OWS Training

Summary

- High accuracy to measure specific channel wavelengths
- Eliminates the need for expensive DWDM power meters
- Wavelength configurable for specific customer equipment
- Configurable for 2, 4 and 8 wavelengths
- Low loss
- SC/APC connections
- Low return loss will not disrupt network
- Compact design
- Convenient lanyard to securely hold

Currently Available Configurations

OWS201	1490nm & 1570nm
OWS202	1490nm & 1577nm

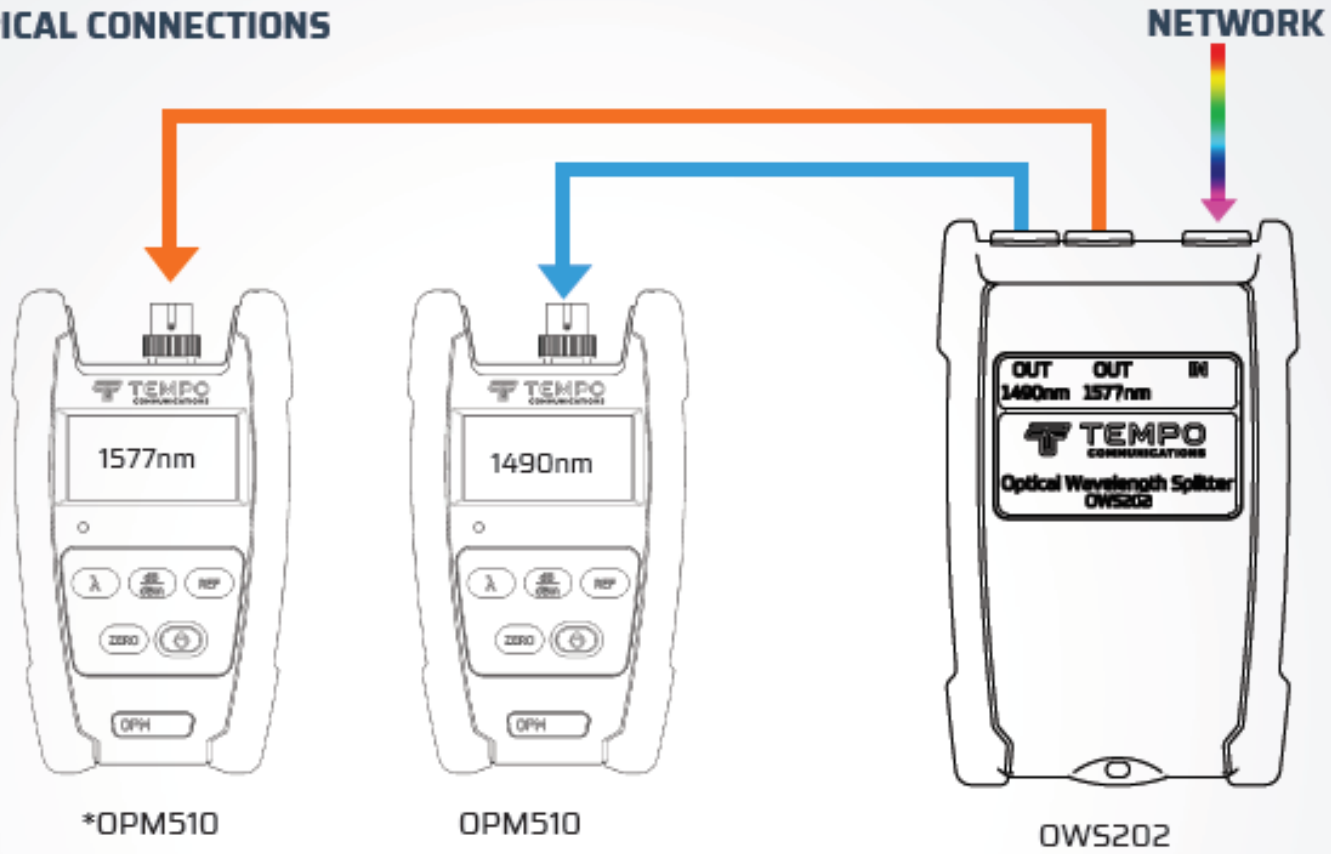
More models can be produced as per customer need

Typical Use Case

1. The field fiber is connected to the OWS input port and the two defined wavelengths are “filtered” into the respective output ports.
2. The two individual signals are then measured with a conventional optical power meter such as the OPM510.

Operation

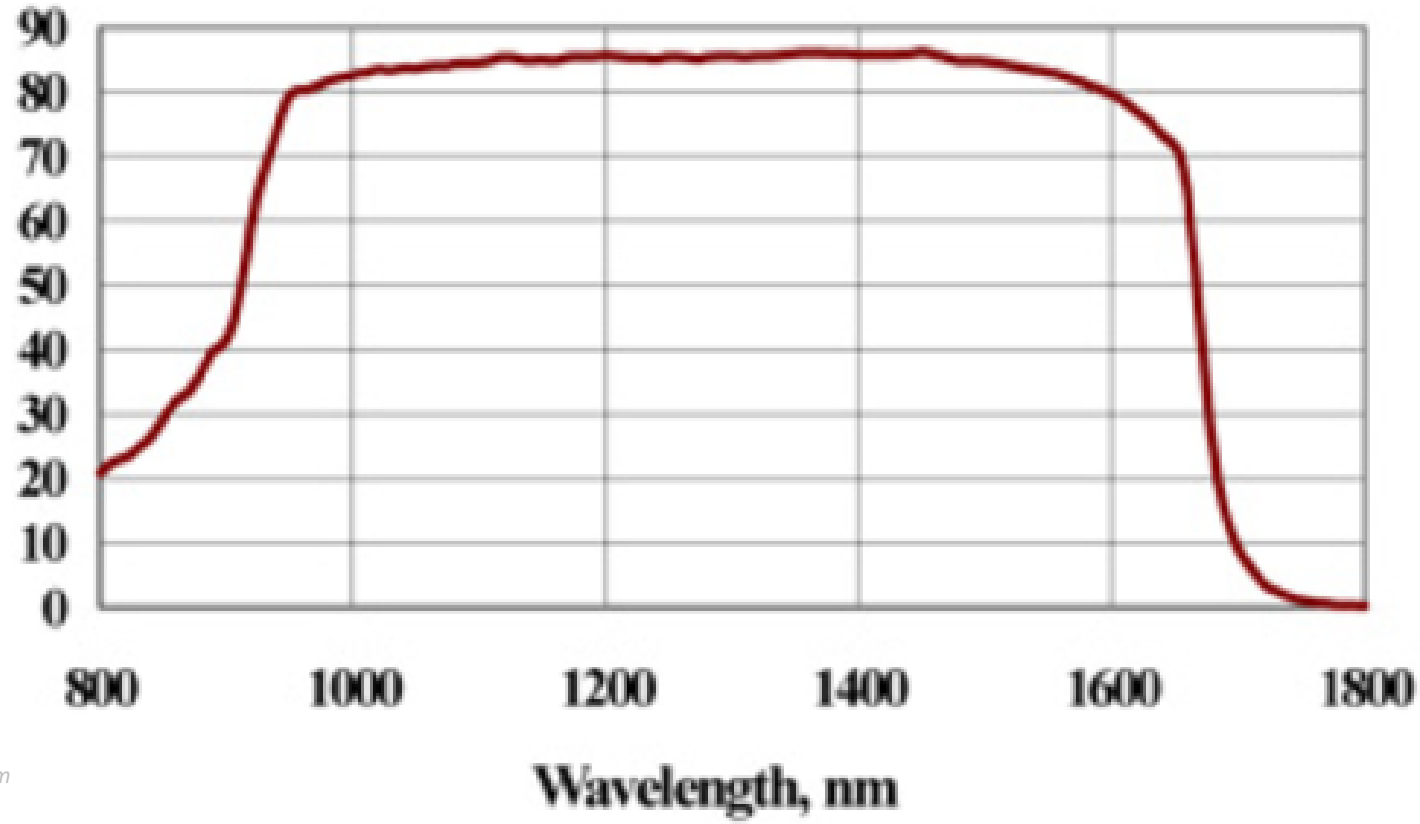
1. Connect the fiber under test to the input port.
2. Connect a standard power meter to each of the output ports.
3. Set the power meter to the closest possible calibrated wavelength for each measured signal. ie for 1577nm select the 1550nm calibration.



*Make sure to clean and inspect all connectors and bulkheads prior to connection.

Negligible Error

The error introduced by not using an optical power meter at the calibrated wavelength is very small as the responsivity of InGaAs diodes are very flat in the measurement range.



WDM Background Information

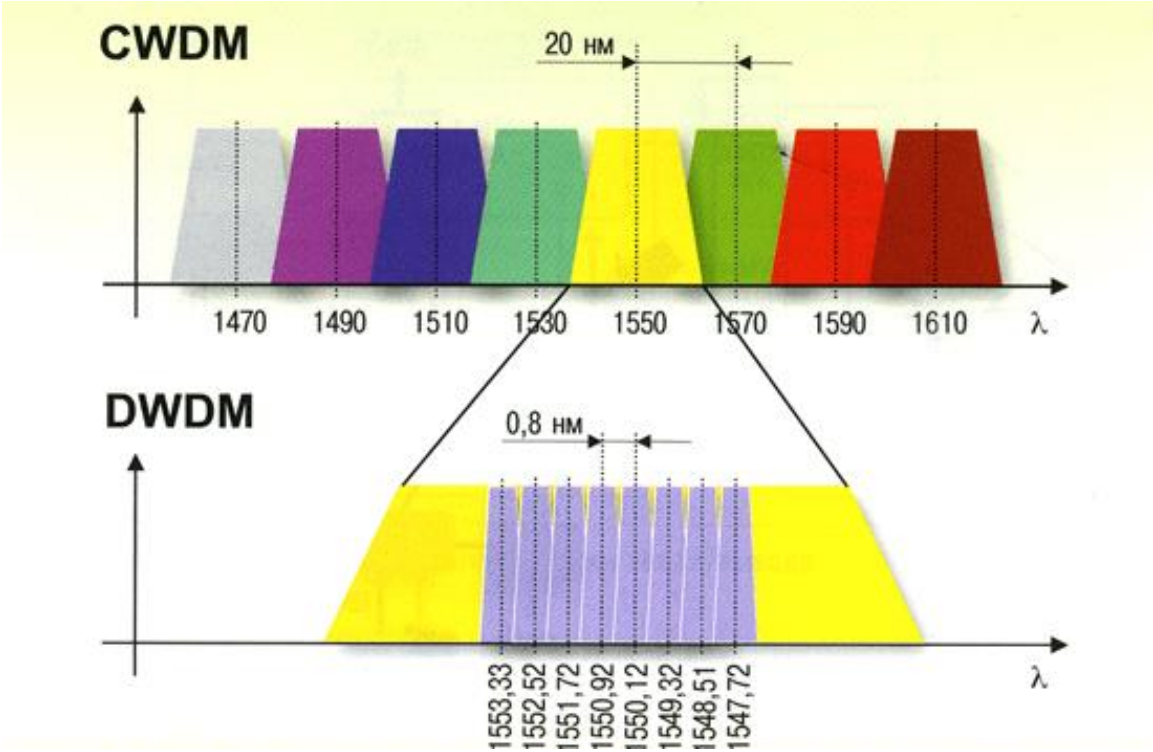
The following slides give some background information on WDM architectures.

Sending Data on a WDM Network

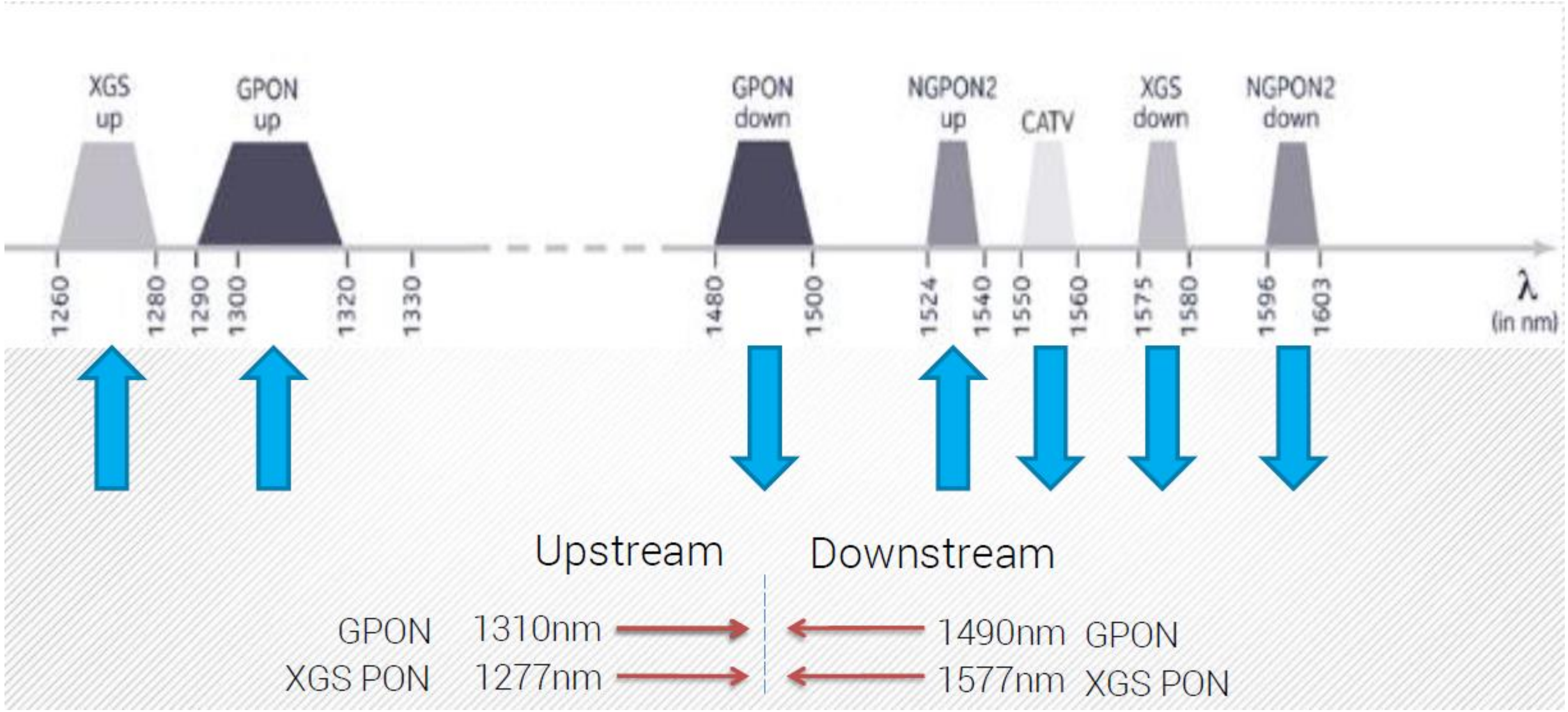
Wavelength division multiplexing (WDM) is a technology or technique modulating numerous data streams, i.e. optical carrier signals of varying wavelengths (colors) of laser light, onto a single optical fiber. WDM enables bi-directional communication as well as multiplication of signal capacity.

CWDM (Coarse Wavelength Division Multiplexing)
DWDM (Dense Wavelength Division Multiplexing)

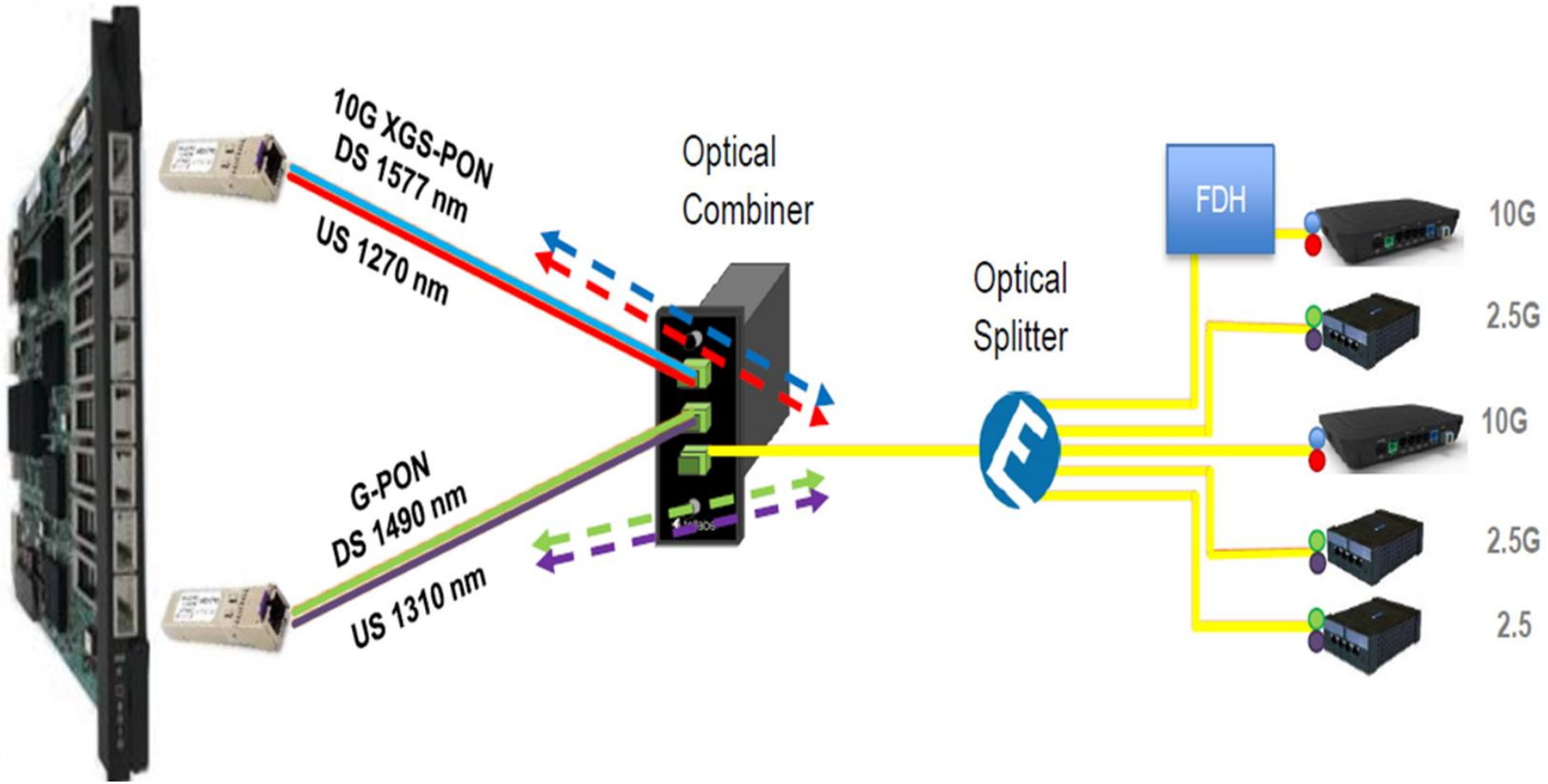
G-PON (Gigahertz Passive Optical Network)
XGS-PON (10 Gigahertz Passive Optical Network)



Optical Power Measurements of WDM Networks

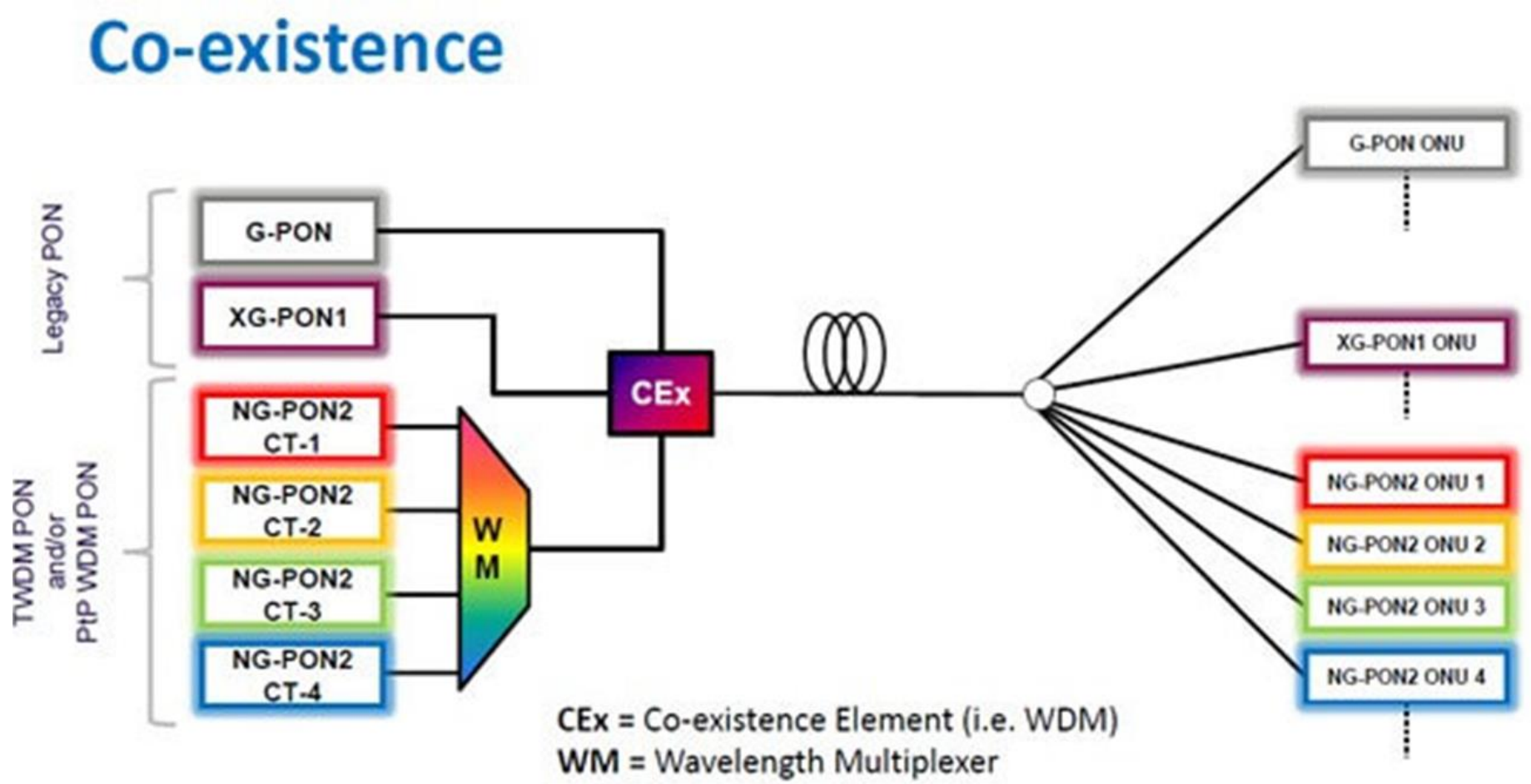


Typical Future WDM Network



NGPON2 is the Next Step in FTT(x) Evolution

Typically 2, 4 or 8 wavelengths could be utilized from the ITU grid.



ITU Grid

Dense Wave Division Multiplexing (DWDM)
ITU Grid: C-Band, 100 GHz Spacing

Channel (#)	Frequency (GHz)	Wavelength (nm)		Channel (#)	Frequency (GHz)	Wavelength (nm)
1	190100	1577.03		37	193700	1547.72
2	190200	1576.03		38	193800	1546.92
3	190300	1575.37		39	193900	1546.12
4	190400	1574.54		40	194000	1545.32
5	190500	1573.71		41	194100	1544.53
6	190600	1572.89		42	194200	1543.73
7	190700	1572.06		43	194300	1542.94
8	190800	1571.24		44	194400	1542.14
9	190900	1570.42		45	194500	1541.35
10	191000	1569.59		46	194600	1540.56
11	191100	1568.11		47	194700	1539.77
12	191200	1567.95		48	194800	1538.98
13	191300	1567.13		49	194900	1538.19
14	191400	1566.31		50	195000	1537.40
15	191500	1565.50		51	195100	1536.61
16	191600	1564.68		52	195200	1535.82
17	191700	1563.86		53	195300	1535.04
18	191800	1563.05		54	195400	1534.25
19	191900	1562.23		55	195500	1533.47
20	192000	1561.42		56	195600	1532.68
21	192100	1560.61		57	195700	1531.90
22	192200	1559.79		58	195800	1531.12
23	192300	1558.98		59	195900	1530.33
24	192400	1558.17		60	196000	1529.55
25	192500	1557.36		61	196100	1528.77
26	192600	1556.56		62	196200	1527.99
27	192700	1555.75		63	196300	1527.22
28	192800	1554.94		64	196400	1526.44
29	192900	1554.13		65	196500	1525.66
30	19300	1553.33		66	196600	1524.89
31	193100	1552.52		67	196700	1524.11
32	193200	1551.72		68	196800	1523.34
33	193300	1550.92		69	196900	1522.56
34	193400	1550.12		70	197000	1521.79
35	193500	1549.32		71	197100	1521.02
36	193600	1548.52		72	197200	1520.25

Note: For 200GHz spacing use either odd or even numbered channels.

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