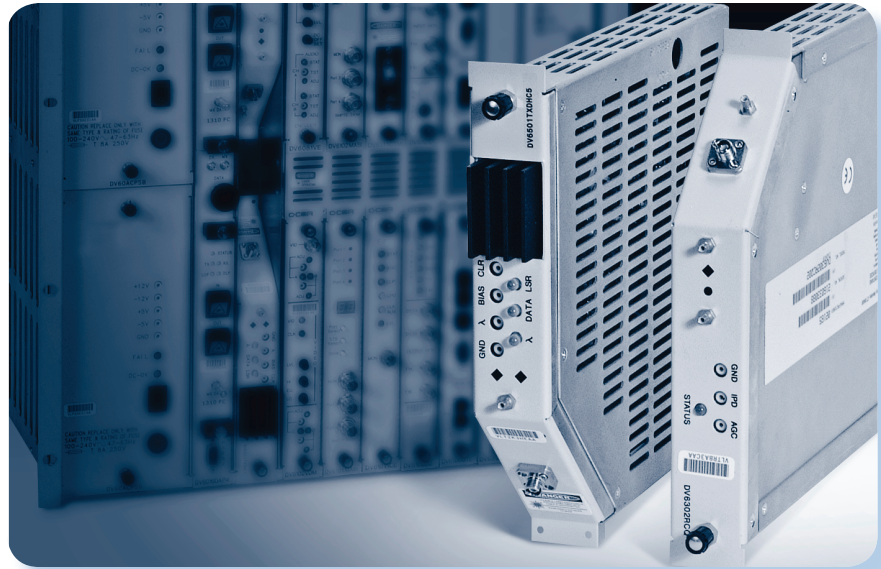


DV6000 VIDEO TRANSPORT MODULES
Transmitters, Receivers and Repeater
Transmitter and Receiver Features:

- Directly modulated DFB lasers
- Standard 1310nm and 1550nm transmitters launch with 0dBm output power
- DWDM transmitters launch with 6.5dBm output power
- ITU Grid channels 21–59 available with 100GHz spacing
- Dispersion tolerant transmission up to 3200ps/nm for DWDM transmitters³
- Optical power receive sensitivity of -30dBm



The DV6000 Product Family offers a wide range of optical transmitters and receivers that enable DV6000 digital transport networks to be designed to maximize optical performance and be interoperable with other DWDM optical systems, while still maintaining their cost effectiveness and flexibility.

The DV6000 optical modules either transmit or receive the DV6000's 2.38Gbps digital signal and are most commonly used in a DV6000 equipment shelf, although they are also used in the DV6444 Interface Gateway System, the DV6128 Synchronizer and Switch (DVSAS) System, and the DV Repeater Shelf. Together the DV6000 transmitters and receivers have an optical budget of as much as 36.5dB, enabling distances of 146km to be spanned without amplification¹. Additionally, their exceptional dispersion performance enables distances of 188km to be spanned using amplification before chromatic dispersion management is required².

DV6000 Optical Transceivers are also available for interfacing to SONET/SDH systems and in DV6000 shelves that utilize the DAP4 Controller Module.

1. Based on standard SMF-28 fiber assuming a loss of 0.25dB/km at 1550nm.
2. Based on standard SMF-28 fiber assuming 17ps/(nm·km) with ~2dB dispersion penalty incurred.
3. Dispersion penalty of ~2dB @ 3200ps/nm.

TRANSMITTERS, RECEIVERS AND REPEATER

Standard Transmitters

Bit Rate	2.38Gbps
Optical Wavelengths	1310nm, 1550nm
Laser Type	DFB
Optical Connectors	FC/UPC, SC/UPC, SC/APC (8° angle polished), FC/APC (8° angle polished)
Optical Output Power	0dBm

DWDM Transmitters

Bit Rate	2.38Gbps
Optical Wavelengths (Note 1)	ITU Grid Channels 21–59
Laser Type	DFB
Optical Connectors	FC/UPC, SC/UPC, SC/APC (8° angle polished), FC/APC (8° angle polished)
Optical Output Power	6.5dBm
Wavelength Stability	±0.05nm
Extinction Ratio	8 ± 1 min. (9dB)
Dispersion Penalty (Note 2)	~2dB @ 3200ps/nm

Receivers

Receiver Photodiode Type	InGaAsP APD
Optical Receiver Sensitivity (Note 3)	-30dBm
Optical Receiver Maximum Input Power	-12dBmNotes:

1. See ITU Grid Channel/Wavelength Table for wavelengths corresponding to ITU Grid channel numbers.

2. Based on standard SMF-28 fiber assuming a loss of 0.25dB/km at 1550nm.

3. Assuming BER of 10⁻⁹.

Specifications subject to change without notice

ITU Grid Channels/Wavelengths

ITU Channel	Wavelength	ITU Channel	Wavelength
21	1560.61nm	41	1544.53nm
22	1559.79nm	42	1543.73nm
23	1558.98nm	43	1542.94nm
24	1558.17nm	44	1542.14nm
25	1557.36nm	45	1541.35nm
26	1556.55nm	46	1540.56nm
27	1555.75nm	47	1539.77nm
28	1554.94nm	48	1538.98nm
29	1554.13nm	49	1538.19nm
30	1553.33nm	50	1537.40nm
31	1552.52nm	51	1536.61nm
32	1551.72nm	52	1535.82nm
33	1550.92nm	53	1535.04nm
34	1550.12nm	54	1534.25nm
35	1549.32nm	55	1533.47nm
36	1548.51nm	56	1532.68nm
37	1547.72nm	57	1531.90nm
38	1546.92nm	58	1531.12nm
39	1546.12nm	59	1530.33nm
40	1545.32nm		

Repeater Shelf Features

- 6RU chassis powered by two standard DV6000 Power Supplies
- Holds up to six DV6000 Optical Transmitters, Receivers, DV to SONET/SDH Optical Transceivers, or Optical Switch Modules
- Accommodates up to 3 separate DV6000 optical repeats
- Control of optical switches and network management interface provided via the Repeater Shelf Controller Module

Repeater Shelf Specifications

Dimensions (W x H x D)	19.0 x 10.5 (6 RU) x 11.0in. (48.26 x 26.67 x 27.94cm)
Maximum Shelf Capacity	Two DV6000 power supplies Six DV6000 optical modules: DV6000 optical receivers and transmitters DV to SONET/SDH optical transceivers DV6120 dual optical switch modules One repeater shelf controller module
Alarm/Data Connectors	3 RJ-11 connectors for RS-485 serial communication Minor alarm contact closure, normally open Major alarm contact closure, normally open
Setup/Monitoring	Requires repeater shelf control module

Dual Optical Switch Module Specifications

Number of Switches per Modules	2 (labeled SW1 and SW2)
Number of Inputs per Switch	2 (labeled X1/Y1 for SW1 and X2/Y2 for SW2)
Number of Outputs per Switch	1 (labeled COM)
Optical Reflectance	Better than 40dB (intrinsic)
Optical Loss (Note 1)	< 1dB
Isolation (Port X to Port Y)	> 40dB
Switching Speed	< 100ms

Note:

1. Common to active port with connectors.

Specifications subject to change without notice

TRANSMITTERS, RECEIVERS AND REPEATER

Ordering Information

Part Number	Description
DV6301TXDxxx02 (Note 1)	DV6000 Transmitter Module: 1310nm, 0dBm output.
DV6501TXDxxx02 (Note 1)	DV6000 Transmitter Module: 1550nm, 0dBm output.
DV6501TXDHCyyxxx (Notes 1, 2, 3, and 4)	DV6000 Transmitter Module: ITU DWDM Channels 21–59, 100GHz, 6.5dBm output.
DV6302RCQxxx02 (Note 1)	DV6000 Receiver Module: 1310nm/1550nm/ITU, InGaAs APD, –30dBm sensitivity.
DV6302ERCQ	DV6000 Electrical Receiver Module: Receives electrical clock and data signal.

Notes:

1. FC/UPC optical connectors are standard; specify “xx” or “xxx” only if different connector type is desired. [SC = SC/UPC, ASC = SC/APC (8° angle polished), and APC = FC/APC (8° angle polished)]
2. “yy” equals ITU DWDM channel number (21 through 59). See “ITU Grid Channels/Wavelengths” for corresponding wavelengths.
3. DV6501TXDHCyyxxx version TXs should now be used in placed of legacy DV6501TXDER version TXs.
4. DV6501TXDHCyyxxx version TXs should now be used in placed of legacy DV6501TXDHCtxxx02 (t=1–8) version TXs.

Repeater Shelf Ordering Information

Part Number	Description
DV6016RPS	DV6000 Repeater Shelf
DV6120DS (Note 1)	DV6000 Dual Optical Switch
DV6016RPC	Repeater Shelf Controller Card

Notes:

1. FC/UPC connectors are standard. Specify DV6120DSSC for SC/UPC connectors.

