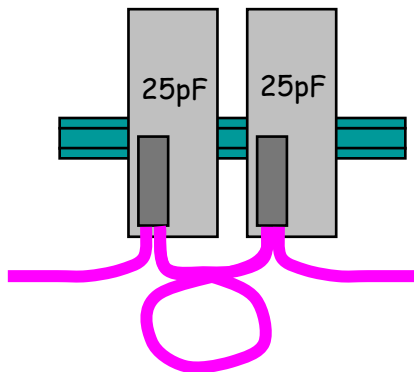


PROFIBUS COMPETENCY CENTRE, AUSTRALIA TECHNICAL SERIES		
DATE: Feb, 09	ORIGINATOR: GRANT WEYMAN	DOCUMENT REF: 09/021
SUBJECT: HIGH BIT RATES		

Use of a bit-rate (Baud rate) greater than 1.5 Mbit/s requires special connectors with built in inductors. Spur-lines are not allowed when using baud rates greater than 1.5 Mbit/s. The maximum segment length is 100m.

It is recommended that a minimum cable length of 1m is used between any 2 stations, with some device manufacturers recommending a 2m minimum. This is because stations that are closely connected can together cause reflections even though they individually meet the PROFIBUS certification requirements.

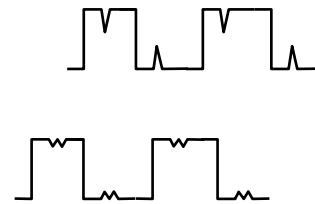
Consider two DIN-Rail mounted devices in a cabinet:



Each certified device on its own has a small connection capacitance typically 25pF and does not cause a reflection.

However when connected closely together the capacitances add and can produce a reflection.

‘Scope trace:-



Separating stations with 1m of cable introduces a small delay between the devices, so the reflections don’t add.

Fig. 1 Cabinet Cable Length exampleⁱ

References:

ⁱ CPIC Presentation L03 Verwer Training & Consultancy Ltd. The New and Rapid Way to PROFIBUS DP, Manfred Popp

<http://www.profibuscentre.com.au>
<http://www.profibus.com/>