

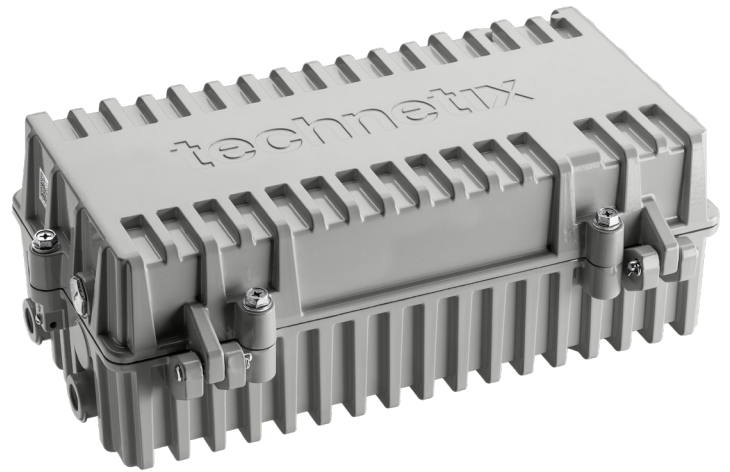
DBx smart RF amplifiers

DBE-1200S smart RF amplifier

triple active output

technetix

- DOCSIS 3.1 (1.2 GHz/204 MHz) ready
- Forward path gain up to 44 dB and return path gain up to 27 dB
- Full electronic smart control and setup via software tools
- Modular, field upgradeable, power-efficient design
- Remote diagnostic via DOCSIS transponder



DBx Open Access Platform

The Technetix DBx-1200 is a compact modular open access platform which supports both amplifier, node and Remote PHY/MAC-PHY configurations. Its modularity means that the platform can be field upgraded throughout its lifecycle and is not limited purely to higher diplex splits but can evolve with your network. Using CPD Safe™ technology means fewer reported faults, improved customer service and a reduction in truck rolls. The platform has an IP68 rating which enables deployments in challenging outdoor environments. The DBx platform has an unmatched Total Cost of Ownership (TCO) in the industry.

DBE-1200S

The Technetix DBE-1200S amplifier has a triple active output that can be configured for use as a single, double or triple output device (by placing dedicated downstream module with up to 44 dB gain and upstream module up to 27 dB gain). The DBE-1200S supports different applications, the exact performance and configuration depend on the modules that are equipped. The unit can be powered from any RF port and is suitable for aerial or underground application.

Smart configuration

The controller module enables digital control of all settings using a USB port or an optional DOCSIS transponder for remote control and monitoring. An ingress detection switch

can be set remotely via an FSK protocol. With an integrated agile AGC/ALSC functionality it keeps the network stable during extreme temperature changes. Software tools used to set-up and control the platform are BLL (Windows), BLA (Android) and t-box which enables wireless access.

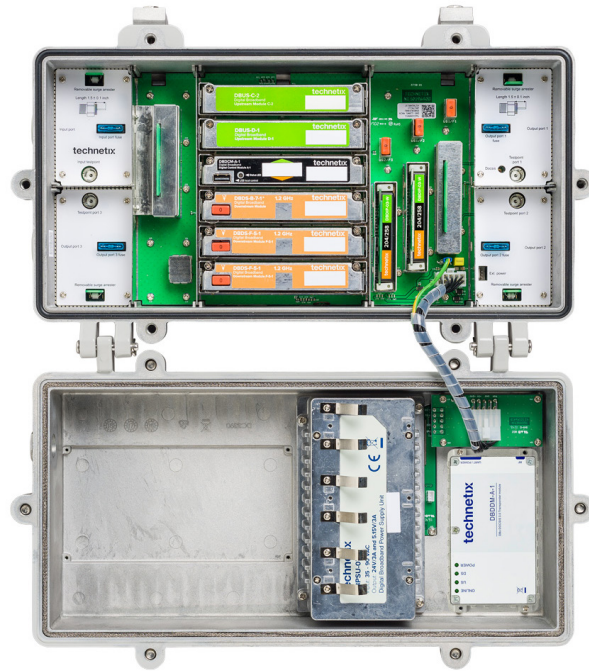
Node transformation

An operational DBE-1200 amplifier can be converted to a 1x1 node in 10 minutes by placing a fiber tray and a fiber gland in the lid. Then swap the downstream module with an optical receiver and the upstream module with an optical transmitter. The laser wavelength can be any standard wavelength and includes the CWDM grid. The laser boards in the optical transmitter module can easily be swapped in the field.

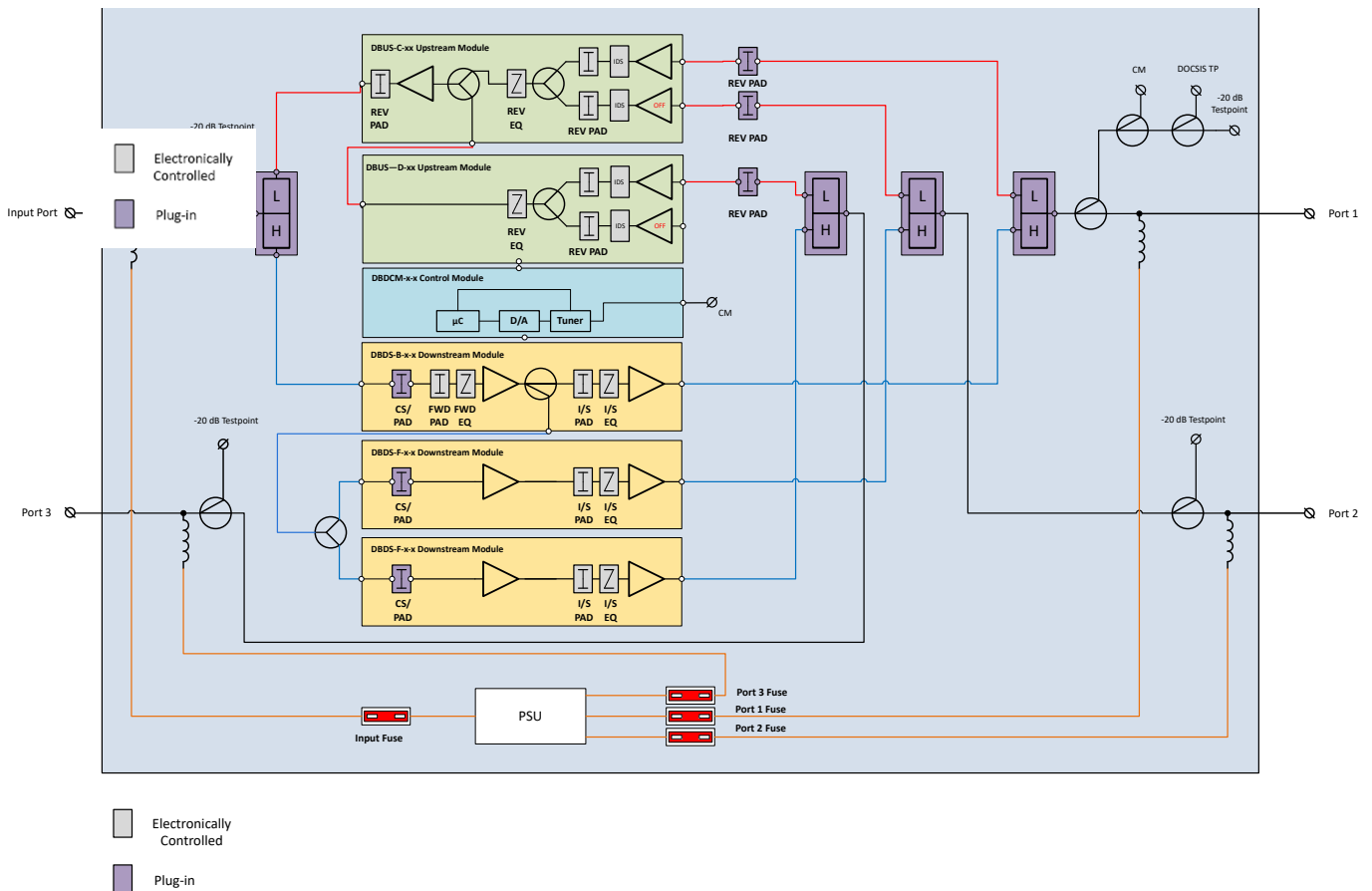
Green solution

The DBx family uses highly efficient power supplies to reduce power consumption while maintaining high reliability figures. Due to the modular approach newer technology can be introduced to the platform which further reduces power consumption. Our modules have a configurable low power mode for less demanding applications. As the platform can grow with your needs and modules are compatible across the platform, there is less waste when using the DBx portfolio.

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Block diagram RF configuration



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DBE device and performance specifications

Specification	Forward path	Return path	Value
Pass band (dependent on diplex filter)	54-1218	5-204	MHz
Active outputs	3	3	
Frequency response ⁽¹⁾	±0.75	±0.5	dB
Operational Gain ⁽⁷⁾	44	27	dB
Return loss ⁽²⁾	18	16	dB
Noise figure (with zero dB attenuation) ⁽⁹⁾	9	6.5	dB
Operating output level ⁽⁸⁾	>49 (109)		dBmV (dBμV)
Attenuation control (electronic) pre-stage ⁽⁶⁾	0-20	0-20	dB
EQ control (electronic) pre-stage ⁽⁶⁾	0-18		dB
Attenuation control (electronic) inter-stage ⁽⁶⁾	0-15		dB
EQ control (electronic) inter-stage ⁽⁶⁾	0-15	0-15	dB
Input test point ⁽⁵⁾	-20 ±1.5		dB
Output test-points	-20 ±1		dB
Reverse gain 24 dB NPR 5-65 MHz NPR 5-204 MHz		>50 dB: 24 dB dynamic range >50 dB: 21 dB dynamic range	
Reverse gain 27 dB NPR 5-65 MHz NPR 5-204 MHz		>50 dB: 20 dB dynamic range >50 dB: 16 dB dynamic range	
Ingress detection switches		0/6/40(off)	dB

General specifications	DBE-1200S	Units
Hum modulation ⁽⁴⁾	-65 dBc at 15 A	
Class of enclosure	IP68 IEC 60529 2.1 at 1-2 meters underwater	
ESD	ANSI/SCTE 186 4 kV EN 61000-4-2:2008	
Surge protection	ANSI/SCTE 81; C62.41 CAT. C3 6 kV IEEE C62.41 CAT C3	
EMC	FCC CFR 47 part 15:2013 EN 50083-2:2012	
Safety	ANSI/UL-60950-1 EN 60728-11:2011	
Test points	F-Female	
Operating voltage	30-65 VAC sine wave, 42-90 VAC quasi-square wave	
Power consumption ⁽³⁾	47	W
AC bypass and capacity & input	15	A
Operating temperature range	-40 to +65	°C
	-40 to +149	°F
Housing dimensions	10.31 x 17.20 x 5.78	inch
	262 x 437 x 147	mm
Coaxial connections	PG11 or 5/8"	
Housing finish	Painted conductive chromate finish	
Impedance	75	Ω
Equipment approval	CE/RoHS/FCC	

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Ordering information

Category	Item code	Type	Description
Upstream RF modules	19008429	DBUS-C-1	Main module: 204 MHz upstream amplifier 25 dB gain and IDS
	19013960	DBUS-C-2	Main module: 204 MHz upstream amplifier 28 dB gain and IDS
	19008430	DBUS-D-1	Bridge: DBx upstream module 28 dB max., 204 MHz
Downstream RF modules	19009835	DBDS-B-7-1	Main: 1.2 GHz downstream amplifier 44 dB - I2 C - 52 dBmV output
	19010488	DBDS-B-7-ET	Main: 1.2 GHz downstream amplifier 44 dB - I2 C - 52 dBmV output with extended tilt
	19009834	DBDS-F-5-1	Bridge: 1.2 GHz downstream amplifier 44 dB - I2 C
Digital control and monitoring	19005026	DBDCM-A-1	Control module: AGC/ALSC, FSK, USB-A
	19005027	DBDCM-B-2	Control module: AGC/ALSC, DOCSIS transponder compatible, USB-A
	19005029	DBDDM-A-1	DOCSIS 3.0 transponder, requires DBDCM-B-2
	19010542	DBDDM-B-1	EuroDOCSIS 3.0 transponder, requires DBDCM-B-2
Diplex filters	19005033	DBDIP-01	65/85 MHz diplexer
	19005034	DBDIP-02	85/105 MHz diplexer
	19007125	DBDIP-03	204/258 MHz diplexer
	19006341	DBDIP-04	42/54 MHz diplexer
	19010377	DBDIP-05	85/102 MHz diplexer
	19012966	DBDIP-05-5	85/102 MHz diplexer with 5 dB insertion loss in Downstream
Termination module	19008482	DBTM-T-1	75 Ω termination module
Standard configuration	19014359	DBESCONF5CH04	DBE-1200S, 204/258 MHz, CM-B-2, B-7-1, C-2

Remarks:

1. Aligned with 20 dB coax, add ± 0.5 dB (typical) for port 2 and 3.
2. At 40 MHz, deduct 1.5 dB per octave (never worse than 12 dB).
3. Typical, without DOCSIS transponder @50 VAC. Detailed information is shown on the powering data table.
4. Max value up to 1 GHz. From 1 GHz to 1.2 GHz max value -60 dB.
5. Measured with 22 dB ATT JXP in DS 1 module.
6. Max EQ value in inter-stage. There is a 18 dB EQ available in pre-stage controlled electronically. Reference output tilt for:
 - a. 1218-54 MHz is 18 dB
 - b. 1218-204 MHz is 15 dB
7. Forward gain measured with 0 dB input EQ and 0 dB input attenuator. Port 1 has thermal back-off +1.5 dB, Port 2 has thermal back-off +3 dB and port 3 has thermal back-off +2 dB. Additional back-off is available and is configured via software tools.
8. All digital loading. 49 dBmV QAM at 1218 MHz, 18 dB tilt to 54 MHz. Operational minimum input level at 1218 MHz is 6 dBmV/channel.
9. At port 2 & 3 the noise figure is one dB higher due to internal DC tap.

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Powering data for DBE-1200S triple active output

Wave	Parameter	AC Voltage - Frequency 47 - 63 Hz										
Quasi-Square	V	42	45	50	55	60	65	70	75	80	85	90
	A	1.110	1.033	0.928	0.844	0.775	0.718	0.671	0.631	0.596	0.566	0.541
	W	46.6	46.5	46.4	46.4	46.5	46.7	47	47.3	47.7	48.1	48.7

NPR of DBE-1200S triple active output for different band splits

