

PROFIBUS COMPETENCY CENTRE, AUSTRALIA TECHNICAL SERIES

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ORIGINATOR: GRANT WEYMAN

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SUBJECT: NETWORK LAYOUT

In a single master network, ideally the master should be at one end of the segment with the termination enabled. At the other end of the segment a repeater or optical fibre link can be used to extend the network to another segment. Using this topography any station can be removed or replaced without upsetting bus termination. Note that power must always be supplied to the repeater to ensure network operation.

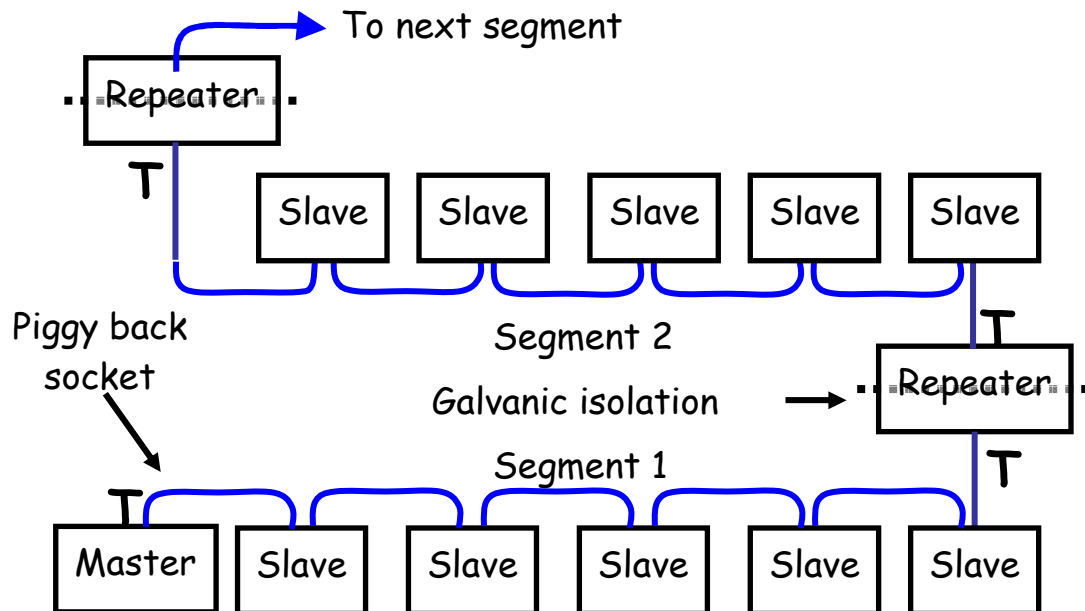


Fig. 1 Example of Network Layout

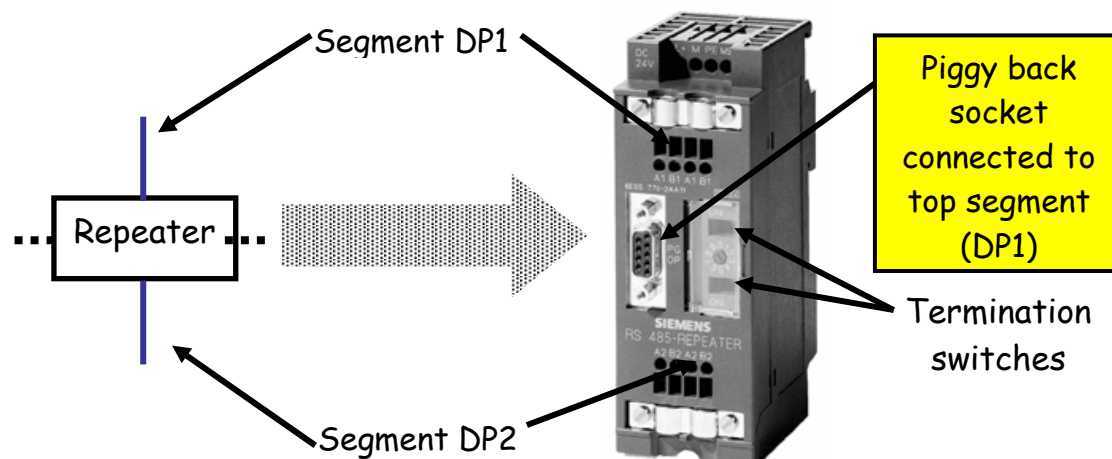


Fig. 2 Repeater

The segment cable from the master, should be connected to the bottom segment DP2, so that the DP1 (outgoing) segment can be accessed by analysis tools using the piggyback connector. In the last segment a properly powered termination must be used.

If the master must be located other than at an end of a segment, care must be taken that the devices at the ends of the segment must have powered terminations. Alternatively, an “active terminator” can be used, giving the advantage that any device can be removed without disrupting the network.

Although each segment must be laid out as a linear bus, repeaters and optic fibre links allow some freedom with topography.

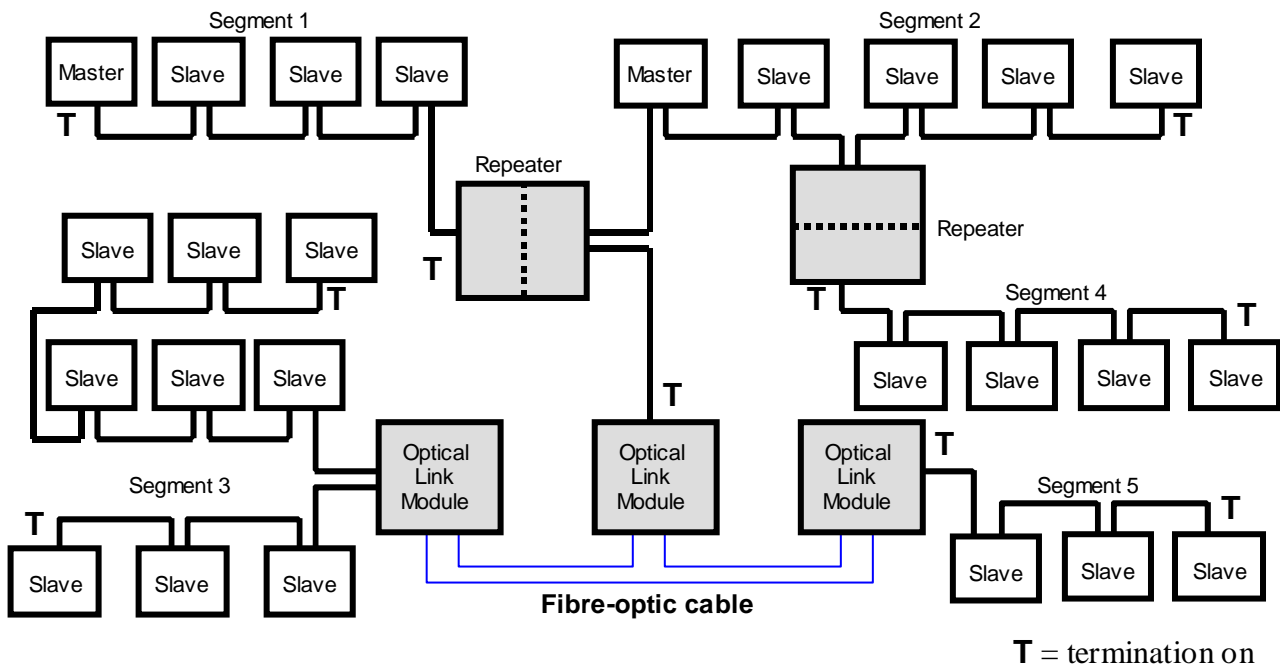


Fig. 3 Example of Typical Networkⁱ

References:

ⁱ CPIC Presentation L02 Verwer Training & Consultancy Ltd.
The New and Rapid Way to PROFIBUS DP, Manfred Popp

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