

# 17th UKNOF / Edinburgh

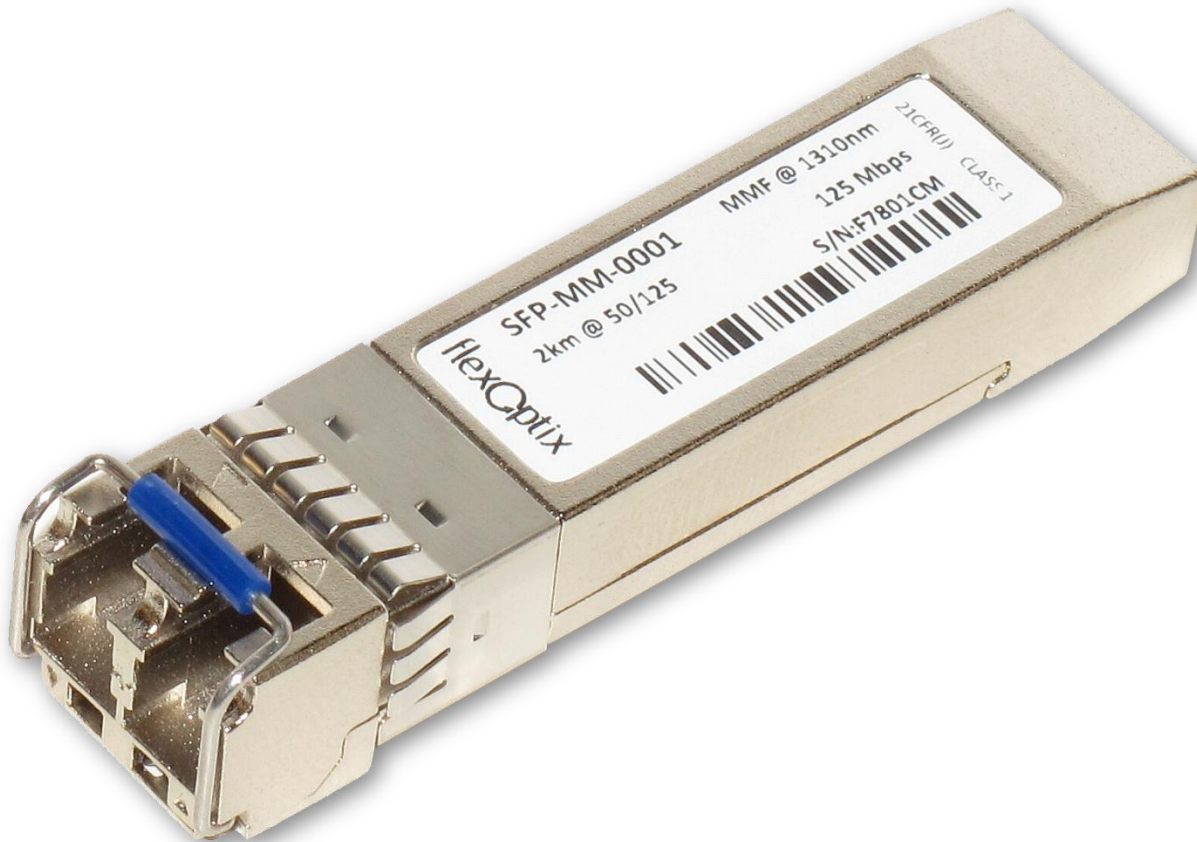
## 7. September 2010

**Inside SFP**

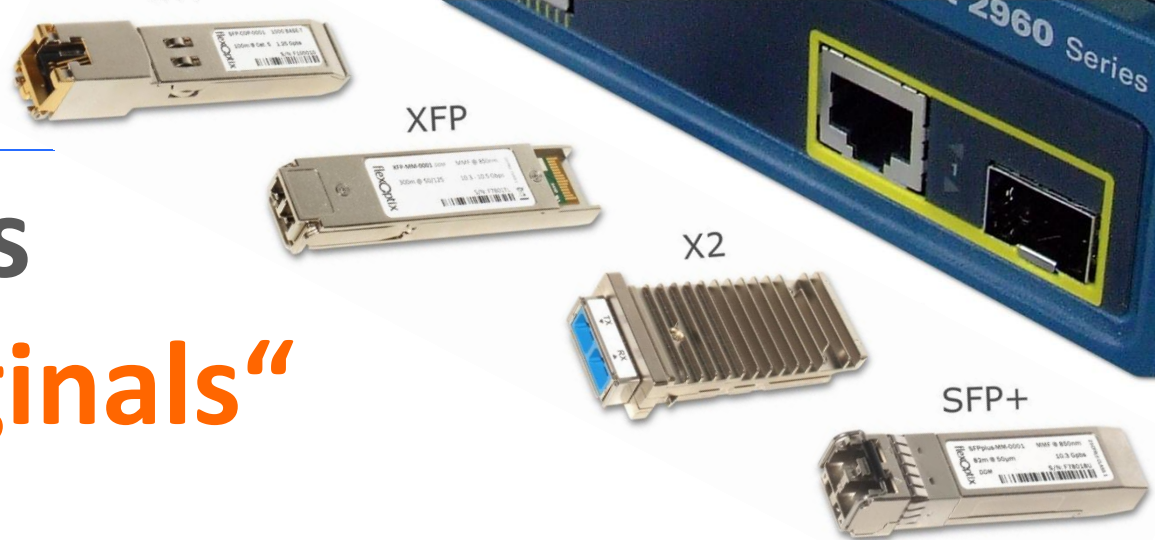


**or : THE BATTLE OF  
OPTICS**





# Compatibles – True “Originals”



Our experience

System vendors do design switches or router - but **DEFINITELY NOT** the optics

The Challenge

Some Switch & router vendors block the use of standard Third-Party optics (some by intention, some by accident)

The Solution

ReConfigurable optics connected to an intelligent Pluggable-Configurator to enable use in any system

# Memory - identification

Offset (h)	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
00000000	03	04	07	20	00	00	00	00	00	00	00	01	67	00	0A	64
00000010	00	00	00	00	46	4C	45	58	4F	50	54	49	58	20	20	20
00000020	20	20	20	20	00	00	00	00	53	46	50	20	70	6C	75	73
00000030	2D	43	57	44	4D	2D	31	30	20	20	20	20	05	FA	00	B7
00000040	00	1A	00	00	53	39	39	4E	33	34	30	30	30	32	20	20
00000050	20	20	20	20	30	39	31	31	30	35	20	20	68	B2	01	A3
00000060	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A
00000070	68	69	65	72	20	63	68	65	63	6B	73	75	6D	6D	65	20
00000080	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A
00000090	69	63	68	20	62	69	6E	20	65	69	6E	20	53	46	50	20
000000A0	70	6C	75	73	20	6D	69	74	20	31	30	2C	33	20	47	62
000000B0	70	73	20	6D	69	74	20	65	69	6E	65	72	20	43	57	44
000000C0	4D	2D	57	65	6C	6C	65	6E	6C	E4	6E	67	65	20	76	6F
000000D0	6E	20	31	35	33	30	6E	6D	20	20	20	20	20	20	20	20
000000E0	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
000000F0	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
00000100	43	2C	BA	8B	E1	7F	D4	59	AA	E4	26	01	0A	E5	08	34

# Memory human readable

```

Offset(h) 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F
00000000 03 04 07 20 00 00 00 00 00 00 01 67 00 0A 64
00000010 00 00 00 00 46 4C 45 58 4F 50 54 49 58 20 20 20
00000020 20 20 20 20 00 00 00 00 53 46 50 20 70 6C 75 73
00000030 2D 43 57 44 4D 2D 31 30 20 20 20 20 05 FA 00 B7
00000040 00 1A 00 00 53 39 39 4E 33 34 30 30 30 32 20 20
00000050 20 20 20 20 30 39 31 31 30 35 20 20 68 B2 01 A3
00000060 2A 2A 2A 2A 2A 2A 2A 2A 2A 2A 2A 2A 2A 2A 2A 2A
00000070 68 69 65 72 20 63 68 65 63 6B 73 75 6D 6D 65 20
00000080 2A 2A 2A 2A 2A 2A 2A 2A 2A 2A 2A 2A 2A 2A 2A 2A
00000090 69 63 68 20 62 69 6E 20 65 69 6E 20 53 46 50 20
000000A0 70 6C 75 73 20 6D 69 74 20 31 30 2C 33 20 47 62
000000B0 70 73 20 6D 69 74 20 65 69 6E 65 72 20 43 57 44
000000C0 4D 2D 57 65 6C 6C 65 6E 6C E4 6E 67 65 20 76 6F
000000D0 6E 20 31 35 33 30 6E 6D 20 20 20 20 20 20 20 20
000000E0 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20
000000F0 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20
00001000 43 2C BA 8B E1 7F D4 59 AA E4 26 01 0A E5 08 34
  
```

```

... ..g..d
....FLEXOPTIX
....SFP plus
-CWDM-10 .ú..
....S99N340002
091105 h².€
  
```

```

*****
here checksum
*****
I am a SFP plus
with 10,3 Gbps
and a CWDM
wavelength of
1530nm

C, °<a.4c.k|..e4f
  
```

# Config-Tool flexBox



Vendor	Article#	Cost
Alcatel	SFP-GIG-SX	10
<b>Cisco Systems</b>	<b>GLC-SX-MM</b>	<b>10</b>
Extreme	10051	10
Flexoptix	SFP-MM-0005	10
Foundry	E1MG-SX	10
HP Networking	J4858C	10
Juniper	SFP-1GE-SX	10
Nortel	AA1418013	10
3COM	3CSFP91	n/a
Alcatel	MiniGBIC-SX	n/a
Arastra	SFP-1G-SX	n/a
D-LINK	DEM-311GT	n/a
Enterasys	MGBIC-LC01	n/a
Force10	GP-SFP2-1S	n/a

**More Information**

Following system models do support Cisco GLC-SX-MM. Please remind of minimum requirements regarding [firmware-version] />Catalyst Express 500:

- WS-CE500-24LC
- WS-CE500-24PC
- WS-CE5000-12TC

**Cisco ME 2400:**

- ME-2400-24TS-A [12.2(20)EX]
- ME-2400-24TS-D [12.2(20)EX]

**Cisco ME 3400:**

- ME-3400-24TS-A [12.2(20)EX]
- ME-3400-24TS-D [12.2(20)EX]
- ME-34000-12CS-A [12.2(20)SE91]
- ME-34000-12CS-D [12.2(20)SE91]
- ME-34000-2CS-A [12.2(20)SE1]
- ME-3400-24FS-A [12.2(40)SE]

**Configuration History**

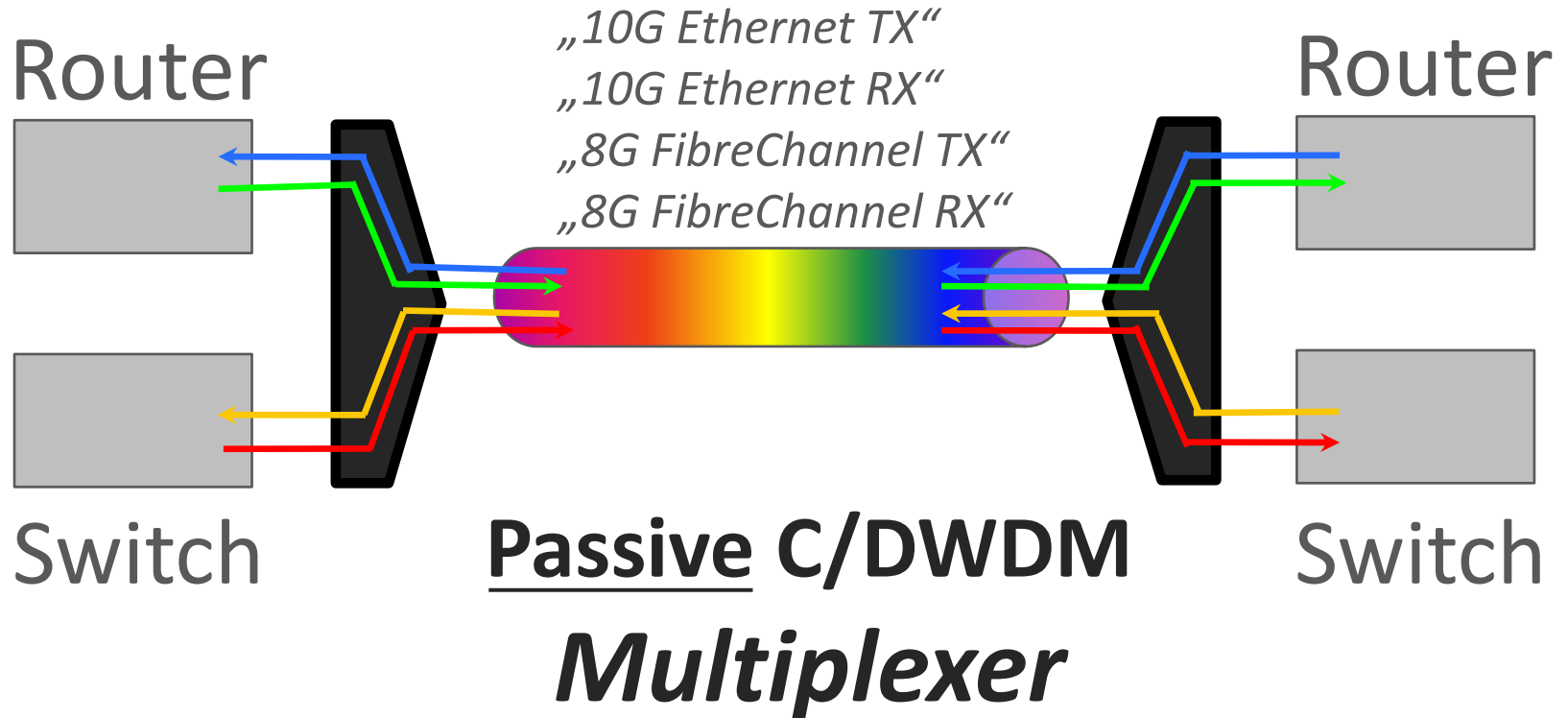
- 14-Aug-09 ✔ not configured SFP (Flexoptix)
- 14-Aug-09 ✔ GLC-SX-MM (Cisco Systems)

The flexBox is a universal programmer for **GBIC, SFP, SFP+ & XFP.**

Easy „Do-It-yourself Konfiguration“ for PC/Laptop via USB on <https://flexbox.reconfigure.me>

# Best Practices

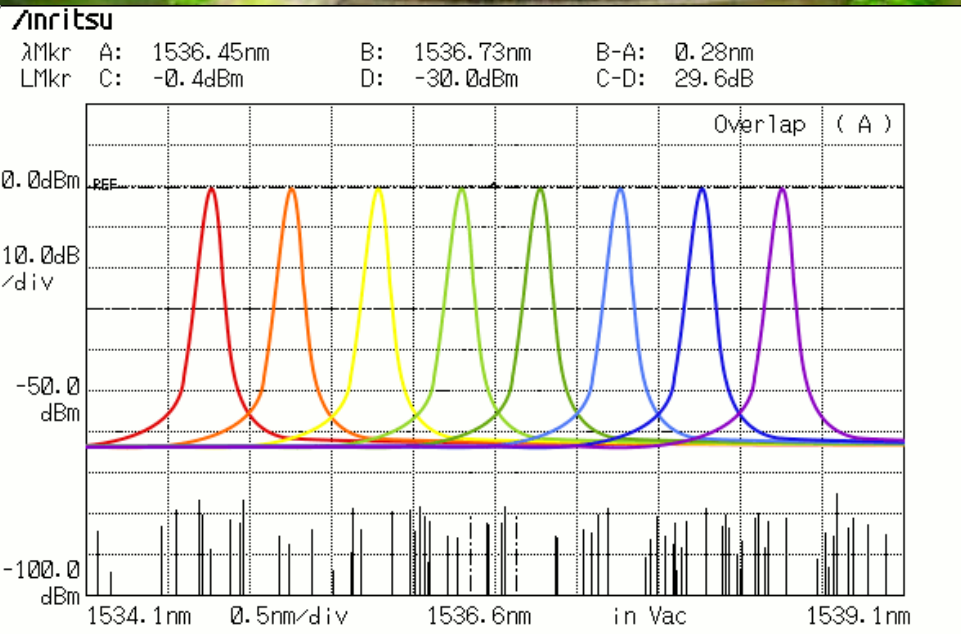
# Efficient fiber usage







# Tunable XFP DWDM over 80 channels



# Market Highlights

tunable  
DWDM  
10G XFP  
for 80km

**10G**  
C/DWDM  
XFP & SFP+

**SFP+ ER**  
(40km)

**1G SFP** for  
200km  
(41dB)

# Future



**IEEE 802.3ba**  
**40G / 100GBASE-LR4**

**4 x 10G / 25G**

**1270, 1290, 1310 and 1330nm**  
**1295, 1300, 1305 and 1310nm** ?



markus.arnold@flexoptix.net  
mobil: +49 176 96266915

# flexOptix

The Transceiver Specialists.

thomas.weible@flexoptix.net

**mobil: +49 176 27053733**



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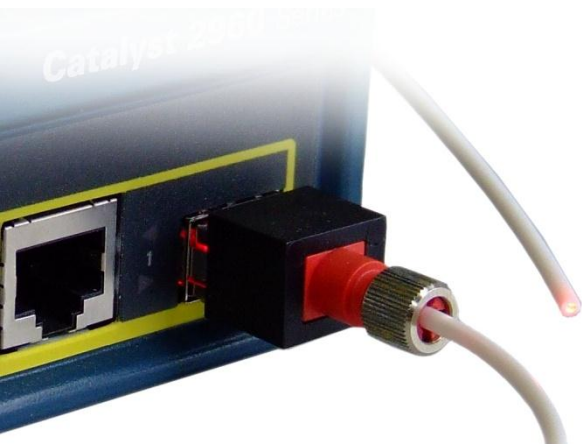
# Optical monitoring

```
Nexus# show interface Ethernet 2/1 transceiver detail
sfp is present
name is FLEXPOTIX
part number is SFP+ SR
serial number is F78018N
nominal bitrate is 10300 Mbits/sec
Link length supported for 50/125um fiber is 82 m(s)
Link length supported for 62.5/125um fiber is 26 m(s)
```

```
-----
                                     Alarms
                                     High      Low
-----
```

<b>Temperature</b>	<b>37.87 C</b>	10.00 C	-25.00 C
<b>Voltage</b>	<b>3.23 V</b>	3.59 V	2.90 V
<b>Current</b>	<b>11.42 mA</b>	40.00 mA	2.00 mA
<b>Tx Power</b>	<b>-3.01 dBm</b>	2.99 dBm	-8.01 dBm
<b>Rx Power</b>	<b>-10.57 dBm</b>	3.99 dBm	-16.02 dBm

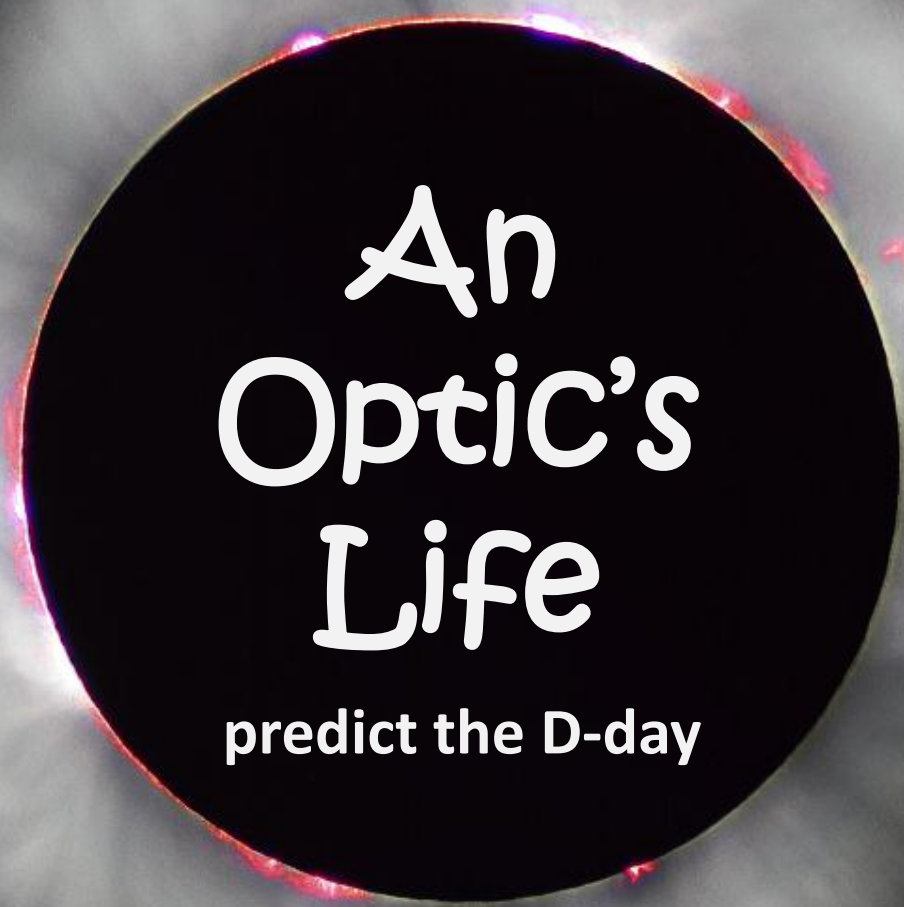
```
Transmit Fault Count = 0
```



# Next Project

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SNMP enabled network  
Optics with DDM



## An Optic's Life

predict the D-day

your participation via [anopticslife@flexoptix.net](mailto:anopticslife@flexoptix.net)