3405 Optical SFP Series

3G/HD/SD/ASI EO/OE/OO SFP's

IM166688

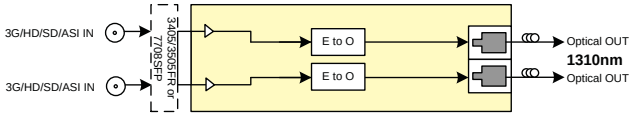
The Evertz 3405 series SFP's are used in the 3405 and 3505 series of mounting frames, and 7708SFP series of card-based SFP carriers. Depending on the model, these SFP's support optical transmit, receive or regenerator functions. Reclocked versions support standard SMPTE rates for 3G/HD/SD/ASI signals, while non-reclocked versions support other rates such as MADI.

For appropriate mounting frames, please also see the 3405FR and 3505FR series frames, which are available in standalone and rackmount solutions to accommodate two to 64 SFP modules.

Optical Transmitter SFP's

3405T13-2

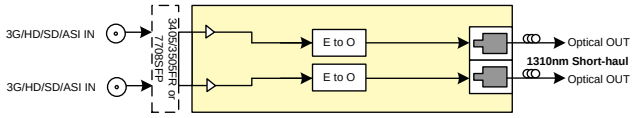
Dual channel SFP optical transmitter with standard 1310nm lasers. Non-reclocked, with support for 3G, HD, SD and ASI plus other rates such as MADI.



When Installed in BNC or DIN Frames

3405T13-2-S

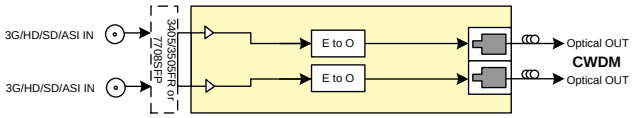
Dual channel SFP optical transmitter with short-haul 1310nm lasers. Non-reclocked, with support for 3G, HD, SD and ASI plus other rates such as MADI. For use in intra-facility and multimode fiber applications.



When Installed in BNC or DIN Frames

3405TXX/YY-2

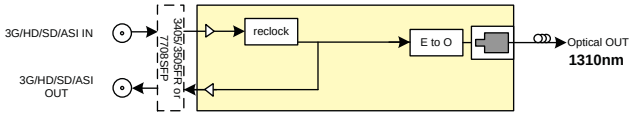
Dual channel SFP optical transmitter with short-haul 1310nm lasers. Non-reclocked, with support for 3G, HD, SD and ASI plus other rates such as MADI. For use in intra-facility and multimode fiber applications.



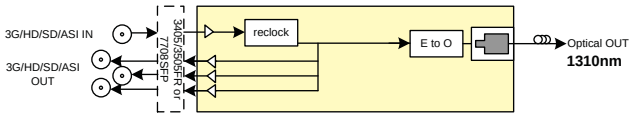
When Installed in BNC or DIN Frames

3405T13-R

Single channel SFP optical transmitter with standard 1310nm laser. Reclocked with support for 3G, HD, SD and ASI. Single electrical loop-out when installed in a BNC frame, triple electrical loop-out when installed in a frame with DIN 1.0/2.3 connectors.



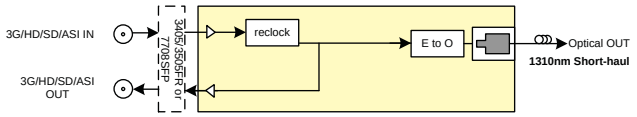
When installed in BNC Frames



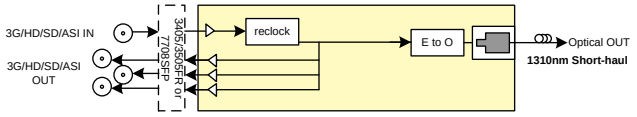
When installed in DIN frames or 3505FR-32-BNC4

3405T13-R-S

Single channel SFP optical transmitter with short-haul 1310nm laser. Reclocked with support for 3G, HD, SD and ASI. Single electrical loop-out when installed in a BNC frame, triple electrical loop-out when installed in a frame with DIN 1.0/2.3 connectors. For use in intra-facility and multimode fiber applications.



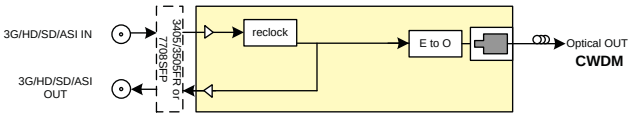
When installed in BNC Frames



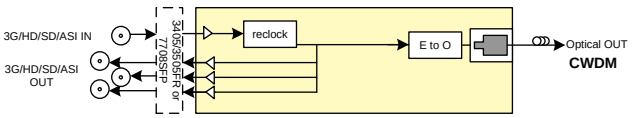
When installed in DIN frames or 3505FR-32-BNC4

3405TXX-R

Single channel SFP optical transmitter with CWDM laser, available in 16 G.694.2-compliant wavelengths from 1270nm to 1610nm. Reclocked with support for 3G, HD, SD and ASI. Single electrical loop-out when installed in a BNC frame, triple electrical loop-out when installed in a frame with DIN 1.0/2.3 connectors.



When installed in BNC Frames



When installed in DIN frames or 3505FR-32-BNC4

The Complete Solution Provider

IM166688

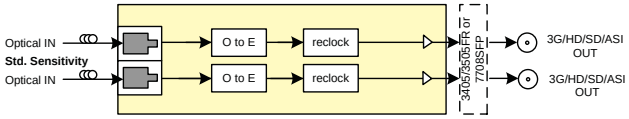
3405 Optical SFP Series

3G/HD/SD/ASI EO/OE/OO SFP's

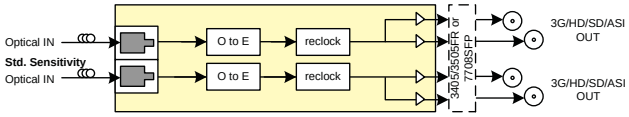
Optical Receiver SFP's

3405R-2R

Dual channel SFP optical receiver. Reclocked with support for 3G, HD, SD and ASI. Single electrical output per optical input when installed in a BNC frame, dual electrical output per optical input when installed in a frame with DIN 1.0/2.3 connectors.



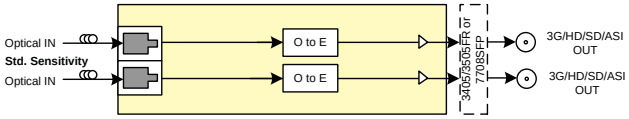
When installed in BNC frames



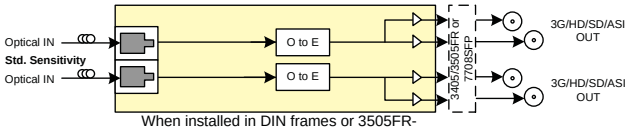
When installed in DIN frames or 3505FR-32-BNC4

3405R-2

Dual channel SFP optical receiver. Non-reclocked, with support for 3G, HD, SD and ASI plus other rates such as MADI. Single electrical output per optical input when installed in a BNC frame, dual electrical output per optical input when installed in a frame with DIN 1.0/2.3 connectors.



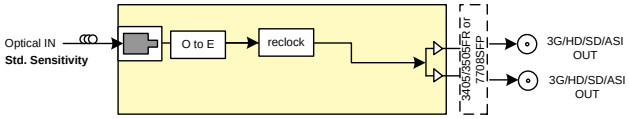
When installed in BNC frames



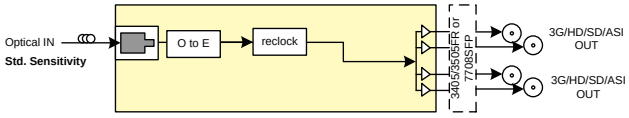
When installed in DIN frames or 3505FR-32-BNC4

3405R-DA4R

Single channel SFP optical receiver. Reclocked with support for 3G, HD, SD and ASI. Dual electrical output when installed in a BNC frame, quad electrical output when installed in a frame with DIN 1.0/2.3 connectors.



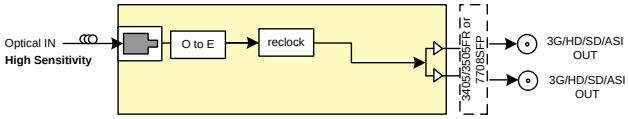
When installed in BNC frames



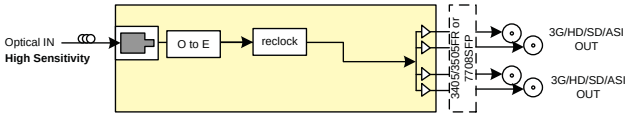
When installed in DIN frames or 3505FR-32-BNC4

3405R-DA4R-H

Single channel SFP optical high-sensitivity receiver. Reclocked with support for 3G, HD, SD and ASI. Dual electrical output when installed in a BNC frame, quad electrical output when installed in a frame with DIN 1.0/2.3 connectors.



When installed in BNC frames

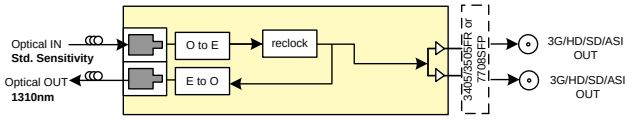


When installed in DIN frames or 3505FR-32-BNC4

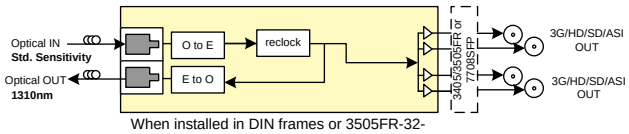
Optical Regenerator/Wavelength Shifter SFP's

3405OO13-DA4

Single channel SFP optical regenerator with standard 1310nm laser. Reclocked optical and electrical outputs with support for 3G, HD, SD and ASI. Dual electrical output when installed in a BNC frame, quad electrical output when installed in a frame with DIN 1.0/2.3 connectors.



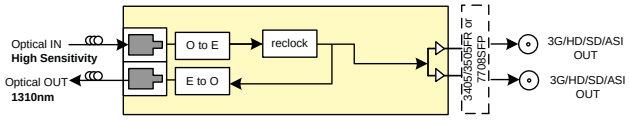
When installed in BNC frames



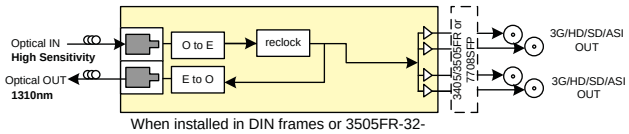
When installed in DIN frames or 3505FR-32-BNC4

3405OO13-DA4-H

Single channel SFP optical regenerator with standard 1310nm laser and high sensitivity receiver. Reclocked optical and electrical outputs with support for 3G, HD, SD and ASI. Dual electrical output when installed in a BNC frame, quad electrical output when installed in a frame with DIN 1.0/2.3 connectors.



When installed in BNC frames



When installed in DIN frames or 3505FR-32-BNC4

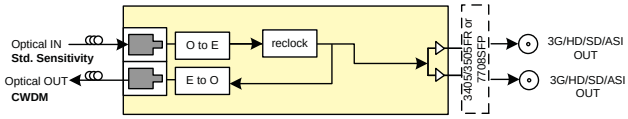
3405 Optical SFP Series

3G/HD/SD/ASI EO/OE/OO SFP's

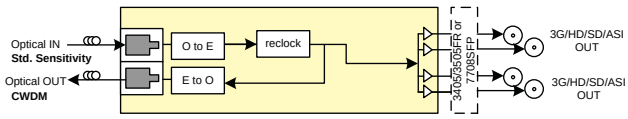
IM166688

3405OOXX-DA4

Single channel SFP optical regenerator with standard 1310nm laser and high sensitivity receiver. Reclocked optical and electrical outputs with support for 3G, HD, SD and ASI. Dual electrical output when installed in a BNC frame, quad electrical output when installed in a frame with DIN 1.0/2.3 connectors.



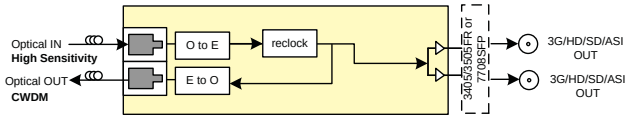
When installed in BNC frames



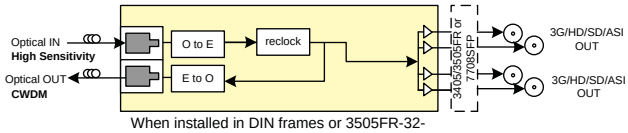
When installed in DIN frames or 3505FR-32-BNC4

3405OOXX-DA4-H

Single channel SFP optical regenerator with high sensitivity receiver and CWDM laser, available in 16 G.694.2-compliant wavelengths from 1270nm to 1610nm. Reclocked optical and electrical outputs with support for 3G, HD, SD and ASI. Dual electrical output when installed in a BNC frame, quad electrical output when installed in a frame with DIN 1.0/2.3 connectors.



When installed in BNC frames



When installed in DIN frames or 3505FR-32-BNC4

Specifications

Optical Output:

Number of Outputs:	Up to 2 per SFP
Connector:	LC/UPC
Fiber:	Compatible with Singlemode or 50/62.5um Multimode
Optical Power:	
Standard 1310nm:	-2dBm +/-1dBm
-S (Short haul 1310nm):	-7dBm+/-1dBm
CWDM:	+3dBm +/-1dBm
Wavelength:	
Standard & -S:	1310nm
CWDM:	1270nm-1610nm, ITU-T G.694.2 compliant

Optical Input:

Number of Inputs:	Up to 2 per SFP
Connector:	LC/UPC
Fiber:	Compatible with Singlemode or 50/62.5um Multimode
Operating Wavelength:	1270nm to 1610nm
Maximum Input Power:	
Standard:	-1dBm
High Sensitivity:	-7dBm
Optical Sensitivity:	
Standard:	-21dBm at 2.97Gb/s pathological Level A
	-23dBm at 2.97Gb/s color bars
High Sensitivity:	-28dBm at 2.97Gb/s pathological Level A
	-30dBm at 2.97Gb/s color bars

Electrical Inputs:

Reclocked Standards:	SMPTE 424M (3 Gb/s), SMPTE 292M, (1.5Gb/s), SMPTE 259M (270Mb/s), DVB-ASI
Connector:	BNC or DIN 1.0/2.3, depending on model of 3405/3505 frame
Impedance:	75Ω (nominal)
Equalization:	Automatic to 80m @ 3 Gb/s, 100m@1.5Gb/s, 250m @ 270Mb/s (with Belden1694A or equivalent cable)
Return Loss:	> 15dB up to 1.5GHz, > 10dB up to 3GHz

Electrical Outputs:

Connector:	BNC or DIN 1.0/2.3, depending on model of 3405/3505 frame
Impedance:	75Ω (nominal)
Signal Level:	800mV (nominal)
DC Offset:	0V +/-0.5V
Rise and Fall Time (Reclocked SFP's only):	
HD/3G:	<135ps
SD:	< 900ps
Overshoot (Reclocked SFP's only):	< 10% of amplitude
Return Loss:	>15dB to 1.5GHz, >10dB to 3GHz
Alignment Jitter (Reclocked SFP's only):	
	< 0.2UI to 1.485Gb/s
	< 0.3UI to 2.97Gb/s

Physical:

SFP Form-factor

Ordering Information

**Note:*

- *Multimode applications require a 5dB optical attenuator at the output of all transmitting ports, except when "-S" short haul version transmitter SFP's are used.*
- *XX versions include the following: 27, 29, 31, 33, 35, 37, 43, 45, 47, 49, 51, 53, 55, 57, 59, 61, see CWDM wavelength ordering information*
- *XX/YY versions include the following: 27/29, 31/33, 35/37, 43/45, 47/49, 51/53, 55/57, 59/61, see CWDM wavelength ordering information*

3405T13-2	Dual channel SFP optical transmitter with standard 1310nm lasers, non-reclocked.
3405T13-2-S	Dual channel SFP optical transmitter with short-haul 1310nm lasers, non-reclocked.
3405TXX/YY-2	Dual channel SFP optical transmitter with CWDM lasers (1270nm to 1610nm), non-reclocked.
3405T13-R	Single channel SFP optical transmitter with standard 1310nm laser, reclocked.
3405T13-R-S	Single channel SFP optical transmitter with short-haul 1310nm laser, reclocked.
3405TXX-R	Single channel SFP optical transmitter with CWDM laser (1270nm to 1610nm), reclocked.
3405R-2R	Dual channel SFP optical receiver, reclocked.
3405R-2	Dual channel SFP optical receiver, non-reclocked .
3405R-DA4R	Single channel SFP optical receiver, reclocked.
3405R-DA4R-H	Single channel SFP optical high-sensitivity receiver, reclocked.
3405OO13-DA4	Single channel SFP optical regenerator with standard 1310nm laser, reclocked.
3405OO13-DA4-H	Single channel SFP optical regenerator with standard 1310nm laser and high sensitivity receiver, reclocked.
3405OOXX-DA4	Single channel SFP optical regenerator with CWDM laser (1270nm to 1610nm), reclocked.
3405OOXX-DA4-H	Single channel SFP optical regenerator with high sensitivity receiver and CWDM laser (1270nm to 1610nm), reclocked.

Enclosures

Please see the appropriate catalogue pages for details on the enclosure options listed.

3405FRM-BNC	Miniature SFP frame, single SFP capacity, BNC connectors.
3405FRM-DIN	Miniature SFP frame, single SFP capacity, DIN 1.0/2.3 connectors.
3405FRS-BNC	Standalone SFP frame, with SNMP monitoring and control, quad SFP capacity, BNC connectors.
3405FR-BNC	1RU SFP frame, optional SNMP monitoring and control, 16 SFP capacity, BNC connectors.
3405FR-DIN	1RU SFP frame, optional SNMP monitoring and control, 16 SFP capacity, DIN 1.0/2.3 connectors.
3405FR-XLINK	1RU SFP frame, optional SNMP monitoring and control, 16 SFP capacity, XLINK connector.
3505FR-32-BNC4	2RU SFP frame, optional SNMP monitoring and control, 32 SFP capacity, BNC connectors.
3505FR-64-BNC2	2RU SFP frame, optional SNMP monitoring and control, 64 SFP capacity, BNC connectors.
3505FR-DIN	2RU SFP frame, optional SNMP monitoring and control, 64 SFP capacity, DIN 1.0/2.3 connectors.
3505FR-XLINK	2RU SFP frame, optional SNMP monitoring and control, 64 SFP capacity, XLINK connectors.
7708SFP	Card based SFP carrier for 7700/7800FR series frames, one SFP capacity, BNC connectors.
7708SFP-2	Card based SFP carrier for 7700/7800FR series frames, dual SFP capacity, BNC connectors.
7708SFP-2-DIN	Card based SFP carrier for 7700/7800FR series frames, dual SFP capacity, DIN 1.0/2.3 connectors.
7708SFP-4-DIN-A	Card based SFP carrier for 7700/7800FR series frames, quad SFP capacity, DIN 1.0/2.3 connectors.

The Complete Solution Provider

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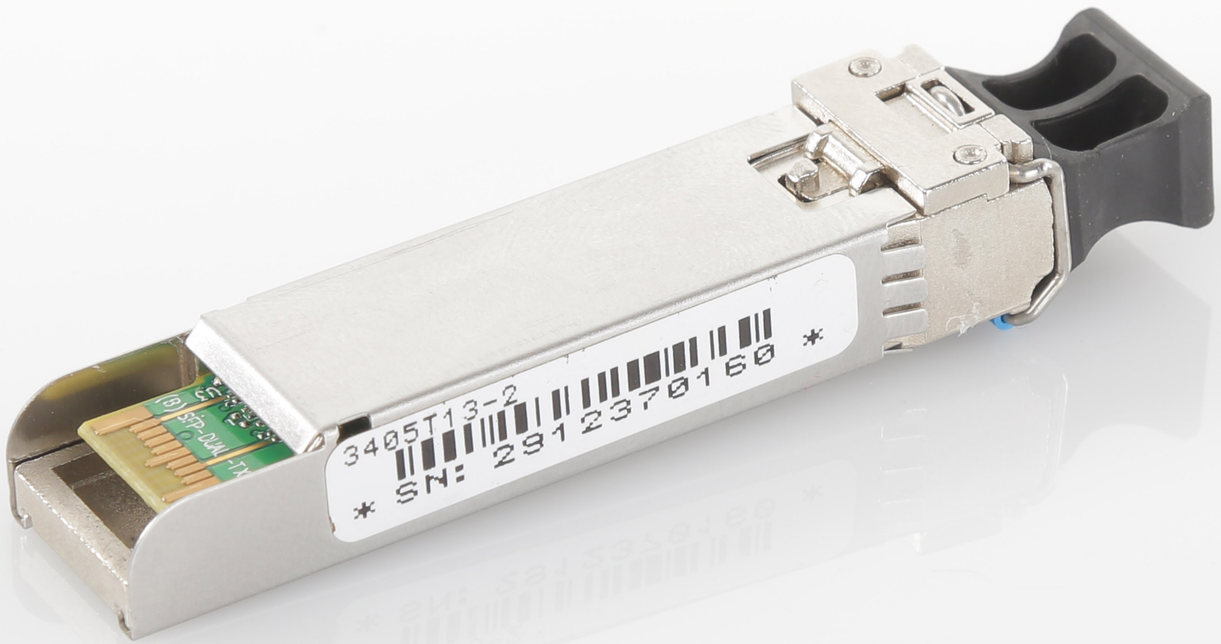
3405T13-2



3405T13-2

3405T13-2

3405T13-2