

Comparison of the available 12 channel VCSEL Laser links.

Cost and compatibility table

Manufacturer	SNAP12 multi source agreement (MSA) compatible	Cost per link £ (Ex VAT)
Zarlink	Yes	838
Infineon	No	1164
Corona	No	
Agilent	Yes (but cooling fins on package)	789
Picolight	Yes	611
Emcore	Yes	
OCPi	Yes	486

From this table the choice is for devices in the SNAP12 MSA. Particularly OCPi , and then picolight. The MSA defines the mechanical, electronic, and optical interfaces. Each device should be a drop in replacement for the others. Prices should come down further when quantity orders are placed. The demonstrator is going to need 72 links (12 detectors).

This is the position of availability to-day, but by the time the demonstrator is constructed the market could have moved to a different method of multi-channel transmission altogether.

The AGATA Infrastructure Group have been requested to specify the length of the link. There has been no response yet, but the feeling is 100 metres.

All the above modules will operate over 100 metres using available fiber specified as Multi-mode, core size :62.5/125um, and modal bandwidth: 200Mhz.Km. Quotes are being obtained for the different methods of making this connection.

- Ribbon cable directly from Digitiser to Preprocessor using pre-assembled cables. (remember since we only use 6 out of 12 fibers there is 50% wastage)
- 6 Ribbon cables to digitizer local breakout box via multi-core (36 segment + 1 core + 1 GTS) to pre-processor breakout box to 6 ribbon cables.
- Any other ideas ??
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There is also a new entry to the Laser data transmission market, Aduro, with a coarse wave division multiplex (CWDM) device which multiplexes four channels down a single fiber using different frequencies of light for each channel. There needs to be more than one source of these devices before we can consider them. I think there would be a significant saving in cable costs if they can be used. This is intended for use in commercial networks over existing single fiber connections to improve speed from 1Gb/s to 10Gb/s but whether it will be successful