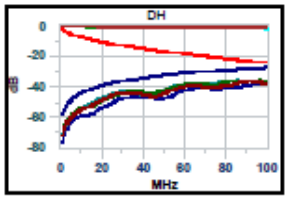
ACR-F



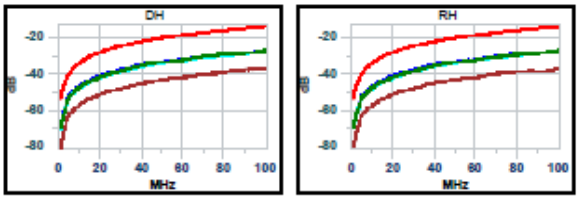
PS NEXT



PS ACR-N



PS ACR-F



SN6 at the beginning of qualification – Test based on EN50173 D:

IDEAL INDUSTRIES, Inc. Certified - Test Report

Job Name: SUPERS_38999.job
Company: COMPANY NAME

Report Date: Wednesday, February 19, 2014 4:10 PM
Version: 1.3.0.5

Summary:

All Cables	Twisted Pair	Coax/Twinax	Fiber
Total: 1	Total: 1	Total: 0	Total: 0
Pass: 1	Pass: 1	Pass: 0	Pass: 0
Fail: 0	Fail: 0	Fail: 0	Fail: 0
Tot. Length: 7,8m	Tot. Length: 7,8m	Tot. Length: 0m	Tot. Length: 0m

Pass

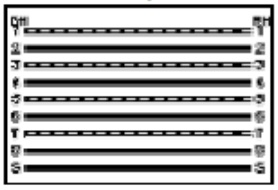
Test Name: SN6 EN PREV
Test Limit: EN D
Test Date: 12/20/2013
Test Time: 08:46:05
Adapter ID: 6004, Cat 6A Chan
User Notes:

NVP: 79
LANTEK II-1000 [948185/948240]
Firmware 2.012

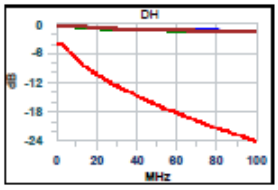
Standard: EN50173-1-Custom
Frequency Range: 1 - 100MHz
Operator: OPERATOR NAME
Contractor: CONTRACTOR NAME
Company: COMPANY NAME

	Result	Worst Case Value		Pairs	Limit	Margin		Pairs	Worst Overall Value	Limit	Margin
Wiremap	Pass	N/A		N/A	N/A	N/A					
Length	N/A	7,8 m.		1,2							
DC Resistance	Pass	2,6 ohms		1,2	25,0 ohms	22,4 ohms					
Capacitance	Pass	3,9 pF/m.		3,6	56,0 pF/m.	52,1 pF/m.					
Propagation Delay	Pass	35,0 ns		5,4	548,0 ns	513,0 ns					
Delay Skew	Pass	1,9 ns		5,4	50,0 ns	48,1 ns					
Insertion Loss	Pass	0,3 dB @ 1,0MHz	DH	3,6	< 4,0 dB	3,7 dB	DH	3,6	1,5 dB @ 100,0MHz	< 24,0 dB	22,5 dB
Return Loss	Pass	20,3 dB @ 98,0MHz	DH	1,2	> 10,1 dB	10,2 dB	DH	1,2	20,3 dB @ 99,5MHz	> 10,0 dB	10,3 dB
NEXT	Pass	33,1 dB @ 89,0MHz	RH	3,6-5,4	> 31,0 dB	2,1 dB	RH	3,6-5,4	33,1 dB @ 91,8MHz	> 30,7 dB	2,4 dB
ACR-N	Pass	62,4 dB @ 2,5MHz	RH	3,6-5,4	>= 52,9 dB	9,5 dB	RH	3,6-5,4	31,7 dB @ 91,8MHz	>= 7,8 dB	23,9 dB
ACR-F	Pass	28,5 dB @ 100,0MHz	DH	3,6-1,2	> 17,4 dB	11,1 dB	DH	3,6-1,2	28,5 dB @ 100,0MHz	> 17,4 dB	11,1 dB
PS NEXT	Pass	39,5 dB @ 29,4MHz	RH	5,4	> 36,2 dB	3,3 dB	RH	5,4	31,8 dB @ 91,8MHz	> 27,7 dB	4,1 dB
PS ACR-N	Pass	60,1 dB @ 2,5MHz	RH	5,4	> 49,9 dB	10,2 dB	RH	5,4	30,4 dB @ 91,0MHz	> 5,0 dB	25,4 dB
PS ACR-F	Pass	51,7 dB @ 5,5MHz	RH	1,2	> 39,6 dB	12,1 dB	RH	1,2	26,6 dB @ 100,0MHz	> 14,4 dB	12,2 dB

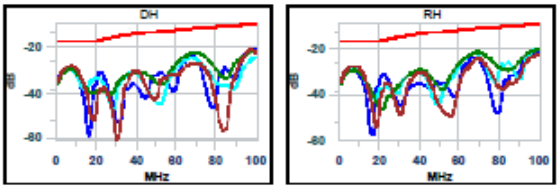
Wiremap



Insertion Loss



Return Loss



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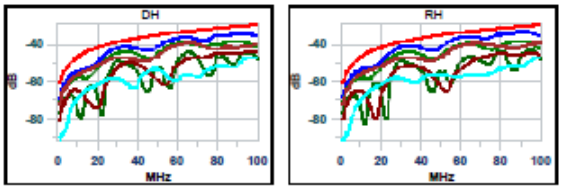
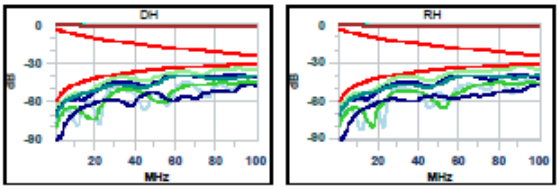
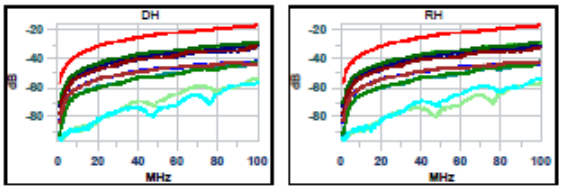


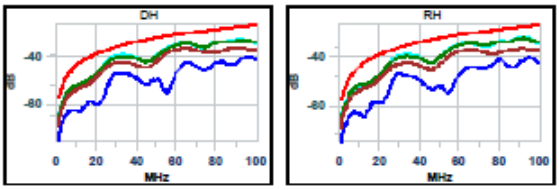
ACR-N



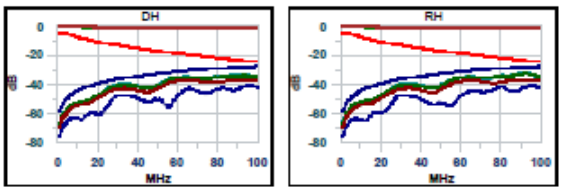
ACR-F



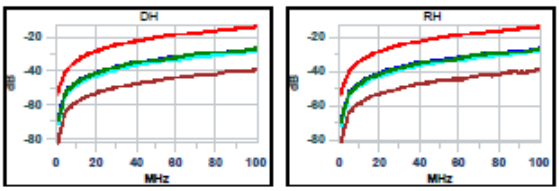
PS NEXT



PS ACR-N



PS ACR-F



SN6 after all the 5 steps of vibration – Test based on TIA/EIA568 CAT5e Test:

IDEAL INDUSTRIES, Inc. Certified - Test Report

Job Name: SUPERS_38999.job
Company: COMPANY NAME

Report Date: Wednesday, February 19, 2014 4:09 PM
Version: 1.3.0.5

Summary:

All Cables	Twisted Pair	Coax/Twinax	Fiber
Total: 1	Total: 1	Total: 0	Total: 0
Pass: 1	Pass: 1	Pass: 0	Pass: 0
Fail: 0	Fail: 0	Fail: 0	Fail: 0
Tot. Length: 7,1m	Tot. Length: 7,1m	Tot. Length: 0m	Tot. Length: 0m

Pass

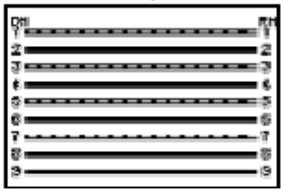
Test Name: SN6 VIB8
Test Limit: CAT5E
Test Date: 2/3/2014
Test Time: 16:25:08
Adapter ID: 6004, Cat 6A Chan
User Notes:

NVP: 72
LANTEK II-1000 [948185/948240]
Firmware 2.012

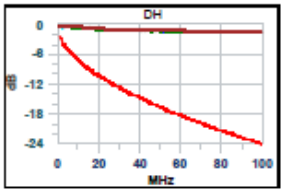
Standard: TIA 568-B.2-Custom-Cust-Custom
Frequency Range: 1 - 100MHz
Operator: OPERATOR NAME
Contractor: CONTRACTOR NAME
Company: COMPANY NAME

	Result	Worst Case Value		Pairs	Limit	Margin		Pairs	Worst Overall Value	Limit	Margin
Wiremap	Pass	N/A		N/A	N/A	N/A					
Length	N/A	7,1 m.		1,2							
DC Resistance	Pass	2,6 ohms		1,2	20,0 ohms	17,4 ohms					
Capacitance	Pass	4,4 pF/m.		5,4	66,0 pF/m.	61,6 pF/m.					
Propagation Delay	Pass	35,2 ns		5,4	555,0 ns	519,8 ns					
Delay Skew	Pass	2,1 ns		5,4	50,0 ns	47,9 ns					
Insertion Loss	Pass	0,3 dB @ 1,0MHz	DH	7,8	< 2,2 dB	1,9 dB	DH	3,6	1,6 dB @ 100,0MHz	< 24,0 dB	22,4 dB
Return Loss	Pass	19,6 dB @ 98,0MHz	RH	1,2	> 10,1 dB	9,5 dB	RH	1,2	19,6 dB @ 99,0MHz	> 10,1 dB	9,5 dB
NEXT	Pass	46,1 dB @ 27,1MHz	DH	7,8-5,4	> 39,8 dB	6,3 dB	RH	3,6-5,4	37,1 dB @ 100,0MHz	> 30,1 dB	7,0 dB
ACR-N	Pass	68,3 dB @ 2,1MHz	RH	7,8-5,4	>= 55,1 dB	13,2 dB	RH	3,6-5,4	35,5 dB @ 100,0MHz	>= 6,1 dB	29,4 dB
ACR-F	Pass	54,9 dB @ 5,5MHz	DH	5,4-1,2	> 42,6 dB	12,3 dB	DH	3,6-1,2	29,8 dB @ 100,0MHz	> 17,4 dB	12,4 dB
Headroom	N/A	56,5 dB		N/A	N/A	N/A					
PS NEXT	Pass	34,9 dB @ 85,3MHz	RH	5,4	> 28,3 dB	6,6 dB	RH	3,6	34,5 dB @ 100,0MHz	> 27,1 dB	7,4 dB
PS ACR-N	Pass	63,3 dB @ 2,5MHz	RH	3,6	> 50,4 dB	12,9 dB	RH	3,6	32,9 dB @ 99,8MHz	> 3,1 dB	29,8 dB
PS ACR-F	Pass	51,9 dB @ 5,5MHz	RH	1,2	> 39,6 dB	12,3 dB	DH	3,6	26,8 dB @ 100,0MHz	> 14,4 dB	12,4 dB

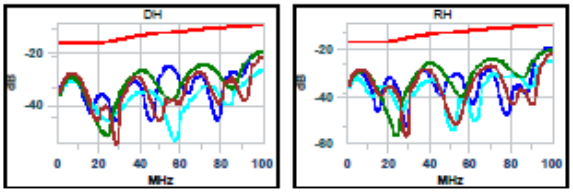
Wiremap



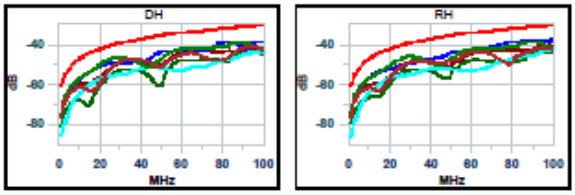
Insertion Loss



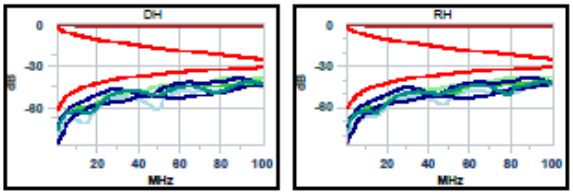
Return Loss



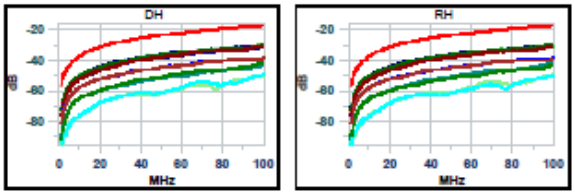
NEXT



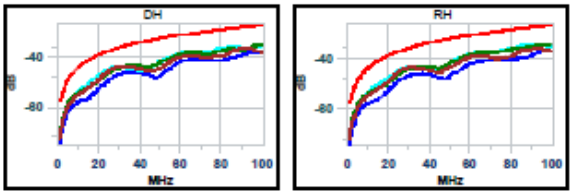
ACR-N



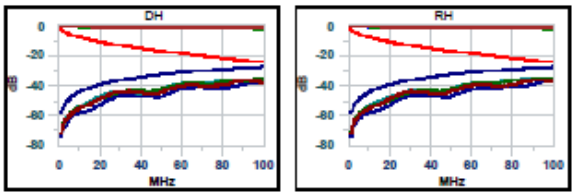
ACR-F



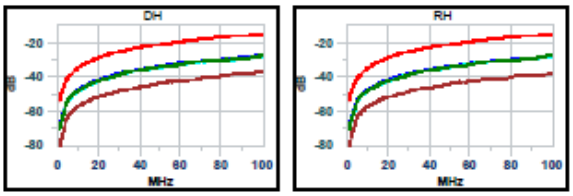
PS NEXT



PS ACR-N



PS ACR-F



SN6 after all the 5 steps of vibration – Test based on EN50173 D:

IDEAL INDUSTRIES, Inc. Certified - Test Report

Job Name: SUPERS_38999.job
Company: COMPANY NAME

Report Date: Wednesday, February 19, 2014 4:09 PM
Version: 1.3.0.5

Summary:

All Cables	Twisted Pair	Coax/Twinax	Fiber
Total: 1	Total: 1	Total: 0	Total: 0
Pass: 1	Pass: 1	Pass: 0	Pass: 0
Fail: 0	Fail: 0	Fail: 0	Fail: 0
Tot. Length: 7,8m	Tot. Length: 7,8m	Tot. Length: 0m	Tot. Length: 0m

Pass

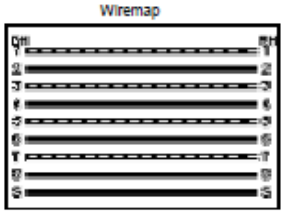
Test Name: SN6 VIB8 EN
Test Limit: EN D
Test Date: 2/3/2014
Test Time: 16:24:10
Adapter ID: 6004, Cat 6A Chan
User Notes:

NVP: 79
LANTEK II-1000 [948165/948240]
Firmware 2.012

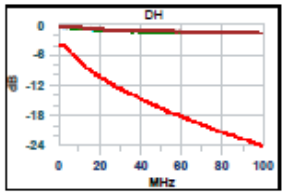
Standard: EN50173-1-Custom
Frequency Range: 1 - 100MHz
Operator: OPERATOR NAME
Contractor: CONTRACTOR NAME
Company: COMPANY NAME

	Result	Worst Case Value		Pairs	Limit	Margin		Pairs	Worst Overall Value	Limit	Margin
Wiremap	Pass	N/A		N/A	N/A	N/A					
Length	N/A	7,8 m.		1,2							
DC Resistance	Pass	2,6 ohms		1,2	25,0 ohms	22,4 ohms					
Capacitance	Pass	3,9 pF/m.		5,4	56,0 pF/m.	52,1 pF/m.					
Propagation Delay	Pass	35,4 ns		5,4	548,0 ns	512,6 ns					
Delay Skew	Pass	2,1 ns		5,4	50,0 ns	47,9 ns					
Insertion Loss	Pass	0,5 dB @ 2,5MHz	DH	5,4	< 4,0 dB	3,5 dB	DH	3,6	1,6 dB @ 100,0MHz	< 24,0 dB	22,4 dB
Return Loss	Pass	19,8 dB @ 98,3MHz	RH	1,2	> 10,1 dB	9,7 dB	RH	1,2	19,8 dB @ 98,3MHz	> 10,1 dB	9,7 dB
NEXT	Pass	45,8 dB @ 27,9MHz	RH	7,8-5,4	> 39,6 dB	6,2 dB	RH	3,6-5,4	37,4 dB @ 100,0MHz	> 30,1 dB	7,3 dB
ACR-N	Pass	66,4 dB @ 2,5MHz	RH	7,8-5,4	>= 52,9 dB	13,5 dB	RH	3,6-5,4	35,8 dB @ 100,0MHz	>= 6,1 dB	29,7 dB
ACR-F	Pass	54,7 dB @ 5,5MHz	DH	1,2-5,4	> 42,6 dB	12,1 dB	RH	3,6-1,2	29,6 dB @ 100,0MHz	> 17,4 dB	12,2 dB
PS NEXT	Pass	34,8 dB @ 87,5MHz	RH	5,4	> 28,1 dB	6,7 dB	RH	3,6	34,6 dB @ 100,0MHz	> 27,1 dB	7,5 dB
PS ACR-N	Pass	61,4 dB @ 3,1MHz	RH	3,6	> 48,3 dB	13,1 dB	RH	3,6	33,0 dB @ 96,5MHz	> 3,7 dB	29,3 dB
PS ACR-F	Pass	51,8 dB @ 5,5MHz	DH	1,2	> 39,6 dB	12,2 dB	DH	3,6	26,9 dB @ 100,0MHz	> 14,4 dB	12,5 dB

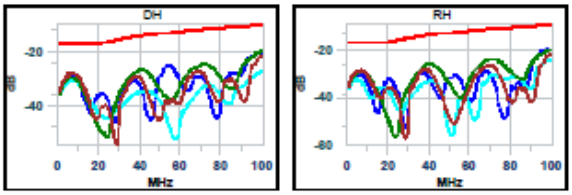
Wiremap



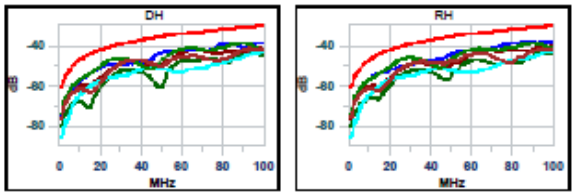
Insertion Loss



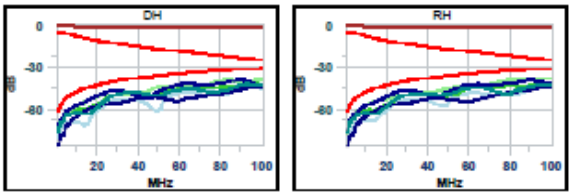
Return Loss



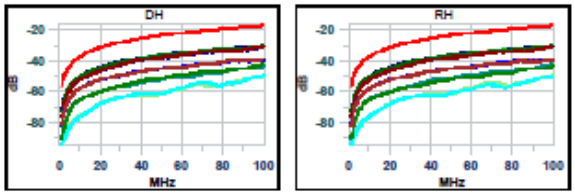
NEXT



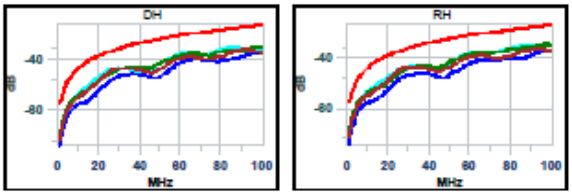
ACR-N



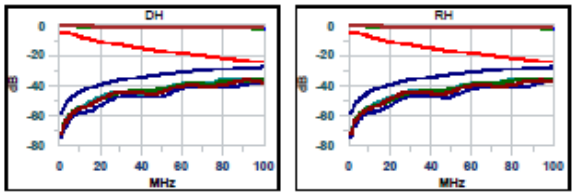
ACR-F



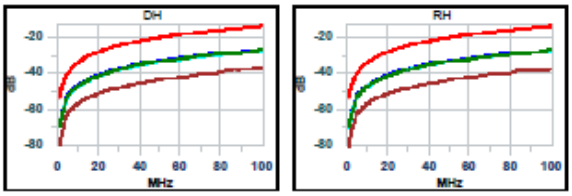
PS NEXT



PS ACR-N



PS ACR-F



About Ethernet Test Compliance:

the connectors are in compliance with both TIA/EIA568 Cat.5 and EN 50173-1 D, and there are no significant differences in the Ethernet Test parameters between before and after the vibration tests.

Watertightness Test:

After 16 hours inside water at 1Bar pressure there is no evidence of water moisture inside the connectors.

Insulation Resistance after water-tightness:

Cable	500 VDC – 1 minute (GOHM)	
	SN5	SN6
Orange	225	7,84
White-Orange	78,5	6480
Green	5,97	8,34
White-Green	3190	5,85
Blue	8,8	9,81
White-blue	11,99	6,32
Brown	35,1	5,12
White-Brown	5,42	7,95

3.7. Comments / remarks – commenti / osservazioni

The connectors pass with positive result the Vibration tests.

4. Mating cycle Test

4.1. Description of Test method procedure – Descrizione della procedura del metodo di prova

On the connectors are made mating / un-mating cycle with the following step:

Step1: 100 cycles
Step2: +150 cycles
Step3: +250 cycles
Step4: +500 cycles

Final number of mating/un-mating cycles: 1000.

Before the first step and after each steps the connectors are subjected to the Pass/Fail criteria Test:

Visual inspection
Ground Resistance measurement: on the mated connectors is applied 1,5VDC & 0,1mA and measured the voltage drop between the cable clamp of the receptacle and the cable clamp of the plug.
Insulation Resistance measurement: at 500VDC for 1 minute between each contacts and the others and the shell.
Ethernet compliance Test: the mated connectors cable are connected to the Ethernet compliance certificatory tester, then a TIA/EIA568 Category 5 test and a EN50173 Category D test are made.
Dielectric withstanding voltage test: a voltage of 900VAC 50Hz is applied between each contacts and the other contact for 1 minute.
Water tightness Test IP68:this test is made only after the last step. The mated connectors with back-shell and cables protected by heat shrink boot are placed under water at 1BAR pressure for 16 hours. Then the connectors are removed from water, un-mated to check the presence of water moisture inside the connectors and the insulation resistance test is made.

4.2. Items tested – campioni sottoposti a prova

SN3R RDPe001/14 mated with SN3P RDPe001/14

4.3. Relevant equipment – strumenti utilizzati

Equipment / Identification- strumenti / numero di matricola	**Manufacturer / model** – marca / modello	**Calibration expiration date** – scadenza taratura
Insulation resistance		
Megaohmmeter/ R7	**Sefelec/ M1501M**	**09/14**
Ground Resistance		
Voltmeter / NV01	**Agilent / 34420 A**	**03/14**
Power supplier GC1	**Toelnerr / TOE 8872/40**	**07/14**
Ethernet Test		
Ethernet Cables Tester/ LK7G/1	**Lantek Ideal / Lantek II**	**02/15**
Dielectric Withstanding Voltage		
Dielectric breakdown tester/ UH28CS	**Etl-Prueftechnik/ UH28CS**	**04/16**
Watertightness Test		
Pressure gauges/ MAN11	**Wikia / 0-2.5BAR Kl.1.6**	**06/14**

4.4. Requirement - requisiti

Visual inspection: Not presence of mechanical cracks/irregularities
Ground Resistance: <=2,5 mohm
Insulation Resistance: >5 Gohm
Dielectric Withstanding Voltage: not breakdown or flashover, current Leak: <2 mA
Compliant with TIA/EIA568 cat 5e and EN50173 D

4.5. Date and place of test – data e luogo della prova

Place of test: Glenair Italia S.p.A. Testlab – Electrical Test Room
From 21/01/14 to 14/02/14

4.6. Environmental conditions – condizioni ambientali

Step1:
21/01/14 temperature: 23,6 °C Humidity: 36,8 %
Step2:
24/01/14 temperature: 22,8 °C Humidity: 36,8 %
Step3:
27/01/14 temperature: 24,5 °C Humidity: 24,7 %
Step4:
14/02/14 temperature: 21,9 °C Humidity: 34,3 %

4.7. Result – risultati

Visual examination:
After Step1: No presence of damages or other defects on the connectors.

After Step2: Not presence of damages or other defects on the connectors.
After Step3: Not presence of damages or other defects on the connectors.
After Step4: Not presence of damages or other defects on the connectors.

RESULT: PASS

Ground Resistance (<=2,5mohm):

Before the first step	
Cable	Ground Resistance (1,5 VDC - 100 mA)
	SN3
Measure (mV)	0,153
Result (mohm)	1,53

+100 Mating cycle		+150 Mating cycle	
Cable	Ground Resistance (1,5 VDC - 100 mA)	Cable	Ground Resistance (1,5 VDC - 100 mA)
	SN1		SN1
Measure (mV)	0,068	Measure (mV)	0,052
Result (mohm)	0,68	Result (mohm)	0,52
+250 Mating cycle		+500 Mating cycle	
Cable	Ground Resistance (1,5 VDC - 100 mA)	Cable	Ground Resistance (1,5 VDC - 100 mA)
	SN1		SN1
Measure (mV)	0,092	Measure (mV)	0,14
Result (mohm)	0,92	Result (mohm)	1,4

RESULT: PASS

Insulation resistance (>5Gohm):

Before the first step	
Cable	500 VDC - 1 minute (GOHM)
	SN3
Orange	1067
White-Orange	1401
Green	2660
White-Green	3720
Blue	3710
White-blue	2280
Brown	13390
White-Brown	41900

+100 mating cycle		+150 mating cycle	
Cable	500 VDC - 1 minute (GOHM)	Cable	500 VDC - 1 minute (GOHM)
	SN3		SN3
Orange	1471	Orange	3160
White-Orange	5440	White-Orange	2850
Green	751	Green	713
White-Green	2080	White-Green	2140
Blue	1375	Blue	1856
White-blue	613	White-blue	990
Brown	6490	Brown	6330
White-Brown	1176	White-Brown	1852
+250 mating cycle		+500 mating cycle	
Cable	500 VDC - 1 minute (GOHM)	Cable	500 VDC - 1 minute (GOHM)
	SN3		SN3
Orange	9250	Orange	411
White-Orange	5450	White-Orange	8910
Green	2630	Green	2300
White-Green	5490	White-Green	1761
Blue	4410	Blue	849
White-blue	2370	White-blue	1815
Brown	10650	Brown	1029
White-Brown	10860	White-Brown	4820

RESULT: PASS

Dielectric Withstanding Voltage (I leak.<2mA):

Before the first step	
Cable	900 VAC - 1 minute (mA)
	SN3
Orange	0,1
White-Orange	0,1
Green	0,1
White-Green	0,1
Blue	0,1
White-blue	0,1
Brown	0,1
White-Brown	0,1

+100 Mating cycle		+150 Mating cycle	
Cable	900 VAC - 1 minute (mA)	Cable	900 VAC - 1 minute (mA)
	SN3		SN3
Orange	0,1	Orange	0,15
White-Orange	0,1	White-Orange	0,15
Green	0,1	Green	0,15
White-Green	0,1	White-Green	0,15
Blue	0,1	Blue	0,15
White-blue	0,1	White-blue	0,15
Brown	0,1	Brown	0,15
White-Brown	0,1	White-Brown	0,15
+250 Mating cycle		+500 Mating cycle	
Cable	900 VAC - 1 minute (mA)	Cable	900 VAC - 1 minute (mA)
	SN3		SN3
Orange	0,15	Orange	0,15
White-Orange	0,15	White-Orange	0,15
Green	0,15	Green	0,15
White-Green	0,15	White-Green	0,15
Blue	0,15	Blue	0,15
White-blue	0,15	White-blue	0,15
Brown	0,15	Brown	0,15
White-Brown	0,15	White-Brown	0,15

RESULT: PASS

Ethernet Test:

SN3 at the beginning of qualification– Test based on TIA/EIA568 CAT5e Test:

IDEAL INDUSTRIES, Inc. Certified - Test Report

Job Name: SUPERS_38999.job
Company: COMPANY NAME

Report Date: Wednesday, February 19, 2014 4:53 PM
Version: 1.3.0.5

Summary:

All Cables	Twisted Pair	Coax/Twinax	Fiber
Total: 1	Total: 1	Total: 0	Total: 0
Pass: 1	Pass: 1	Pass: 0	Pass: 0
Fail: 0	Fail: 0	Fail: 0	Fail: 0
Tot. Length: 3,9m	Tot. Length: 3,9m	Tot. Length: 0m	Tot. Length: 0m

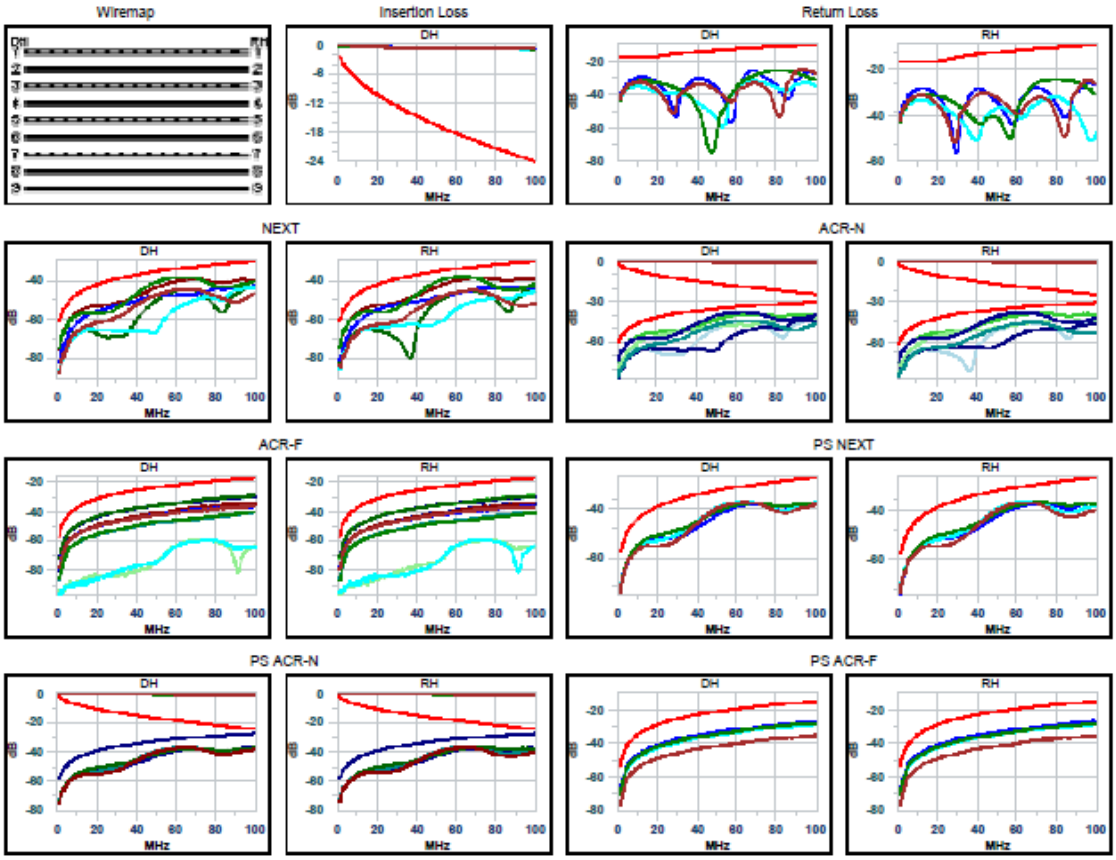
Pass

Test Name: SN3 DW
Test Limit: CAT5E
Test Date: 12/18/2013
Test Time: 10:59:54
Adapter ID: 6004, Cat 6A Chan
User Notes:

NVP: 72
LANTEK II-1000 [948185/948240]
Firmware 2.012

Standard: TIA 568-B.2-Custom-Cust-Custom
Frequency Range: 1 - 100MHz
Operator: OPERATOR NAME
Contractor: CONTRACTOR NAME
Company: COMPANY NAME

	Result	Worst Case Value		Pairs	Limit	Margin		Pairs	Worst Overall Value	Limit	Margin
Wiremap	Pass	N/A		N/A	N/A	N/A					
Length	N/A	3,9 m.		1,2							
DC Resistance	Pass	2,0 ohms		1,2	20,0 ohms	18,0 ohms					
Capacitance	Pass	3,9 pF/m.		5,4	66,0 pF/m.	62,1 pF/m.					
Propagation Delay	Pass	20,1 ns		7,8	555,0 ns	534,9 ns					
Delay Skew	Pass	1,7 ns		7,8	50,0 ns	48,3 ns					
Insertion Loss	Pass	0,2 dB @ 1,0MHz	DH	3,6	< 2,2 dB	2,0 dB	DH	5,4	0,9 dB @ 100,0MHz	< 24,0 dB	23,1 dB
Return Loss	Pass	28,4 dB @ 11,8MHz	RH	1,2	> 17,0 dB	11,4 dB	DH	7,8	24,3 dB @ 93,8MHz	> 10,3 dB	14,0 dB
NEXT	Pass	38,0 dB @ 59,5MHz	RH	7,8-5,4	> 34,0 dB	4,0 dB	RH	7,8-5,4	37,9 dB @ 63,5MHz	> 33,5 dB	4,4 dB
ACR-N	Pass	70,2 dB @ 1,8MHz	RH	7,8-5,4	>= 56,5 dB	13,7 dB	RH	7,8-5,4	37,2 dB @ 62,3MHz	>= 15,0 dB	22,2 dB
ACR-F	Pass	30,7 dB @ 80,3MHz	DH	3,6-1,2	> 19,3 dB	11,4 dB	DH	3,6-1,2	29,0 dB @ 100,0MHz	> 17,4 dB	11,6 dB
Headroom	N/A	61,8 dB		N/A	N/A	N/A					
PS NEXT	Pass	36,9 dB @ 59,5MHz	RH	5,4	> 31,0 dB	5,9 dB	RH	5,4	36,6 dB @ 67,3MHz	> 30,0 dB	6,6 dB
PS ACR-N	Pass	69,0 dB @ 1,8MHz	RH	5,4	> 53,5 dB	15,5 dB	RH	5,4	35,9 dB @ 62,3MHz	> 12,0 dB	23,9 dB
PS ACR-F	Pass	52,1 dB @ 5,1MHz	DH	1,2	> 40,3 dB	11,8 dB	RH	1,2	26,2 dB @ 100,0MHz	> 14,4 dB	11,8 dB



SN3 at the beginning of qualification – Test based on EN50173 D:

IDEAL INDUSTRIES, Inc. Certified - Test Report

Job Name: SUPERS_38999.job
Company: COMPANY NAME

Report Date: Wednesday, February 19, 2014 4:54 PM
Version: 1.3.0.5

Summary:

All Cables	Twisted Pair	Coax/Twinax	Fiber
Total: 1	Total: 1	Total: 0	Total: 0
Pass: 1	Pass: 1	Pass: 0	Pass: 0
Fail: 0	Fail: 0	Fail: 0	Fail: 0
Tot. Length: 6,7m	Tot. Length: 6,7m	Tot. Length: 0m	Tot. Length: 0m

Pass

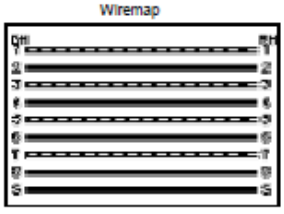
Test Name: SN3 DWV EN
Test Limit: EN D
Test Date: 12/14/2013
Test Time: 11:02:45
Adapter ID: 7000, TERA Chan
User Notes:

NVP: 79
LANTEK II-1000 [948185/948240]
Firmware 2.012

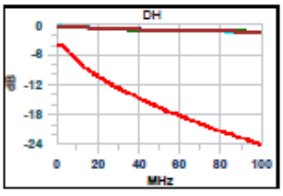
Standard: EN50173-1-Custom
Frequency Range: 1 - 100MHz
Operator: OPERATOR NAME
Contractor: CONTRACTOR NAME
Company: COMPANY NAME

	Result	Worst Case Value		Pairs	Limit	Margin		Pairs	Worst Overall Value	Limit	Margin
Wiremap	Pass	N/A		N/A	N/A	N/A					
Length	N/A	6,7 m.		3,6							
DC Resistance	Pass	3,2 ohms		1,2	25,0 ohms	21,8 ohms					
Capacitance	N/A	3,8 pF/m.		5,4							
Propagation Delay	Pass	30,1 ns		7,8	548,0 ns	517,9 ns					
Delay Skew	Pass	1,7 ns		7,8	50,0 ns	48,3 ns					
Insertion Loss	Pass	0,3 dB @ 2,5MHz	DH	7,8	< 4,0 dB	3,7 dB	DH	5,4	1,2 dB @ 100,0MHz	< 24,0 dB	22,8 dB
Return Loss	Pass	14,1 dB @ 43,0MHz	RH	5,4	> 13,7 dB	0,4 dB	RH	5,4	12,4 dB @ 86,8MHz	> 10,6 dB	1,8 dB
NEXT	Pass	65,9 dB @ 2,1MHz	DH	5,4-1,2	> 58,3 dB	7,6 dB	DH	3,6-1,2	40,4 dB @ 100,0MHz	> 30,1 dB	10,3 dB
ACR-N	Pass	65,7 dB @ 2,1MHz	DH	5,4-1,2	>= 54,3 dB	11,4 dB	DH	3,6-1,2	39,2 dB @ 100,0MHz	>= 6,1 dB	33,1 dB
ACR-F	Pass	51,8 dB @ 74,5MHz	DH	7,8-5,4	> 20,0 dB	31,8 dB	DH	5,4-3,6	51,1 dB @ 100,0MHz	> 17,4 dB	33,7 dB
PS NEXT	Pass	60,8 dB @ 2,8MHz	RH	5,4	> 53,1 dB	7,7 dB	DH	1,2	38,4 dB @ 100,0MHz	> 27,1 dB	11,3 dB
PS ACR-N	Pass	60,6 dB @ 2,8MHz	RH	5,4	> 49,1 dB	11,5 dB	DH	1,2	37,2 dB @ 100,0MHz	> 3,1 dB	34,1 dB
PS ACR-F	Pass	49,0 dB @ 72,0MHz	RH	5,4	> 17,3 dB	31,7 dB	DH	5,4	47,5 dB @ 100,0MHz	> 14,4 dB	33,1 dB

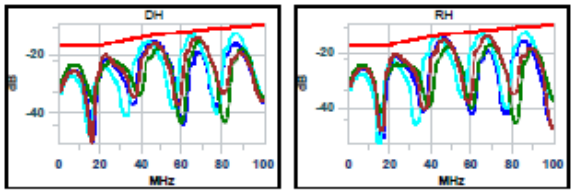
Wiremap



Insertion Loss



Return Loss



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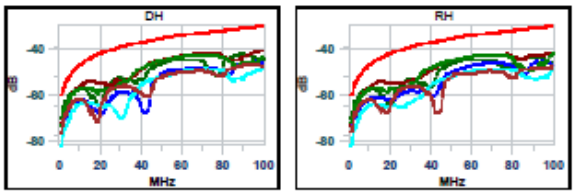

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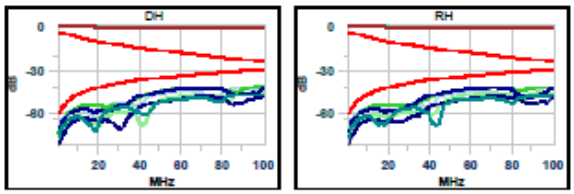
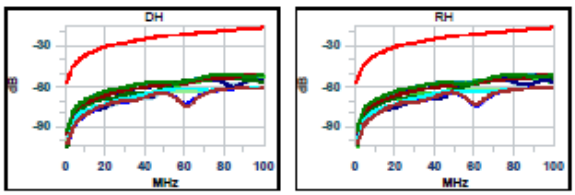


ACR-F



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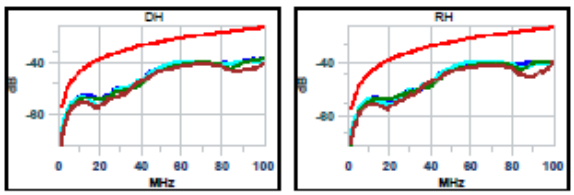

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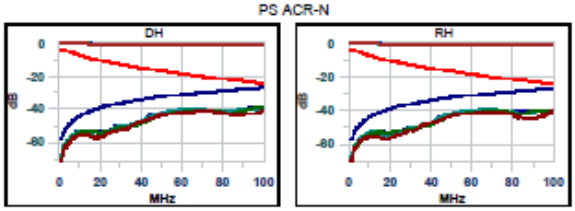
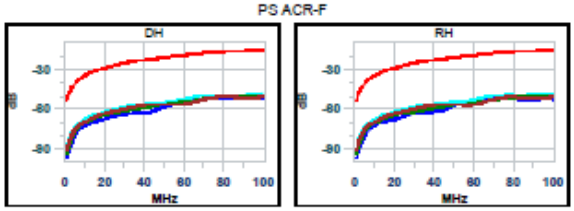


PS ACR-F



SN3 after all the 5 steps of mating cycle – Test based on TIA/EIA568 CAT5e Test:

IDEAL INDUSTRIES, Inc. Certified - Test Report

Job Name: SUPERS_38999.job
Company: COMPANY NAME

Report Date: Wednesday, February 19, 2014 4:51 PM
Version: 1.3.0.5

Summary:

All Cables	Twisted Pair	Coax/Twinax	Fiber
Total: 1	Total: 1	Total: 0	Total: 0
Pass: 1	Pass: 1	Pass: 0	Pass: 0
Fail: 0	Fail: 0	Fail: 0	Fail: 0
Tot. Length: 3,9m	Tot. Length: 3,9m	Tot. Length: 0m	Tot. Length: 0m

Pass

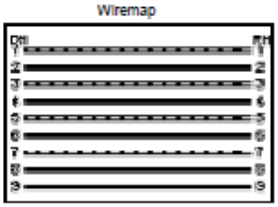
Test Name: SN3 1000M
Test Limit: CAT5E
Test Date: 2/13/2014
Test Time: 16:45:05
Adapter ID: 6004, Cat 6A Chan
User Notes:

NVP: 72
LANTEK II-1000 [948185/948240]
Firmware 2.012

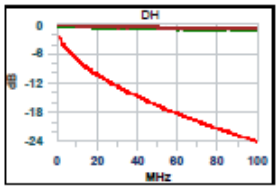
Standard: TIA 568-B.2-Custom-Cust-Custom
Frequency Range: 1 - 100MHz
Operator: OPERATOR NAME
Contractor: CONTRACTOR NAME
Company: COMPANY NAME

	Result	Worst Case Value		Pairs	Limit	Margin		Pairs	Worst Overall Value	Limit	Margin
Wiremap	Pass	N/A		N/A	N/A	N/A					
Length	N/A	3,9 m.		1,2							
DC Resistance	Pass	3,5 ohms		3,6	20,0 ohms	16,5 ohms					
Capacitance	Pass	4,2 pF/m.		5,4	66,0 pF/m.	61,8 pF/m.					
Propagation Delay	Pass	20,1 ns		7,8	555,0 ns	534,9 ns					
Delay Skew	Pass	1,9 ns		7,8	50,0 ns	48,1 ns					
Insertion Loss	Pass	0,2 dB @ 1,0MHz	DH	3,6	< 2,2 dB	2,0 dB	DH	3,6	0,9 dB @ 100,0MHz	< 24,0 dB	23,1 dB
Return Loss	Pass	28,1 dB @ 12,7MHz	RH	1,2	> 17,0 dB	11,1 dB	DH	7,8	23,9 dB @ 95,3MHz	> 10,2 dB	13,7 dB
NEXT	Pass	38,6 dB @ 57,0MHz	RH	7,8-5,4	> 34,3 dB	4,3 dB	RH	7,8-5,4	38,1 dB @ 64,5MHz	> 33,4 dB	4,7 dB
ACR-N	Pass	64,5 dB @ 3,3MHz	DH	3,6-1,2	>= 51,0 dB	13,5 dB	RH	7,8-5,4	37,4 dB @ 64,0MHz	>= 14,6 dB	22,8 dB
ACR-F	Pass	30,9 dB @ 77,0MHz	DH	3,6-1,2	> 19,7 dB	11,2 dB	DH	3,6-1,2	29,0 dB @ 100,0MHz	> 17,4 dB	11,6 dB
Headroom	N/A	61,1 dB		N/A	N/A	N/A					
PS NEXT	Pass	36,9 dB @ 59,5MHz	DH	5,4	> 31,0 dB	5,9 dB	RH	5,4	36,3 dB @ 67,3MHz	> 30,0 dB	6,3 dB
PS ACR-N	Pass	66,4 dB @ 2,4MHz	RH	5,4	> 50,9 dB	15,5 dB	RH	3,6	35,6 dB @ 74,0MHz	> 8,9 dB	26,7 dB
PS ACR-F	Pass	51,8 dB @ 5,2MHz	DH	1,2	> 40,1 dB	11,7 dB	RH	1,2	26,4 dB @ 100,0MHz	> 14,4 dB	12,0 dB

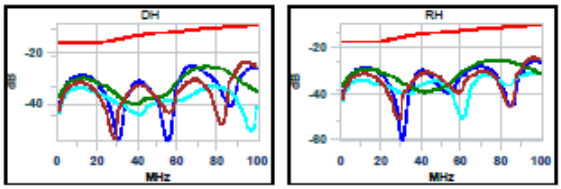
Wiremap



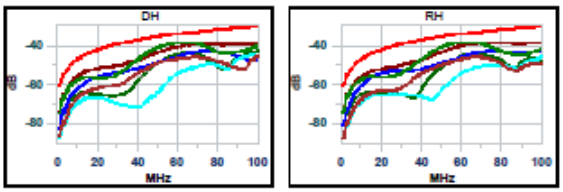
Insertion Loss



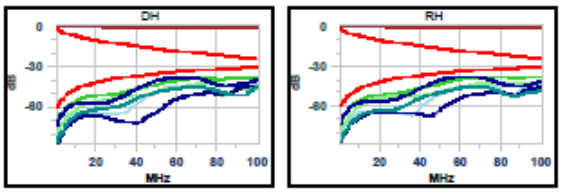
Return Loss



NEXT



ACR-N



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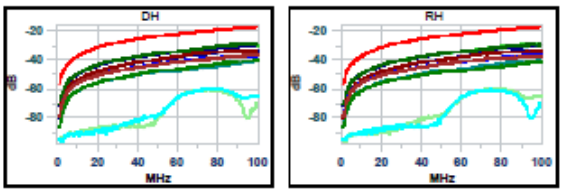
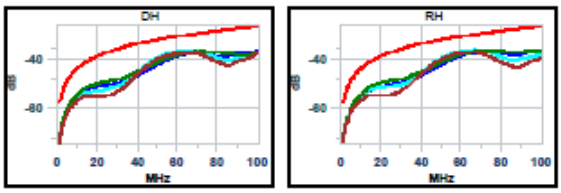
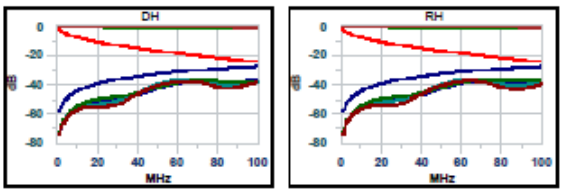


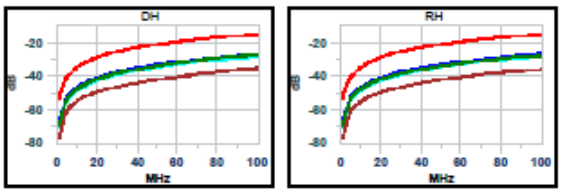
PS NEXT



PS ACR-N



PS ACR-F



SN3 after all the 4 steps of mating cycle – Test based on EN50173 D:

IDEAL INDUSTRIES, Inc. Certified - Test Report

Job Name: SUPERS_38999.job
Company: COMPANY NAME

Report Date: Wednesday, February 19, 2014 4:52 PM
Version: 1.3.0.5

Summary:

All Cables	Twisted Pair	Coax/Twinax	Fiber
Total: 1	Total: 1	Total: 0	Total: 0
Pass: 1	Pass: 1	Pass: 0	Pass: 0
Fail: 0	Fail: 0	Fail: 0	Fail: 0
Tot. Length: 4,3m	Tot. Length: 4,3m	Tot. Length: 0m	Tot. Length: 0m

Pass

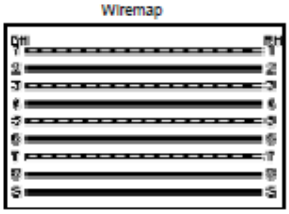
Test Name: SN3 1000M EN
Test Limit: EN D
Test Date: 2/13/2014
Test Time: 16:45:51
Adapter ID: 6004, Cat 6A Chan
User Notes:

NVP: 79
LANTEK II-1000 [948185/948240]
Firmware 2.012

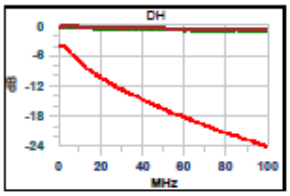
Standard: EN50173-1-Custom
Frequency Range: 1 - 100MHz
Operator: OPERATOR NAME
Contractor: CONTRACTOR NAME
Company: COMPANY NAME

	Result	Worst Case Value		Pairs	Limit	Margin		Pairs	Worst Overall Value	Limit	Margin
Wiremap	Pass	N/A		N/A	N/A	N/A					
Length	N/A	4,3 m.		1,2							
DC Resistance	Pass	3,5 ohms		3,6	25,0 ohms	21,5 ohms					
Capacitance	Pass	3,9 pF/m.		1,2	56,0 pF/m.	52,1 pF/m.					
Propagation Delay	Pass	20,1 ns		7,8	548,0 ns	527,9 ns					
Delay Skew	Pass	1,7 ns		7,8	50,0 ns	48,3 ns					
Insertion Loss	Pass	0,3 dB @ 1,0MHz	DH	3,6	< 4,0 dB	3,7 dB	DH	3,6	0,9 dB @ 100,0MHz	< 24,0 dB	23,1 dB
Return Loss	Pass	28,2 dB @ 12,1MHz	RH	1,2	> 17,0 dB	11,2 dB	DH	7,8	23,6 dB @ 95,0MHz	> 10,2 dB	13,4 dB
NEXT	Pass	38,1 dB @ 59,5MHz	RH	7,8-5,4	> 34,0 dB	4,1 dB	RH	7,8-5,4	37,9 dB @ 63,5MHz	> 33,5 dB	4,4 dB
ACR-N	Pass	65,3 dB @ 3,0MHz	DH	3,6-1,2	>= 51,7 dB	13,6 dB	RH	7,8-5,4	37,2 dB @ 62,3MHz	>= 15,0 dB	22,2 dB
ACR-F	Pass	30,5 dB @ 80,8MHz	DH	3,6-1,2	> 19,3 dB	11,2 dB	DH	3,6-1,2	29,0 dB @ 100,0MHz	> 17,4 dB	11,6 dB
PS NEXT	Pass	36,6 dB @ 61,0MHz	RH	5,4	> 30,8 dB	5,8 dB	RH	5,4	36,3 dB @ 68,3MHz	> 29,9 dB	6,4 dB
PS ACR-N	Pass	65,6 dB @ 2,5MHz	RH	3,6	> 49,9 dB	15,7 dB	RH	3,6	35,6 dB @ 72,0MHz	> 9,4 dB	26,2 dB
PS ACR-F	Pass	52,0 dB @ 5,1MHz	DH	1,2	> 40,3 dB	11,7 dB	RH	1,2	26,3 dB @ 100,0MHz	> 14,4 dB	11,9 dB

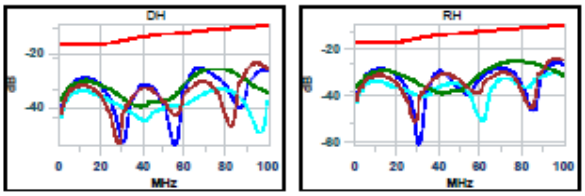
Wiremap



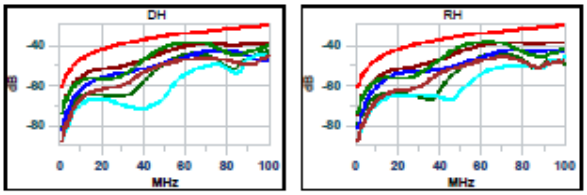
Insertion Loss



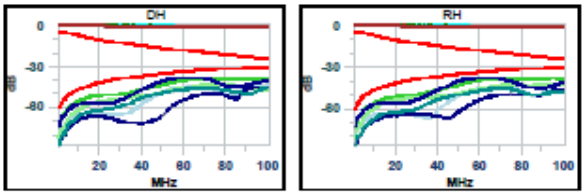
Return Loss



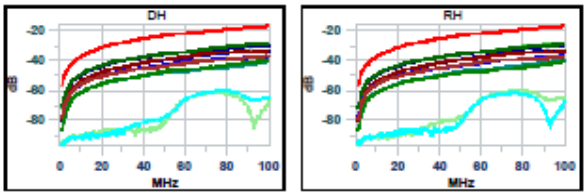
NEXT



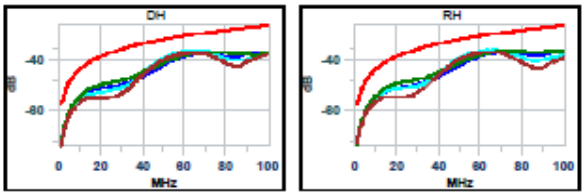
ACR-N



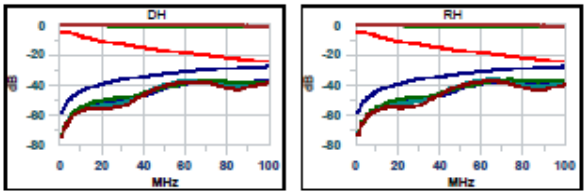
ACR-F



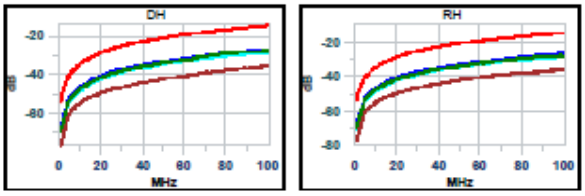
PS NEXT



PS ACR-N



PS ACR-F



Ethernet Test Compliance:

the connectors are in compliance with both TIA/EIA568 Cat.5 and EN 50173-1 D, and there are not significant differences about the Ethernet Test Parameter result, between the beginning of the qualification and after all the mating cycle tests.

4.8. Comments / remarks – commenti / osservazioni

The connectors pass with positive result the Mating Cycle test.