

DS2000 optical distribution station is a high performance, four individual outputs node. With high output levels and performance to 862MHz, it provides an ideal platform for support of the evolving technologies and services in advanced HFC networks. Designed with full flexibility, DS2000 offers a variety of configurations which are ideal for analog and digital transmission, telephony and data services. Utilizing extensive modular design, DS2000 can meet any advanced network requirements.

DS2000 offers a complete scalable solution for opto-electronic deployment in any broadband system. Configured in sturdy, weatherproof rugged die-casting housing, suitable for strand or pedestal mounting, DS2000 operates over a wide temperature range and accepts cable powering 40~90V high-efficiency switch mode power supply. Internal RF connections are made with 75Ohm type connectors. RF test connections are standard type F.



Use of the latest technology gives DS2000 high signal quality with increased system reliability and reduced maintenance. The unit has four identical bidirectional coaxial ports. The interstage equalizer and 4 other equalizers for each port provide a solution to different network structure. DS2000 offers a wide variety of pass band options. Diplex filters are available at 35/47, 42/54 and 65/87MHz, allowing operation in virtually any cable system worldwide. All of the bi-directional ports are capable of passing power into or out of the unit. Separate attenuator and equalizer configure each of the ports. Careful design of the receiver circuit allows for a variety of channel loading of 80~110 NTSC analog channels, 59 or more PAL analog channels, or a combination of analog and digital signals.

The forward system receiver modules are compatible with either 1310nm or 1550nm signals. Each receiver utilizes a receiving module to assure optimum carrier-to-noise performance. There are also LEDs indicates the level of optical input and alarms status.



Redundancy increases the network reliability. Both DS2000-ST model and DS2000-RS (Reverse Segmented) model provide the option of redundant optical forward receiver. For DS2000-ST model, it can be also equipped with one redundant return transmitter. The plug-in return equalizer configures the signal before they enter into return transmitter.

DS2000-RS model has segmented return path which meets the growing demand for the use of return path by internet, telephony or Video on demand (VOD). It can be equipped maximum to 4 return path transmitters, one for each port.

The high output level offers the ability to optimize the coaxial plant distribution from a single node and contributes to reduced amplifier cascades, making medium to high density systems more cost effective. The performance and output levels of the node allow it to be easily integrated into any of the current system architectures.

Features

- Standardized modular design, easy for maintenance and upgrade
- Four individual high outputs up to 52dBmV
- GaAs technology guaranteeing the high performance
- SMT production guarantee the quality
- Forward equalizer per each output and one return equalizer configuration fits in various network designs
- Redundancy capability increases the stability of the network
- LEDs indication in optical receiving unit simplifies the operation
- Application of ESD and TVS technology on circuit increases the reliability

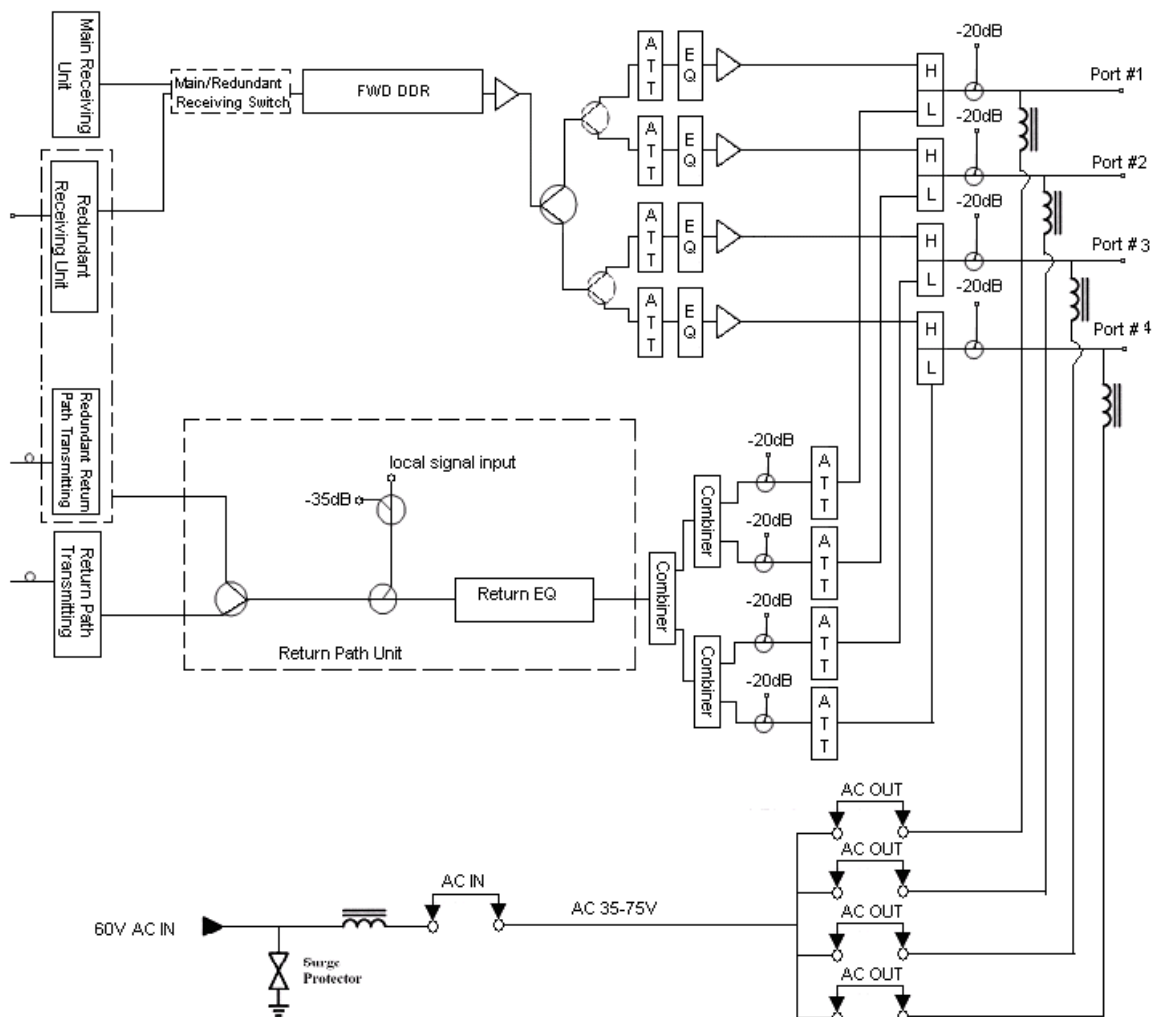


Diagram DS2000-ST

Specification

Forward Path, Optical

Optical Input Range	-5dBm to +2dBm, -1dBm nominal
Optical Wavelength	1290nm to 1600nm
Receiver Power Monitor Voltage	1V/mW
Fiber Connector	SC/APC, FC/APC
Flatness	±0.75dB
Test Points	-20±1.0dB

Return Path

Optical Return Path Transmitter	DFB	Isolated FP
RF input Power*	20-24dBmV	20-24dBmV
Optical Wavelength	1310nm ±10nm	1310nm ±10nm
Output Power	2mW	≥ 1mW
Return Loss	< -16dB	< -16dB
Flatness	±1dB	±1dB
Distortions	C/N > 51	C/N > 51
	CSO < -75	CSO < -75
	CTB < -70	CTB < -70
Fiber Connector	SC/APC, FC/APC	
Working Temperature	-20°C to +85°C	

Link Performance (@-1dB optical input, 52dBmV output, 12dB slope**)

C/N	>52dB
CTB	>65dBc
CSO	>60dBc
Frequency Response	±1.5dB

(Transmitter OMI 3.6%, carrier Loading 59 PAL analog Channels to 550MHz)

Forward Path, RF

Pass Band	54~862MHz
Flatness	±0.75dB
Return Loss	<-16dB
Output Level (@ -1dBm)	52.0dBmV/862MHz
Distortions	CTB = -74dB, CSO = -74dB
Gain Adjustment	Plug in attenuator 0-10dB, 2dB per step And plug in attenuator 0-18dB, 2dB per step
Slop Adjustment	8dB Interstage Equalizer And plug in attenuator 0-12dB, 2dB per step
Output Return Loss	< -16dB
RF impedance	75Ω
Test Points	-20±1.0dB

Return Path, RF

Pass Band	5~42MHz
Flatness	±1dB
Test Points	-20±1.0dB
Gain Adjustment	Plug in attenuator 0-10dB, 2dB per step
Slop Adjustment	Plug in equalizer 0-12dB, 2dB per step

General

AC Power	40-90V/50-60Hz
RF Connector	F
Dimensions (L x W x H)	381 mm x 231 mm x 201 mm
Weight	≤9 KGS
Operating Temperature	-40°C to +60°C
Relative Humidity	5~95%

*RF input power is usually within this range and max. 30dBmV. It varies according to the network design.

**Factory setup 12dB slope is achieved by 8dB interstage equalizer and 4dB equalizer per port.

Features

- Standardized modular design, easy for maintenance and upgrade
- Four individual high outputs up to 52dBmV
- GaAs technology guaranteeing the high performance
- SMT production guarantee the quality
- Forward equalizer per each output configuration fits in various network designs
- Forward redundancy capability increases the stability of the network
- LEDs indication in optical receiving unit simplifies the operation
- Application of ESD and TVS technology on circuit increases the reliability
- Max. configured up to 4 segmented return path transmitters

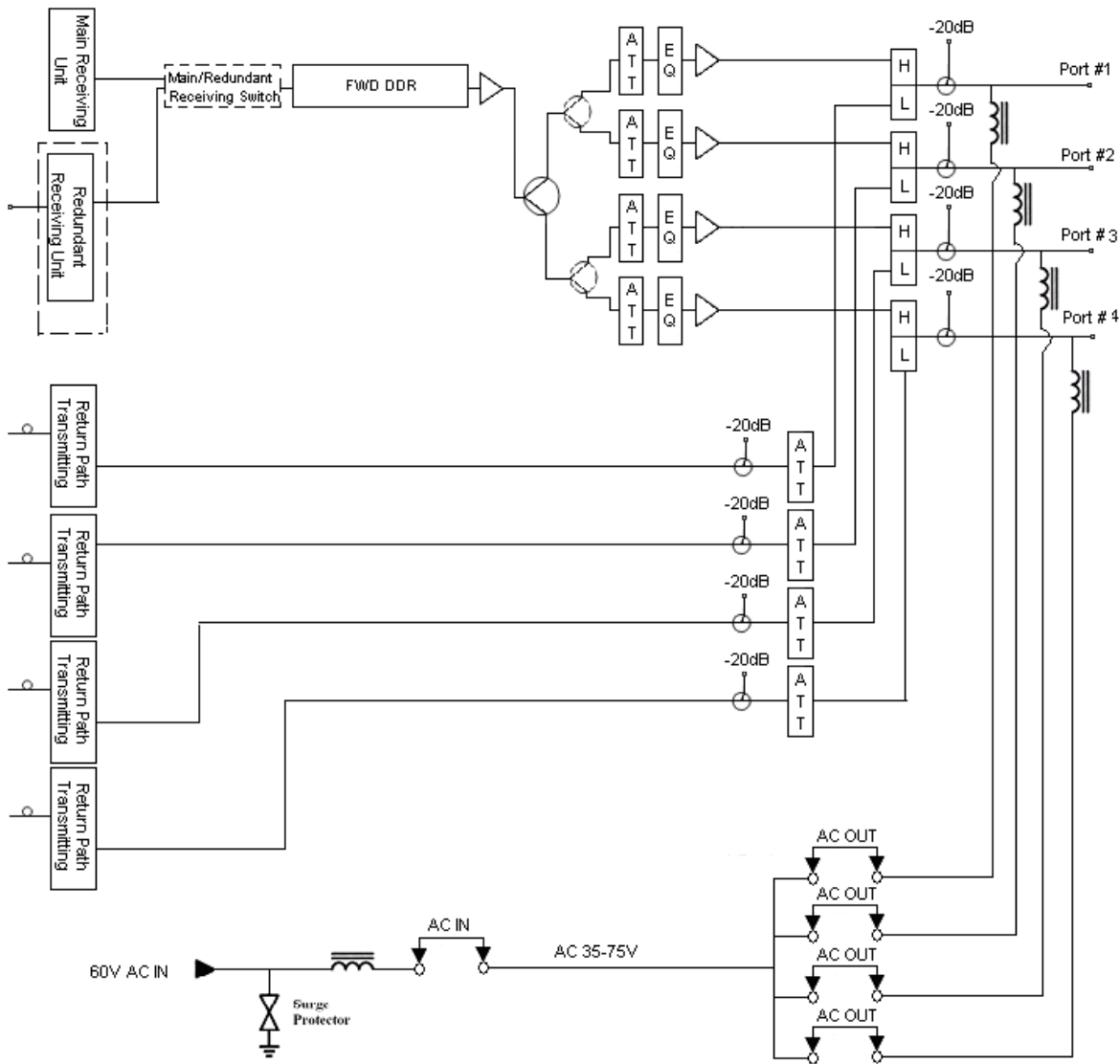


Diagram DS2000-RS

Specification

Forward Path, Optical

Optical Input Range	-5dBm to +2dBm, -1dBm nominal
Optical Wavelength	1290nm to 1600nm
Receiver Power Monitor Voltage	1V/mW
Fiber Connector	SC/APC, FC/APC
Flatness	±0.75dB
Test Points	-20±1.0dB

Return Path

Optical Return Path Transmitter	DFB	Isolated FP
RF input Power*	20-24dBmV	20-24dBmV
Optical Wavelength	1310nm ±10nm	1310nm ±10nm
Output Power	2mW	≥ 1mW
Return Loss	< -16dB	< -16dB
Flatness	±1dB	±1dB
Distortions	C/N > 51	C/N > 51
	CSO < -75	CSO < -75
	CTB < -70	CTB < -70
Fiber Connector	SC/APC, FC/APC	
Working Temperature	-20°C to +85°C	

Link Performance (@-1dB optical input, 52dBmV output, 12dB slope**)

C/N	>52dB
CTB	>65dBc
CSO	>60dBc
Frequency Response	±1.5dB

(Transmitter OMI 3.6%, carrier Loading 59 PAL analog Channels to 550MHz)

*RF input power is usually within this range and max. 30dBmV. It varies according to the network design.

**Factory setup 12dB slope is achieved by 8dB interstage equalizer and 4dB equalizer per port.

Forward Path, RF

Pass Band	54~862MHz
Flatness	±0.75dB
Return Loss	<-16dB
Output Level (@ -1dBm)	52.0dBmV/862MHz
Distortions	CTB = -74dB, CSO = -74dB
Gain Adjustment	Plug in attenuator 0-10dB, 2dB per step And plug in attenuator 0-18dB, 2dB per step
Slop Adjustment	8dB Interstage Equalizer And plug in attenuator 0-12dB, 2dB per step
Output Return Loss	< -16dB
RF impedance	75Ω
Test Points	-20±1.0dB

Return Path, RF

Pass Band	5~42MHz
Flatness	±1dB
Test Points	-20±1.0dB
Gain Adjustment	Plug in attenuator 0-10dB, 2dB per step

General

AC Power	40-90V/50-60Hz
RF Connector	F
Dimensions (L x W x H)	381 mm x 231 mm x 201 mm
Weight	9KGS
Operating Temperature	-40°C to +60°C
Relative Humidity	5~95%

Order Information:

DS2000-ST

Model Number: DS2000-ST-860-[A]-[B]-[C¹-C²]-[D]-[E]-[F]

A 1R (Single optical Rx), 2R (1 Rx + 1 redundancy Rx) **B** Hybrids: GaAs

C¹ Primary Return Path Tx

C² Secondary Tx

X No Return Path.

X No Return Path.

FP1 1 x FP Tx 1310nm, 1mW

FP1 1 x FP Tx 1310nm, 1mW

FP2 1 x FP Tx 1310nm, 2mW

FP2 1 x FP Tx 1310nm, 2mW

DFB 1 x DFB Tx 1310nm, 2mW

DFB 1 x DFB Tx 1310nm, 2mW

D Return Path Laser with Isolator: ISO, Without Isolator: X

E SC (SC/APC), FC (FC/APC) **F** Diplex Filter (MHz): 35/47, 42/54, 65/87

Example: DS2000-ST-860-1R-GA-DFB-X-ISO-SC-4254

Optical distribution station 45 ~ 862 MHz with single receiving module, GaAs hybrids, one 1310nm return transmitter 2mW isolated DFB, and 42/54 MHz diplex filter, SC/APC connector.

Note: Specific customer options are available upon request.

In the interest of continued product improvement, photographic representations, written descriptions and specifications are subject to change without notice.

DS2000-RS (Reverse Segmented)

Model Number: DS2000-RS-860-[A]-[B]-[C¹-C²-C³-C⁴]-[D]-[E]-[F]

A 1R (Single optical Rx), 2R (1 Rx + 1 redundancy Rx) **B** Hybrids: GaAs

C¹ First Return Path Transmitter

C² Second Return Path Transmitter

X No Return Path.

X No Return Path.

FP1 1 x FP Tx 1310nm, 1mW

FP1 1 x FP Tx 1310nm, 1mW

FP2 1 x FP Tx 1310nm, 2mW

FP2 1 x FP Tx 1310nm, 2mW

DFB 1 x DFB Tx 1310nm, 2mW

DFB 1 x DFB Tx 1310nm, 2mW

C³ Third Return Path Transmitter

C⁴ Fourth Return Path Transmitter

X No Return Path.

X No Return Path.

FP1 1 x FP Tx 1310nm, 1mW

FP1 1 x FP Tx 1310nm, 1mW

FP2 1 x FP Tx 1310nm, 2mW

FP2 1 x FP Tx 1310nm, 2mW

DFB 1 x DFB Tx 1310nm, 2mW

DFB 1 x DFB Tx 1310nm, 2mW

D Return Path Laser with Isolator: ISO, Without Isolator: X

E SC (SC/APC), FC (FC/APC) **F** Diplex Filter (MHz): 35/47, 42/54, 65/87

Example: DS2000-RS-860-1R-GA-DFB-DFB-DFB-DFB-ISO-SC-4254

Optical distribution station 45 ~ 862 MHz with single receiving module, GaAs hybrids, reverse segmented with four (4) 1310nm return transmitters isolated DFB 2mW, and 42/54 MHz diplex filter, SC/APC connector.

Note: Specific customer options are available upon request.

In the interest of continued product improvement, photographic representations, written descriptions and specifications are subject to change without notice.