MT Connect - SuperSet
Pre-Terminated MTP® Fibre Cabling System

FIBREPLUS

Brand-Rex

A trusted voice in a world of confusion

Brand-Rex has developed the enviable position of being a premier provider of 'best in class' communication infrastructure solutions. This position has been gained through a core philosophy of delivering maximum performance through design excellence. With a reputation as one of the most respected expert voices within the technical community, Brand-Rex has built a business and product ethos around trust. A high level of knowledge, experience and integrity, developed during three decades of networking deployment, allows Brand-Rex to consistently deliver first class solutions and a first class service to customers.

MT Connect is an ultra high performance, pre-terminated, modular, Optical Fibre cabling system based on MT ferrule connector technology.

This product set is ideally suited for installation in the data centre where multiple, point to point, fibre connections between distribution racks and equipment racks can be quickly and efficiently installed, maintained and changed, and where an upgrade path to multi-lane higher speed transmissions is required. It is also suitable for use in short length backbone connections.

This SuperSet of products provides future proofing for transmission of 1 ,2, 4, 8 and 16 GFC and 1, 10, 40 and 100GbE technologies.

The MT Connect SuperSet system has unique advantages over conventional optical fibre cabling:

- A pre-terminated, high quality, high performance product set
- Ultra high performance connectors to achieve a low loss optical budget
- Plug and play modules allow fast installation of multiple fibre links
- High fibre density (up to 96 fibres per 1U panel)
- Solution set includes option of mixing Cu and FO outlets in the same panel
- Product quality assured by factory termination of connectors
- Multi-mode OM3, enhanced OM4 and single-mode OS1/OS2 options available

MT Connect SuperSet is available in OM3, enhanced OM4 and OS1/OS2 performance grade cabling and comprises a set of parts which enable any configuration of link to be simply and quickly built.

The product set includes:

- MTP® to MTP® Cable Assemblies
- MTP® to MTP® Equipment Cords and Cable Extensions
- MTP® Breakout Assemblies – available with LC connectors
- 1U High Density panels – to acccommodate up to 4 LGX cassettes, blanking adaptor plates or Snap-in-Jack faceplates
- 3U High Density Panels - accommodates up to 12 cassettes or faceplates
- MTP® LGX Cassettes – available with 24 LC ports
- MTP® adaptor plates – to connect MTP® equipment cords or breakout assemblies
- 5 Port Snap-in-jack faceplates - to connect copper cabling to offer a hybrid configuration
- Blanking plates – for panel expansion spaces
- 24 Fibre LC Adapter Faceplates

MT FERRULE TECHNOLOGY

The MT ferrule is the building block of the system, it accommodates up to 12 fibres in a single ferrule. The array is made of a precision moulded thermoplastic and uses metal guide pins, precise housing dimensions and keying to ensure fibre alignment and maintenance of polarity when mating. The housing uses a push-pull latching mechanism, with audible click, to ensure proper connection.

Specification

The MT Connect is made up of standards compliant component products which are designed and manufactured to conform to the requirements of the structured wiring cabling standards ISO/IEC 11801:2002 & amendments 1 & 2, EN 50173-1, TIA 568C series and the data centre cabling standards IEC 24764, EN 50173-5 and TIA 942.

Performance

The ultra high quality of the connector system allows multi-connector links to be configured within whilst still meeting the optical budgets of high speed applications.

MT Connect SuperSet supports all of the applications recognised in the standards including Ethernet and Fibre Channel technologies up to 10GbE speeds.

The micro-distribution cables used in the cable array assemblies are smaller and lighter than conventional optical cable products and offer the added benefits of reducing the space taken in pathways, lightening loads in trays, and minimising the possibility of adversely affecting cooling under-floor air flows by creating air dams in cable pathways.

Fibre Type & Cable Performance Grade (& cable jacket colour)	wavelength (nm)	Maximum Attenuation (dB/km)	Typical Cable Attenuation (dB/km)
OM3 performance (Aqua) 50/125 Multimode	850	3.5	2.6
	1300	1.5	0.6
OM4 performance (Heather Violet) 50/125 Multimode (1)	850	3.5	2.6
	1300	1.5	0.6
Singlemode performance (Yellow)	1300	0.4	0.3
	1383	0.4	0.3
	1550	0.4	0.2

(1) enhanced performance OM4 cables with a minimum bandwidth of 4700 MHZ.km @ 850nm

Operating and storage temperature range (ºC)	-20 to +60

Connector Performance

Connector Type		Insertion Loss (dB)		Return Loss (dB)	
		Typical	Maximum	Typical	Minimum
Multimode	MTP® Low Loss	0.10	0.35	-	20
	Low Loss LC	0.10	0.20	-	20
Singlemode (1)	MTP® Low Loss	0.10	0.35	-	60
	Low loss LC	0.10	0.20	-	65

(1) angled polish face

POLARITY

The MT Connect Superset is simple to install, operate and maintain.

This solution employs polarity system `C' for both the multi-mode and single-mode fibre systems.

The polarity scheme chosen allows the use of standard, duplex, cross-over patchcords at both ends of the system for connection to end equipment that transmits duplex transmission technologies (up to 10GbE and 16GFC). It also allows the use of A polarity unpinned MTP® to MTP® cords when migrating to multi-lane tranmssion technologies for 40G and 100GbE.

Method `C' comprises type `A' transitions (breakout assemblies or Module Cassettes), `Key up' to `Key down' adaptors and type `C' cable assemblies. For the end user this is a simple, user friendly, polarity method.

The multi-mode system is simple with all MTP® connector end faces flat polished. Angled polished ends are achieved with singlemode connectors

The fibre coding scheme within the array cables, and in the breakout assemblies, is also standard:

Fibre no.	1	2	3	4	5	6	7	8	9	10	11	12
colour	Blue	Orange	Green	Brown	Grey	White	Red	Black	Yellow	Violet	Pink	Aqua

TIA Method C:

Cord Type	Transition Method	Adaptor Method	Array Cable Type	Adaptor Method	Transition Method	Cord Type
A to B	A	A 'Key up' to 'key down'	C 'flipped pairs'	A 'Key up' to 'key down'	A	A to B

INSTALLATION

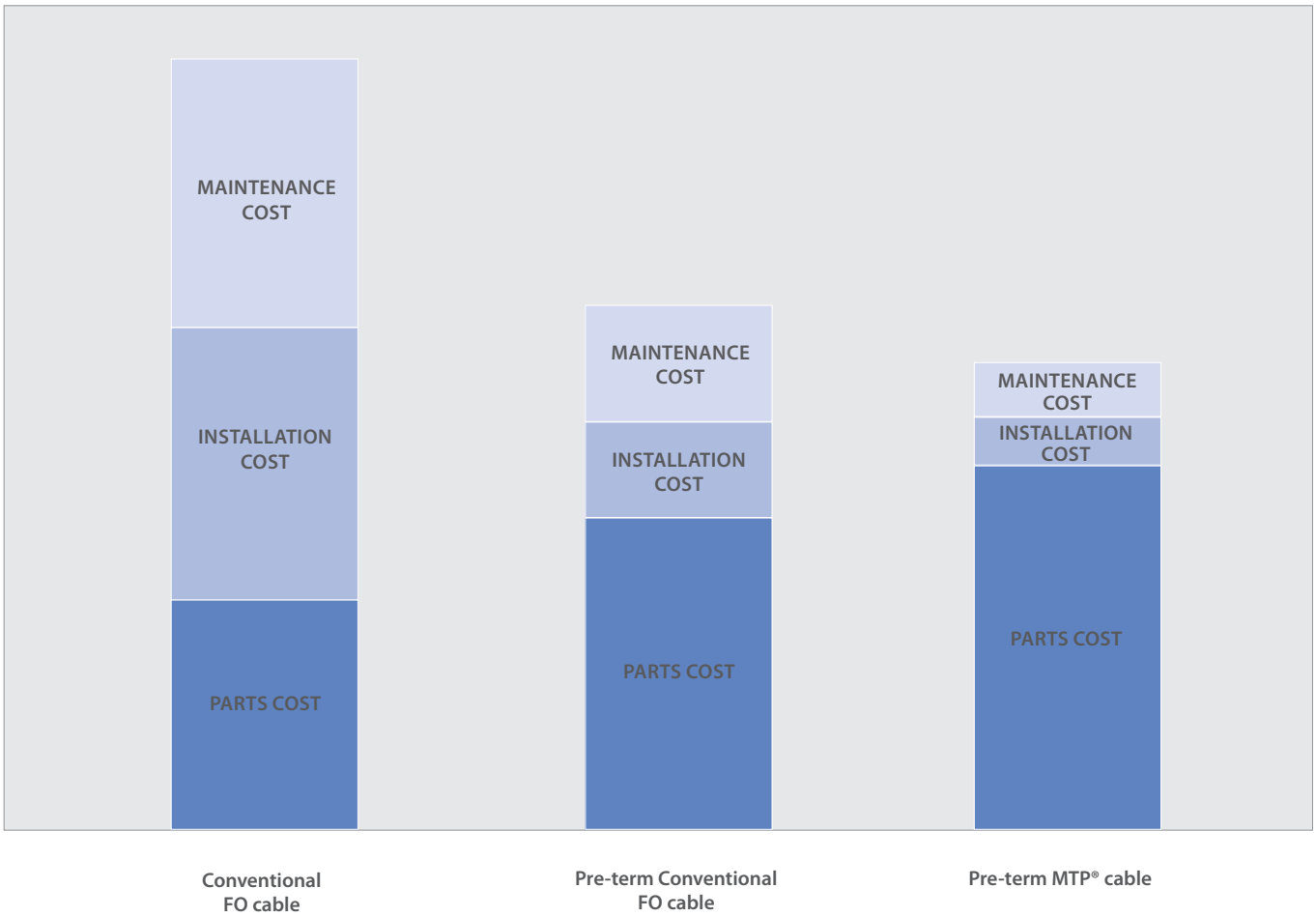
Installation of the system is simple and quick:

1. Lay the backbone cables in place
2. Install the panels in the racks
3. Plug the cables into the LGX module cassettes
4. Plug the LGX cassettes into the panels

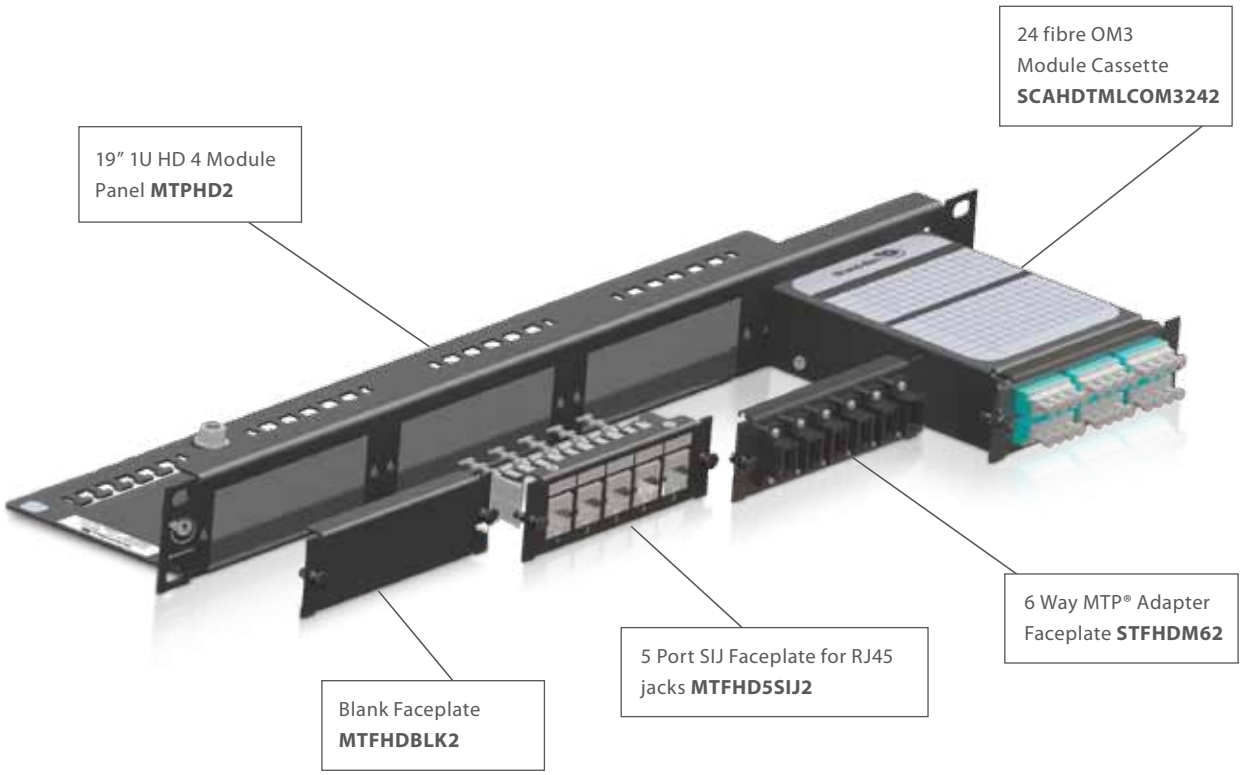
The time taken to install the system is a fraction of the time taken to install conventional optical fibre systems. Plugging in 12 fibres in a pre-terminated assembly is much more time efficient than splicing 12 pigtails to each end of an installed cable and dressing the spliced fibres into the panel.

Maintenance and additions to the system are also much simpler, the modular build of the units and easy plug and play characteristics mean that upgrade and expansion can be achieved quickly and easily. can be quickly replaced and the system can be easily expanded. The total cost of ownership of a pre-terminated MTP® connector based cable system is very competetive with other types.

TOTAL COST OF OWNERSHIP



MT CONNECT SUPERSET PANELS



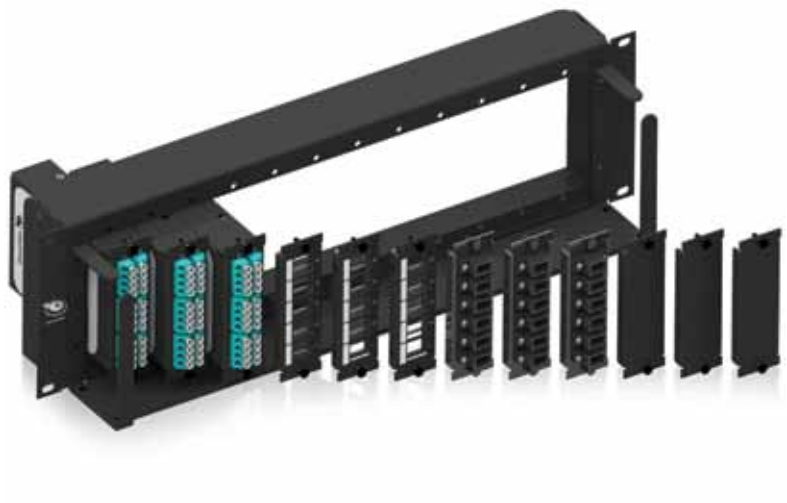
These modular panel assemblies are used to terminate backbone cables at the distributor or the equipment outlet ends and also to interface to patch cords or equipment cords.

The 1U panel fits into standard 19" racks and accommodates up to 4 plug in units. LGX cassettes, MTP® adaptor plates, LC 24 fibre faceplates or blanking plates, or 5 port Snap-in-Jack faceplates are available as units.

The MTP® system is simple and flexible and can accommodate up to 96 LC connections per U using LGX cassettes. Or, up to 288 connections per U can be achieved using the MTP® adaptor plates.

The LGX cassettes are available in high performance OM3, enhanced OM4 and OS1/OS2 types.

MT CONNECT SUPERSET – 3U MTP® PANEL ASSEMBLY



The 3U panel fits into standard 19" racks and accommodates up to 288 fibres using up to 12 cassettes to offer a high density solution.

The panel can also accommodate 5 port snap-in-jack faceplates to offer a versatile hybrid configuration. Cable management is attached on to the front of the panel to act as a support for the cabling with the fixed labelling tray, located on the front of the panel acts as a labelling area.

The panel is ideal for installation in the data centre where multiple point to point fibre connections between distribution racks and racks can be installed, maintained and changed quickly and efficiently.

Product Part Numbers

Unit Part Numbers

Description	Colour	Quantity per pack	Part No.
19" 1U 4 Module MTP® Panel	Black	1	MTPHD2
19" 3U 12 Module MTP® Panel	Black	1	MTPHD3U122
5 Port Snap-in-Jack Faceplate for RJ45 jacks*	Black	10	MTFHD5SIJ2
6 Way MTP® Adapter Faceplate	Black	5	STFHDM62
Blank Faceplate	Black	5	MTFHDBLK2
24 Fibre LC Adapter Faceplate - SingleMode	Black	5	MTFHDLCSM2
24 Fibre LC Adapter Faceplate - MultiMode	Black	5	MTFHDLCMM2

** The HD 5 Port SIJ Faceplate is not equipped with jacks, to be ordered separately.*

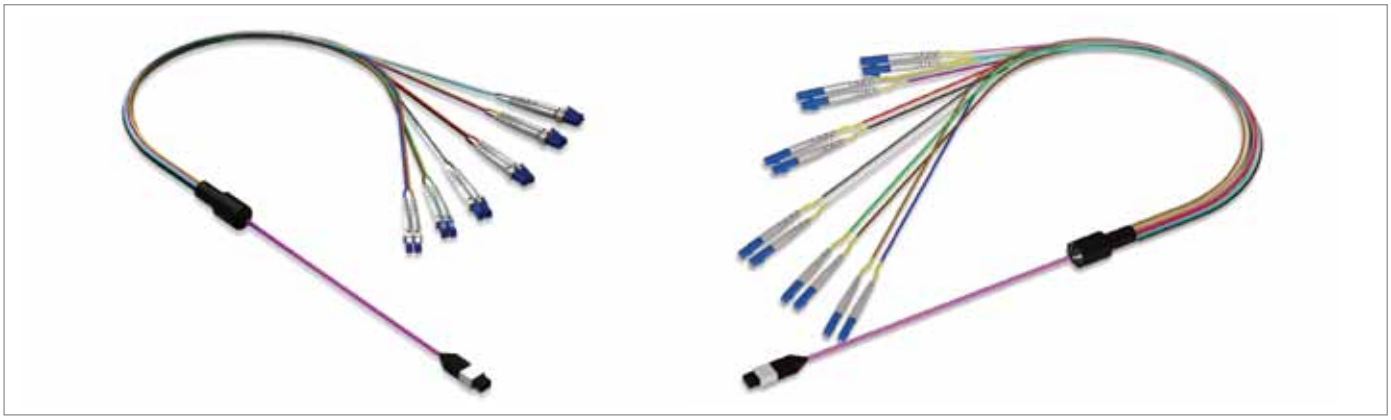
5 Port Snap-in-Jack Faceplate Compatibility Chart

Description	Part No.
Augmented Category 6 Shielded Tool free jack	AC6JAKS000
Category 6 Shielded Tool free jack	C6CJAKS000
Category 6 Unshielded Tool free jack	C6CJAKU002

Cassette Part Numbers

Description	Colour	Quantity per pack	Part No.
24 fibre OM3 Module Cassette	Black	1	SCAHDTMLCOM3242
24 fibre OM4 Module Cassette	Black	1	SCAHDTMLCOM4242
24 fibre single mode Module Cassette	Black	1	SCAHDTMLC008242

MT CONNECT BREAKOUT ASSEMBLIES



MTP® Hybrid breakout units are made up of 12 fibres LSZH jacketed cables terminated at one end in pinned MTP® Low Loss connectors, through a bifurcation unit, to LC duplex low loss connectors (high precision SM tolerance versions) terminated to 2mm OD simplex cables. These are used to connect equipment in racks to MTP® terminated backbone cables.

The assemblies are available in OM3, enhanced OM4 and OS1/OS2 performance grade.

Ordering Information:
The assemblies are available in standard lengths of 2 & 3m as standard. Custom engineered lengths are also available on request. The assemblies are delivered as coils.

Part number example
S TMLCOM312020 = Breakout assembly, low loss MTP® with pins to 12 LC low loss connectors, OM3 performance, 12 way, 2.0m overall length

Product Part Numbers

MTP® Low Loss connector with pins(2)	Duplex Low Loss connector (2)	Cable performance	Number of fibres	Overall length (m)(1)
S TM	LC	'OM3', or 'OM4', or or 008	12	ZZZ

(1) breakout unit legs are a standard 1m long, (2) SMF terminations are angled polished

Breakout Assemblies with staggered length legs
Breakout Assemblies are also available with staggered leg lengths for ease of installation where the legs of the breakout assembly are tailored to fit; the part number then becomes a unique reference for the type of breakout required.
Please see examples below for ordering:

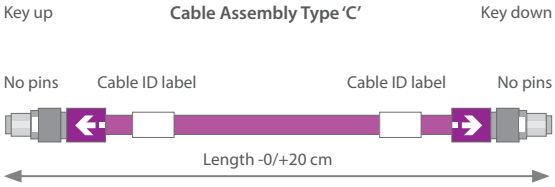
S TM LC OM3 12 025 T01

S= Superset	TM = MTP® Low Loss with pins	LC = LC Duplex with connector clip	OM3 = MM	12 = No. of fibres	Overall length	Unique number for customer specification breakout cable
			OM4 = MM		025 = 2.5m	T01 = Type 1
			008 = SM		033 = 3.3m etc	T01 = Type 2

The table below shows 2 examples of specified breakout staggered assemblies:

Harness	FO type	Trunk fibres 1&2 (mm)	Trunk fibres 3&4 (mm)	Trunk fibres 5&6 (mm)	Trunk fibres 7&8 (mm)	Trunk fibres 9&10 (mm)	Trunk fibres 11&12 (mm)	Overall length (m)	Brand-Rex part no
Type 1	OM4	1000	1000	988	976	940	928	2.5	S TM LC OM4 12 025 T01
Type 2	OM4	1000	1000	960	948	936	924	2.5	S TM LC OM4 12 025 T02

MT CONNECT CABLE ASSEMBLIES



Cable assemblies are made up of 12 fibre LSZH jacketed cables terminated at both ends in MTP® Low Loss connectors (without pins). They are used as backbone or horizontal cable interconnections between distribution racks.

The assemblies are available in a OM3, enhanced OM4, and OS1/OS2 to suit the needs of the network.

Ordering Information:
The assemblies are available in standard lengths of 1, 3, 5, 10, 20, 30, 50 and 100m. Custom engineered lengths are also available on request. The assemblies are delivered as coils in lengths up to 50m long and on reels in lengths over 50m.

Single-mode cables are yellow, multi-mode cables are Aqua (OM3) and Heather Violet (OM4).

Part Number Breakdown:

MTP® connector	Cable Type	Cable assembly polarity scheme	MTP® Low Loss connector	Cable performance	No of fibres(1)	Length (m)
S T, or S TM (with pins)	Compact = C	C	T, or TM (with pins)	OM3, or OM4, or 008*	12	ZZZ Z

** SMF terminations are angled polished*

Part number example

STCCTOM4120050 = MTP® Low Loss to MTP® Low Loss cable assembly, compact fibre, method 'C' polarity, OM4 performance, 12 fibre, 5.0m long

STCCT008120030 = MTP® Low Loss to MTP® Low Loss cable assembly, compact fibre, method 'C' polarity, Singlemode fibre, 12 fibre, 3.0m long

Note 1: There are 4 figures at the end of this part number for length. The 4th figure is a decimal.

Note 2: Compact cables are 3mm OD.

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