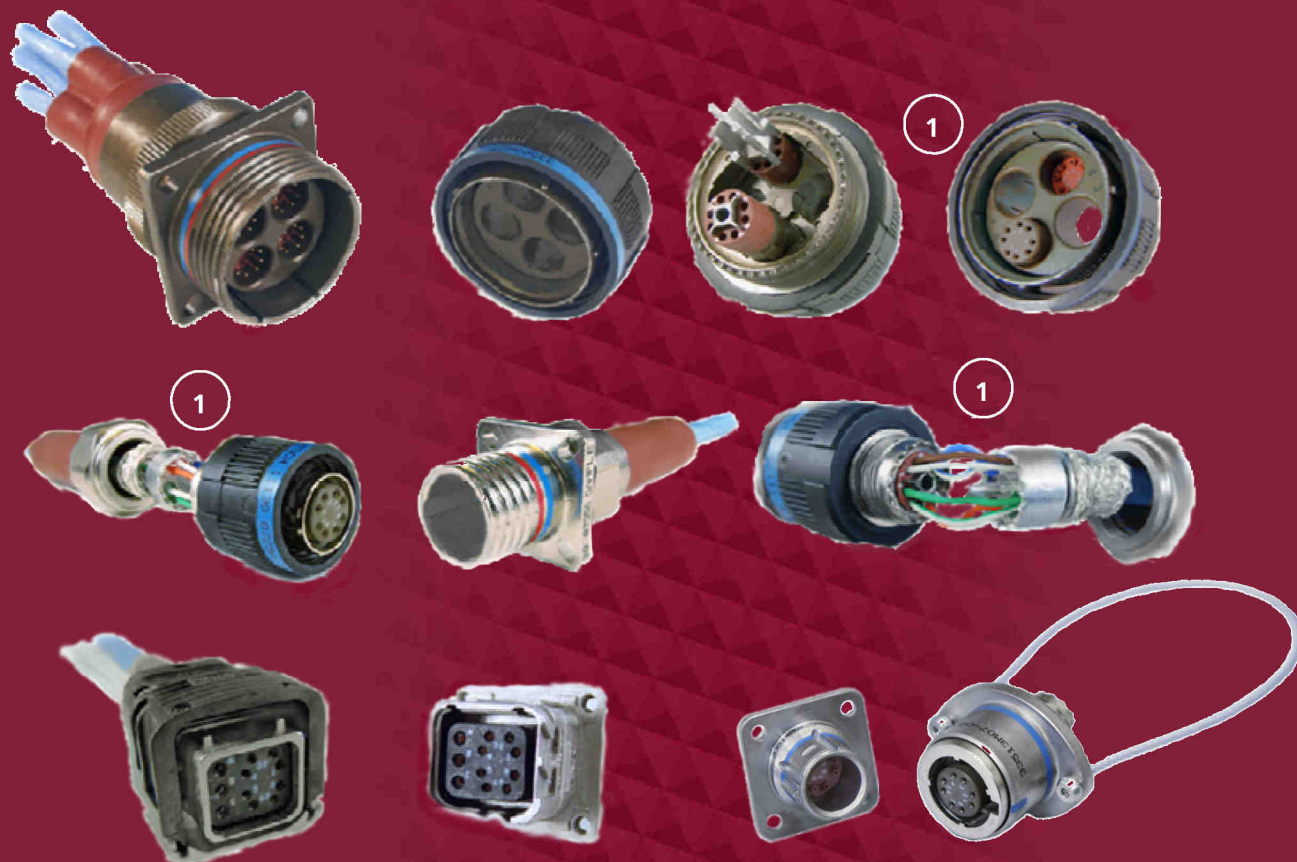


GIGABIT ETHERNET



Advantages

DEUTSCH Gigabit Ethernet (D-GbE) is the best cost effective method of connecting networks in a harsh environment without the short comings of other options. Enjoy the benefits of increased durability and reliability while **reducing labor time, valuable box size, panel cut-outs size and weight.**

Increase your dB margins over the Gigabit signal standards with the DEUTSCH unique twisted pair wire, shield and signal management system. With **eight M39029 #22 repairable contacts**, the short comings of Quadrax and RJ45 in harsh environments are avoided while maintaining 100 ohm match impedance.

Another DEUTSCH First

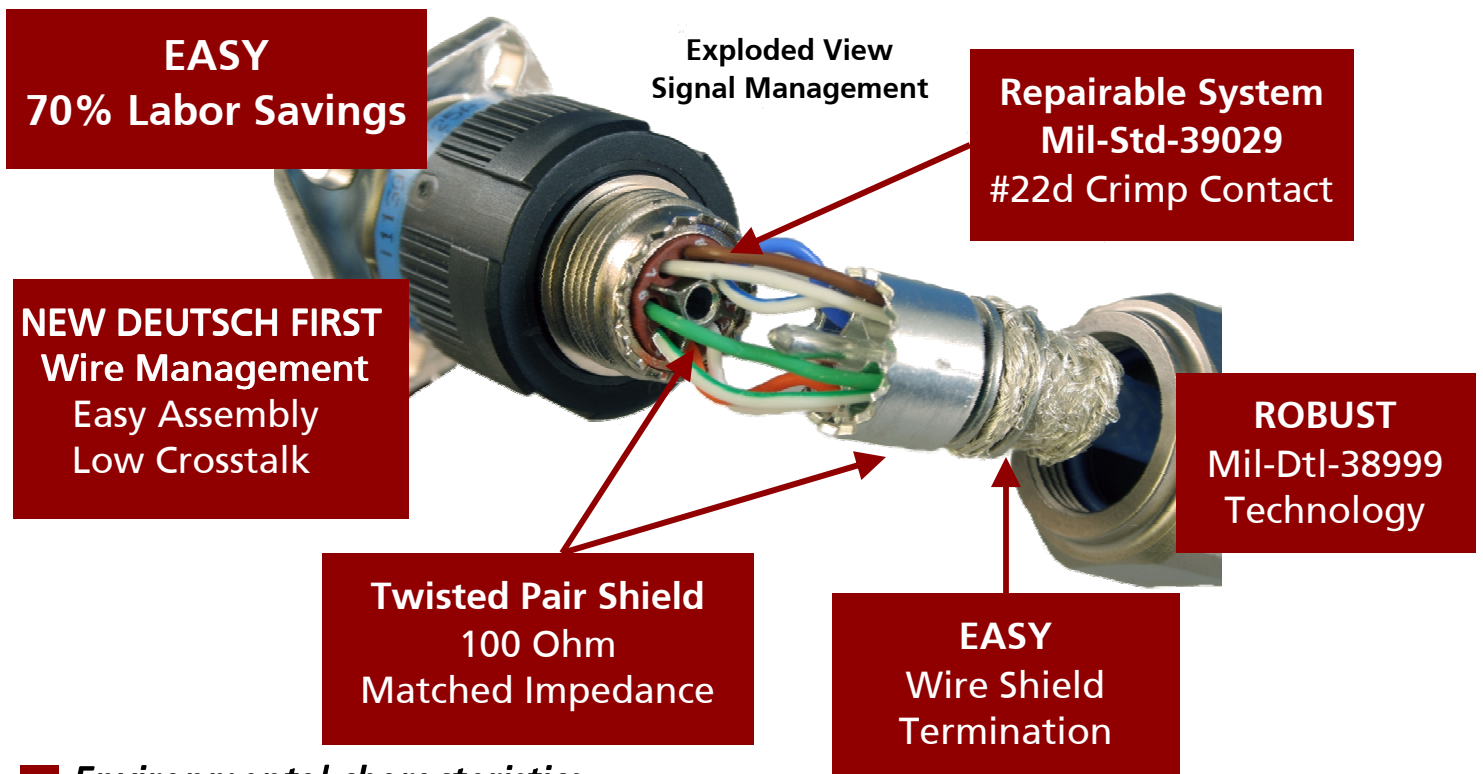
By simultaneously testing Mil-Dtl-38999 vibration, temperature cycling between -65°C and 200°C and bit-error-rate monitoring, DEUTSCH develops another first for harsh applications.

Savings

The D-GbE series reduces the costs by eliminating complicated terminations; by providing quick & easy assembly labor process and by making repairs / rework very easy without replacing expensive parts plus the smaller size will reduce weight - this is great for fuel saving programs.



1 NEW DEUTSCH FIRST
Wire Management
Easy Assembly
Low Crosstalk



Environmental characteristics

Design and Testing Specifications

MIL-DTL-38999 Series III	ARINC 809	Push-Pull Lanyard M81703 / D38999
• GbE Single channel - shell size #11	• GbE plus 3 Power	• GbE Single channel - shell size #7
• GbE Quad channel - shell size #25		

Ordering Number

Series - ① D38999 ② ARINC 809 ③ D817

D-GbE AR M 11-08 P N - ****

Modifications (consult factory)

Shell Keying N, A, B, C, D, E

Contact Type P=Pin; S=Socket; H=Pin 1,500; J=Socket 1,500

Insert Arrangement

11-08=Single Channel (Shell #11 w/ Contacts 8 - #22) ①

25-32=Quad Channel (Shell #25 w/ Contacts 32 - #22) ①

00-11=ARINC 809 (ARINC Module w/ Contacts 8 - #22, 3 - #20) ②

Class & Finish

M=Nickel Composite ① ②

J=O.D. CAD Composite ① ②

F=Nickel Aluminum ① ② ③

W=O.D. CAD Aluminum ① ② ③

S=Stainless Steel ① ② ③

Shell Type

20=Square Flange Receptacle ①

24=Jam Nut Receptacle ①

26=Plug ①

21=In Line Receptacle ①

50=Square Flange Receptacle ③

54=Jam Nut Receptacle ③

57=Lanyard Plug Push-Pull (consult factory) ③

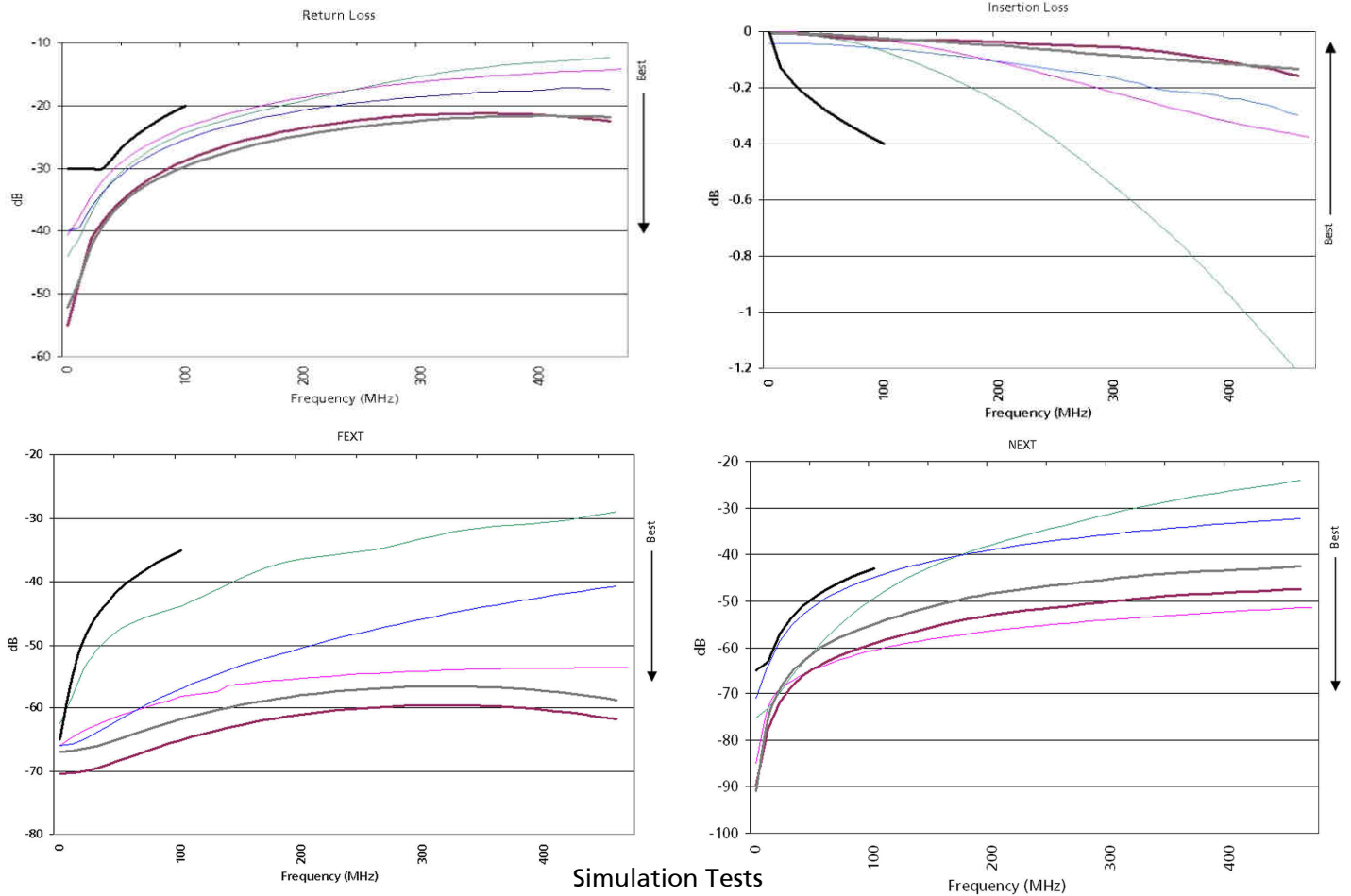
60=Cables (consult factory)

AP=ARINC 809 Plug ②

AR=ARINC 809 Receptacle ②

Type Gigabit Ethernet (1 and 10 Gb/s)

Signal Performance Compared



— D-GbE — Arinc 809 — RJ-45 — Quadrax — 38999(11-35) — Spec Limit

Compare	Assembly Time w/ Wire Manage- ment < 15 Minutes	Return Loss > 20 dB Loss @ 300 MHz	Insertion Loss < .05 dB Loss @ 300 MHz	FEXT > 55 dB @ 300 MHz	NEXT > 45 dB @ 300 MHz	Plug Size < 1 inch
D38999 RJ45	Fail	Fail	Fail	Fail	Fail	Fail
D38999 Quadrax	Fail	Fail	Fail	Pass	Pass	Fail
D38999 11-35	Fail	Fail	Fail	Fail	Fail	Pass
D38999 D-GbE	Pass	Pass	Pass	Pass	Pass	Pass
ARINC 809 GbE	Pass	Pass	Pass	Pass	Pass	Pass
Compare	Mated Together Connections > 5 and < 97 per 100M	Wire Management	Signal Integrity Temp Cycle Vibration Bit-Error-Rate	Repairable M39029 Contacts	Terminate 4 Twisted Wire Pairs	Temperature Range -65°C - 200°C
D38999 RJ45	Fail	Fail	Fail	Fail	Pass	Fail
D38999 Quadrax	Fail	Fail	Fail	Fail	Fail	Pass
D38999 11-35	Fail	Fail	Unknown	Fail	Pass	Pass
D38999 D-GbE	Pass	Pass	Pass	Pass	Pass	Pass
ARINC 809 GbE	Pass	Pass	Pass	Pass	Pass	Pass

System Performance Test - 90.7 M with 94 Connections

Recommended by AIRBUS & BOEING



Cable ID: DEUTSCH 93 + 16FT

Test Summary: PASS

Date / Time: 04/24/2007 02:10:01pm
 Headroom: 7.5 dB (RL 36)
 Test Limit: TIA Cat 5e Channel
 Cable Type: UTP 100 Ohm Cat 5e
 Fault Anomaly Threshold: 15%

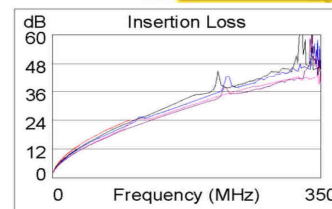
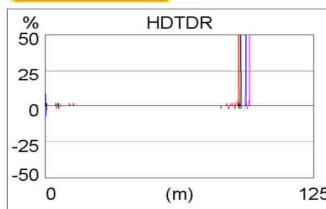
Operator: M.MONTIEL
 Software Version: 1.923
 Limits Version: 5.17c
 NVP: 70.0%
 Shield Test: N/A

Model: DSP-4300
 Main S/N: 9181011
 Remote S/N: 9181011
 Main Adapter: LIA 012
 Remote Adapter: LIA 012

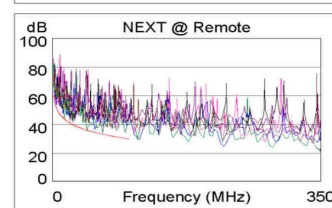
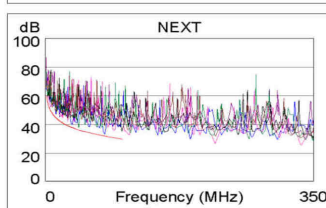
Wire Map	1 2 3 4 5 6 7 8 S
PASS	
	1 2 3 4 5 6 7 8



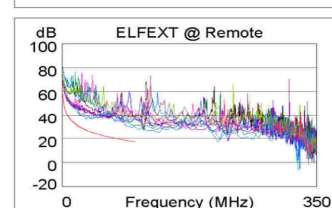
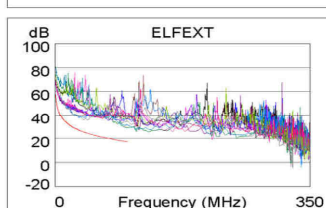
Length (m), Limit 100.0	[Pair 12]	90.7
Prop. Delay (ns), Limit 555	[Pair 45]	456
Delay Skew (ns), Limit 50	[Pair 45]	24
Resistance (ohms)		N/A
Insertion Loss Margin (dB)	[Pair 45]	1.0
Frequency (MHz)	[Pair 45]	100.0
Limit (dB)	[Pair 45]	24.0



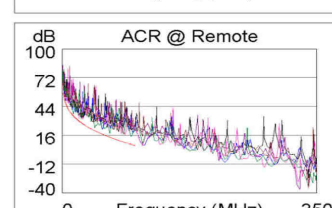
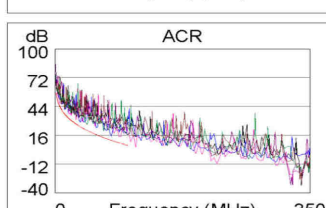
	Worst Case Margin		Worst Case Value	
	MAIN	SR	MAIN	SR
PASS				
Worst Pair	12-36	36-78	12-36	36-78
NEXT (dB)	0.5*	0.2*	0.9	0.7
Freq. (MHz)	34.6	15.5	77.0	66.0
Limit (dB)	38.0	43.9	32.1	33.2
Worst Pair	12	12	12	36
PSNEXT (dB)	2.5	1.5	3.0	2.5
Freq. (MHz)	22.7	23.0	77.2	66.2
Limit (dB)	38.1	38.0	29.1	30.2



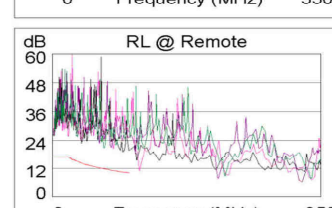
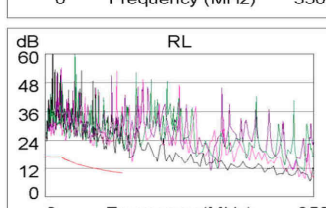
	MAIN	SR	MAIN	SR
PASS				
Worst Pair	12-36	12-36	36-45	45-36
ELFEXT (dB)	9.1	9.1	11.0	11.0
Freq. (MHz)	1.0	1.0	98.4	95.4
Limit (dB)	57.4	57.4	17.5	17.8
Worst Pair	12	12	45	45
PSELFEXT (dB)	9.2	9.1	12.9	11.9
Freq. (MHz)	1.0	1.0	98.4	95.4
Limit (dB)	54.4	54.4	14.5	14.8



	MAIN	SR	MAIN	SR
PASS				
Worst Pair	12-36	36-78	12-45	36-78
ACR (dB)	2.8	1.7	5.8	6.8
Freq. (MHz)	34.6	15.4	89.8	95.2
Limit (dB)	24.4	35.0	8.2	7.1
Worst Pair	12	12	12	78
PSACR (dB)	3.7	2.5	9.9	8.9
Freq. (MHz)	22.7	3.5	100.0	95.2
Limit (dB)	27.2	47.4	3.0	4.1



	MAIN	SR	MAIN	SR
PASS				
Worst Pair	36	36	36	36
RL (dB)	7.5	8.4	8.2	8.7
Freq. (MHz)	2.6	37.8	91.4	92.0
Limit (dB)	17.0	14.2	10.4	10.4



Compliant Network Standards:		
10BASE-T	100BASE-TX	100BASE-T4
100BASE-T	ATM-25	ATM-51
ATM-155	100VG-AnyLan	TR-4
TR-16 Active	TR-16 Passive	

* Measurement is within the accuracy limits of the instrument.

LinkWare Version 3.12



DEUTSCH

Defense Aerospace Operations