

Blackpool and The Fylde College LITS Data Cabling Installation Specification

This document is designed to assist in the design and specification wherever data cabling and points need to be installed, whether this is in a new or an existing building. There may be some instances where changes to this specification are allowed or recommended by LITS, therefore we recommend that contact is made to discuss requirements early in the planning stages. Contacts in LITS are as below.

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1. Contractor Provided

Power

A minimum of 2 x double 13amp sockets should be provided adjacent to each cabinet.

Cabinet

In a large installation if a new cabinet is required, switching/patching floor standing cabinets on wheels should be 800mm(w)x600mm(d)x42U(h) in dimension and should allow for cable entry at the base. The cabinet should have solid side doors and mesh front and rear doors. Where the number of lines required exceeds 384, then an additional cabinet will be required. Additional cabinets will be required for each further multiples of 384 data lines. Where there is more than one cabinet, the cabinets should be bayed together and the side doors between cabinets should be removed, the end side doors of the row should remain. The rear vertical rails should not be removed from the cabinets. All cabinets must be bonded to earth in line with current electrical regulations.

In a smaller installation, a wall mounted cabinet may be more suitable. These should be 800mm(w)x600mm(d) but the height will depend on the installation.

Fibre

The requirement for fibre provision varies from project to project and should always be clarified with LITS at an early stage. However as a rule of thumb when costing, the minimum requirements are as follows.

16 cores 50/125 OM4 multimode

or

16 cores 8-9/125 OS1 single mode

Fibre should be terminated and presented in 1U rack mount enclosures at each end, single mode should be terminated using SC connectors, multimode should be terminated using ST connectors.

Fibre joints should be fusion spliced.

Appropriate fibre must be selected for each installation, taking into account the type of installation, HellermanTyton, BrandRex or similar quality brands should be used throughout the installation.

Once terminated, fibres should be tested to appropriate current standards.

Copper

To minimise the risk to staff and the building itself in the event of a fire Low Smoke Zero Halogen (LSZH) cable should be used for new installations.

Unshielded (UTP) cable will suit most needs unless shielded cable is required in a specific area.

Installers must fully comply with the following standards:

- TIA/EIA-568-B.2-1 – Transmission Performance specification for Telecommunications wire and cable
- ISO/IEC 11801 – Generic Cabling for Commercial Premises
- CENELEC EN 50173 – Generic Cabling Systems

Cat6 cabling should be used throughout all new installations at the College, except internal server cabinet wiring which will be CAT6a.

Cat6 cabling should be terminated in an RJ45 socket module within rooms and preferably presented in HellermannTyton ECO-6 1U rack mount enclosures at the cabinet end.

Once terminated, cables should be tested to appropriate current standards and documentation presented to LITS.

It is intended that in-line power will be delivered from core networking hardware across the copper cabling plant to such devices as IP telephones, IP CCTV Cameras or wireless access points.

Room Outlet Presentation

Cable outlets should be presented in a plastic back-box integrated into existing dado trunking where appropriate or stand-alone if this is not supplied within the room. Containment from the back-box is required to the high level cable tray. Each cable will be presented as a shuttered Cat6 RJ45 outlet module; LITS preference is for use of HellermannTyton modules. The appointed contractor will be responsible for the supply and installation of modules, face-plates, back boxes and all containment. Samples must be produced and signed off by LITS prior to commencement of the installation.

Outlet Distribution

Cable outlets will be distributed throughout all buildings via a high level cable tray and suitable containment to the back-boxes which will be located on perimeter walls, partitions, and vertical columns throughout all buildings.

Patch Panels

The patch panels used should contain 24/48 ports in 1 or 2U and should be rated for use at Category 6 or higher, preferably ECO-6 manufactured by HellermannTyton.

Data lines should be punched-down to TIA/EIA-568-B standards.

Patch panels should be laid-out as indicated in appendix 1

Labelling of the lines at both patch panel and data point ends should be in accordance with current Blackpool and The Fylde College standards.

Once delivered, all lines should be tested; tests should consist of the following:

End to end continuity testing to check for open or short circuits

Crossed pair tests to indicate reversals

Length

Near end crosstalk

Attenuation

Tests should be carried out at appropriate frequencies to ensure conformance to Category 6 specifications and compliance with a maximum cable run of 90metres from patch panel to data point. Test results are to be neatly tabulated and presented in the handover documentation or via electronic copy.

Labelling

1. Patch Panel & Data Point Faceplate

The label on the patch panel and the data point faceplate should take the form <rackID>/<PatchPanelNo>/<PortNo>, where rack ID is the identifier for the rack in the comms room, A, B ,C etc. Patch panel number is the number of the patch panel within the identified rack, where each patch panel in the rack has a unique identifier, starting at the top of the rack with panel number 1, and port number is the number of the port on the identified patch panel in the identified rack.

2. General

Labels should be typed or printed and not hand written.

Documentation

A minimum of 2 copies of all records should be submitted to LITS at project completion, these should consist of at least the following:

TDR test results stating type of test equipment used and test methods employed.

Manufacturer specification documents for all major data wiring components, i.e., cable, patch panels and data points.

A report for each individual communications centre, numbering all the data points to the communications centre with their respective room numbers. This will ensure swift connection changes when LITS take control of the works, and the subsequent changes.

Patch Leads

For each new CAT6 feed installed, a 1 metre white CAT6 patch lead should be supplied for connection within the cabinet, and a 3 metre white CAT6 patch lead for connection to the equipment.

Appendix 2 – Changelog

Version	Date	Revisions
1.0	2008-10-10	Initial revision in B&TFC proof status, from LU ISS documentation.
1.1	2008-10-14	Section added on Cat6 cabling.
1.2	2009-01-07	Modification to UPS spec (previous model updated).
1.4	2010-06-25	Removed SMU's details from the spec.
1.6	2013-07-25	Removed SB from spec and updated panel type.
1.7	2013-11-28	Updated cable types and some minor changes