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DATWYLER'S NEW HIGH-PERFORMANCE DATA CENTRE SOLUTION SETS STANDARDS

Ever higher transmission rates not only call for top quality optical fibres but also place very high demands on connecting hardware. Both parameters are crucial to high transmission channel performance. The new Fibre Optic Data Centre Solution developed by Datwyler exceeds all the standards set for modern data centre cabling solutions.

Datwyler's newly developed Data Centre Solution is a pre-assembled plug-and-go fibre optic solution for ICT cabling in the data centre environment. It gives planners, installers and operators an extremely high level of flexibility and future viability when installing or expanding cabling infrastructures in data centres. The perfectly matched high quality components of this high-performance solution can be combined as desired, allowing the implementation of an open infrastructure design decoupled from the user's current hardware.

Subsequent migration to higher-speed applications, for example 40/100G, is also simple to implement with this solution.

Module-to-module configuration

Two FO plug-in modules (cassettes) are connected by a thin mini-breakout cable (e.g. MTP® Type A) – suitable for all popular duplex applications such as 10G Ethernet and 16G Fiber Channel.
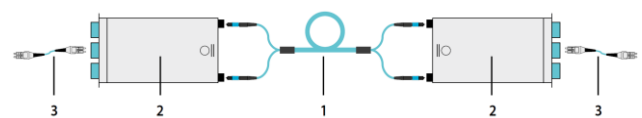

Part	Level	Description	Remarks
1	High-performance	Mini-breakout cable MTP Type A	12, 24, 48, 72, 96, 144 fibres
2	High-performance	Plug-in module 3U/7TE 24F 2x MTP on 12x LCD	24 fibres
3	High-performance	LCD Uniboot patch cable	Polarity: A to A or A to B

Cross-Connect

The use of a central cross-connect patch system architecture meets three main requirements of data centre cabling infrastructure, namely low total cost (TCO), a high level of reliability, and a system which is easy to use as a whole.

In a cross-connect system all the existing network cabinets are connected to the central distribution panel by permanent cable connections. This type of cabling architecture places high demands on the components used. Since a relatively large num-

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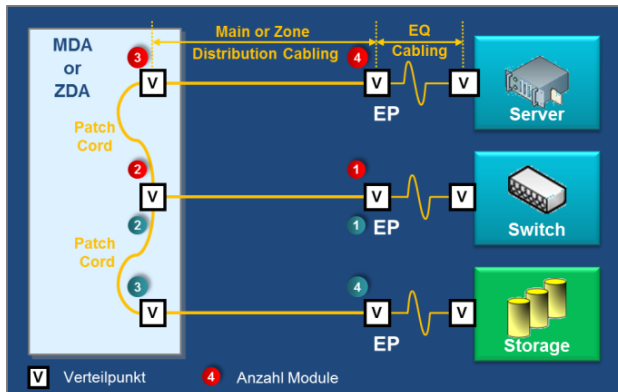
ber of connectors are involved in cross-connect (see picture above), the limits of the tight attenuation budgets can be reached sooner than expected. This fact should be weighted accordingly in a system evaluation.

FO channel end-to-end performance testing

Only the best system components provide enough design flexibility and sufficient reserves for Insertion Loss (IL). Ample reserves provide security for planners and users.

What end-to-end IL values can Datwyler's High-Performance Data Centre Solution offer? The calculation made prior to performance testing is shown in the table below:

Fiber	Assembly class	FO-Channel Specification (24 Fibres)	IL (850 nm) mean values					
			LCD	MTP	Fiber	MTP	LCD	Total
OM3	Grade B	Mini breakout cabel 24F 2xMTP®/2xMTP® l = 15 m		0.2	0.05	0.2		0.45
OM3	Grade B	2 pieces FO cartridge 24F 2xMTP®/12xLCD	0.2				0.2	0.40
		TOTAL calculated value [dB]						0.85
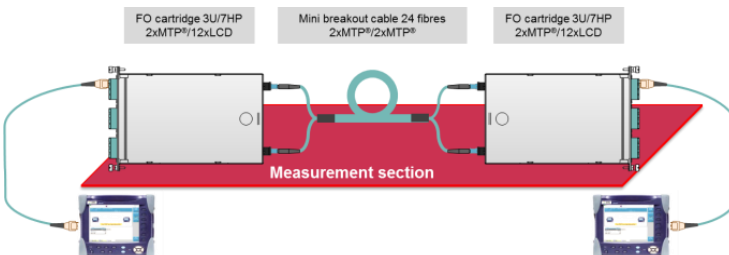
FO channel end-to-end acceptance testing

Following successful installation in a data centre (in 2012) around 20,000 fibre connections were tested. The 24-fibre FO channel (module-to-module) comprised two FO plug-in modules, a mini-breakout cable and two patch cables.

By Datwyler's calculation the resultant Insertion Loss (IL) should have been 0.85 dB at a wavelength of 850 nm. The actual result was as follows:

The highest measured Insertion Loss of this FO channel (24 fibres) over the four connectors was under 0.6 dB. This outstanding value is considerably lower than the 0.85 dB calculated. A very high level of spare capacity has been achieved on the specified maximum figure of 1.23 dB.

It gets even better, as can be seen from the following test report from the same project:

0.43 dB, which may be a record, is only just 35% of the requisite maximum figure.

Extremely high reserves included

The current example shows that Datwyler's Data Centre Solution provides a very high level of spare capacity, and that with these impressive performance figures it is setting standards for cabling systems in data centres.

You can find further information and data sheets at www.datwyler.com / Cabling Solutions