



Fronthaul 6000 modules

Ericsson's Fronthaul 6000 family is a combination of active and passive units providing Operators with efficient optical connectivity. Based on Wavelength Division Multiplex (WDM), Fronthaul 6000 includes the following components:

- Innovative Filter modules, in service upgradable and designed to serve any network topology.
- Coloured SFP+ / SFP28 optical modules, certified for secure interworking with Ericsson Products.
- Extra low Latency Transponders offering grey to coloured conversion.

Fronthaul 6000 can transport any mix of services including Common Public Radio Interface (CPRI), evolved CPRI (eCPRI), Open Base Station Architecture Initiative (OBSAI) and Ethernet (Eth). Thus, although Fronthaul's primary application is for Radio Area Network Centralization (C-RAN), it can additionally be used for several other types of connectivity:

- Remote Radio Units (RRU) to Basebands (BBU)
- Remote Baseband Units (RBU) to Router
- Router to Router

Best throughput per fibre strand

Fronthaul 6000 ensures Operators minimize their fibre lease costs by multiplexing different services via coloured wavelength. Fronthaul 6000 total capacity is up to 600Gb (24 services @25GB) on a single fibre strand.

Connectivity in any network topologies

Fronthaul 6000 supports many network topologies, including Chain, Point-to-Point (PTP) and Point-to-Multipoint (P2MP) applications, with or without optical protection. GPON and XG(S)-PON coexistence are also possible via dedicated filters

Purpose built WDM modules

The Fronthaul 6000 family includes a smart set of passive WDM modules that can be quipped in both passive and active units. These modules came in two main variants: Units and Cassettes and are both based on single fiber working technology. They are mostly filters: mux/demux or optical add drop and can be cascaded and combined. This allow each Fronthaul site to be either upgraded with more services or cascaded to another remote site without affect the existing traffic.

Single fiber working technology

Fronthaul 6000 modules work with standard duplex SFP+/SFP28 optical pluggable and are based on WDM single fiber architecture (Single Fiber Working, or simply SFW). The optical transceivers can operate in principle with all types of fiber (ITU-T G.652, G.653, G.654, G.655 and G.655 LEAF, G.657 A1/A2 and the corresponding IEC/TIA SM fiber)

Wavelengths and services

Fronthaul 6000 modules support up to 24 end-to-end DWDM connections (i.e. 48 wavelengths) transported over the same single optical fiber: this is possible using different wavelengths in the upstream (i.e. Radio to Baseband) and downstream (i.e. Baseband to Radio) direction. In addition, Fronthaul 6000 modules also foresees a low-channel CWDM point-to point application, supporting up to 3 services (i.e. 6 wavelengths).

Wavelength plan

Filters based on DWDM support 48 wavelength channels of the ITU 100-GHz C-band DWDM grid.

Filters based on CWDM supports 6 wavelength channels of the ITU 20nm CWDM grid.



Modules Details

Unit Name	Description	Type (Unit / Cassette)	WDM Frequencies (where applicable)
OAD-9-S-LB	Indoor/Outdoor 18-ch x 100 GHz	DWDM SFW Unit	192.0÷193.7 THz
OAD-9-S-HB	Indoor/Outdoor 18-ch x 100 GHz	DWDM SFW Unit	193.8÷195.5 THz
OAD-9-2S-LB	Indoor 2x18-ch x 100 GHz	DWDM SFW Cassette	192.0÷193.7 THz
OAD-9-2S-HB	Indoor 2x18-ch x 100 GHz	DWDM SFW Cassette	193.8÷195.5 THz
OAD-12-S-LB	Indoor 24-ch x 100 GHz	DWDM SFW Cassette	191.4÷193.7 THz
OAD-12-S-HB	Indoor 24-ch x 100 GHz	DWDM SFW Cassette	193.8÷196.1 THz
OAD-3-S-A	Indoor/Outdoor 6-ch x 100 GHz	DWDM SFW Unit	191.4÷191.9 THz
OAD-3-S-B	Indoor/Outdoor 6-ch x 100 GHz	DWDM SFW Unit	192.0÷192.5 THz
OAD-3-S-C	Indoor/Outdoor 6-ch x 100 GHz	DWDM SFW Unit	192.6÷193.1 THz
OAD-3-S-D	Indoor/Outdoor 6-ch x 100 GHz	DWDM SFW Unit	193.2÷193.7 THz
OAD-3-S-E	Indoor/Outdoor 6-ch x 100 GHz	DWDM SFW Unit	193.8÷194.3 THz
OAD-3-S-F	Indoor/Outdoor 6-ch x 100 GHz	DWDM SFW Unit	194.4÷194.9 THz
OAD-3-S-G	Indoor/Outdoor 6-ch x 100 GHz	DWDM SFW Unit	195.0÷195.5 THz
OAD-3-S-H	Indoor/Outdoor 6-ch x 100 GHz	DWDM SFW Unit	195.6÷196.1 THz
OMD-3-C	Indoor/Outdoor 6-ch	CWDM SFW Unit	DS:1291;1331;1371; US:1271;1311;1351
GCF-1	Indoor/Outdoor G-PON Coexistence	Optical Filter Unit	
GCF-3	Indoor/Outdoor PON Coexistence	Optical Filter Unit	
BMD-8-S	Indoor/Outdoor 8-band SFW	Mux/DeMux Unit	
SPL-2-S-2	Indoor/Outdoor 2x2 LGX Optical	Power Splitter/Coupler Unit	
SPL-2-S-4	Indoor/Outdoor 2x4 LGX Optical	Power Splitter/Coupler Unit	
OPM-1-S-1	Indoor LGX Optical Line Protection	Switch Unit with SFP Plug	

Technical Specifications

Unit Name	Type	HxWxD (mm)	Type	Weight (kg)	Suitable Fronthaul units
OAD-9-S-LB/HB	Passive	29 x 120 x 116	(Full-LGX)	0.22	Any Passive Fronthaul but 6681
OAD-9-2S-LB/HB	Passive	32 x 106 x 170	(Cassette)	0.22	Fronthaul 6683 and Fronthaul 6624
OAD-12S-LB/HB	Passive	32 x 106 x 170	(Cassette)	0.26	Fronthaul 6683 and Fronthaul 6624
OAD-3-S-A/B/C/D/E/F/G/H	Passive	14.48 x 120 x 116	(Half-LGX)	0.15	Any Passive Fronthaul
OMD-3-C	Passive	14.48 x 120 x 116	(Half-LGX)	0.15	Any Passive Fronthaul
GCF-1	Passive	14.48 x 120 x 116	(Half-LGX)	0.15	Any Passive Fronthaul
GCF-3	Passive	14.48 x 120 x 116	(Half-LGX)	0.13	Any Passive Fronthaul
BMD-8-S	Passive	14.48 x 120 x 116	(Half-LGX)	0.15	Any Passive Fronthaul
SPL-2-S-2	Passive	14.48 x 120 x 116	(Half-LGX)	0.15	Any Passive Fronthaul
SPL-2-S-4	Passive	14.48 x 120 x 116	(Half-LGX)	0.15	Any Passive Fronthaul
OPM-1-S-1	Active	14.48 x 120 x 116	(Half-LGX)	0.2	Fronthaul 6681 and Fronthaul 6689

Supported configurations

Product name	Type	Product Description	Composition rules	Max Service number
Fronthaul 6681	Passive	Indoor Mux-Demux Subrack	1 Half LGX optical filter	Up to 24 services
Fronthaul 6683	Passive	Indoor Filter Cassettes Subrack	Up to 4 Cassette	Up to 72 services
Fronthaul 6689	Passive	Indoor Filter Units Subrack	Up to 6 Half-LGX optical filter	Up to 36 services
Fronthaul 6387	Passive	Outdoor ERS enclosure S	Up to 4 Half-LGX optical filters	Up to 18 services
Fronthaul 6389	Passive	Outdoor ERS enclosure L	Up to 6 Half-LGX optical filters	Up to 24 services
Fronthaul 6585	Passive	Outdoor IP68 enclosure XS	Up to 2 Half-LGX optical filters	Up to 9 services
Fronthaul 6587	Passive	Outdoor IP68 enclosure	Up to 4 Half-LGX optical filters	Up to 18 services
Fronthaul 6589	Passive	Outdoor IP68 enclosure + Splice	Up to 4 Half-LGX optical filters	Up to 18 services
Fronthaul 6322	Active	Outdoor ERS enclosure	Up to 3 Half-LGX optical filters	Up to 9 services
Fronthaul 6624	Active	Indoor Transponder unit	1 Cassette	Up to 12 services