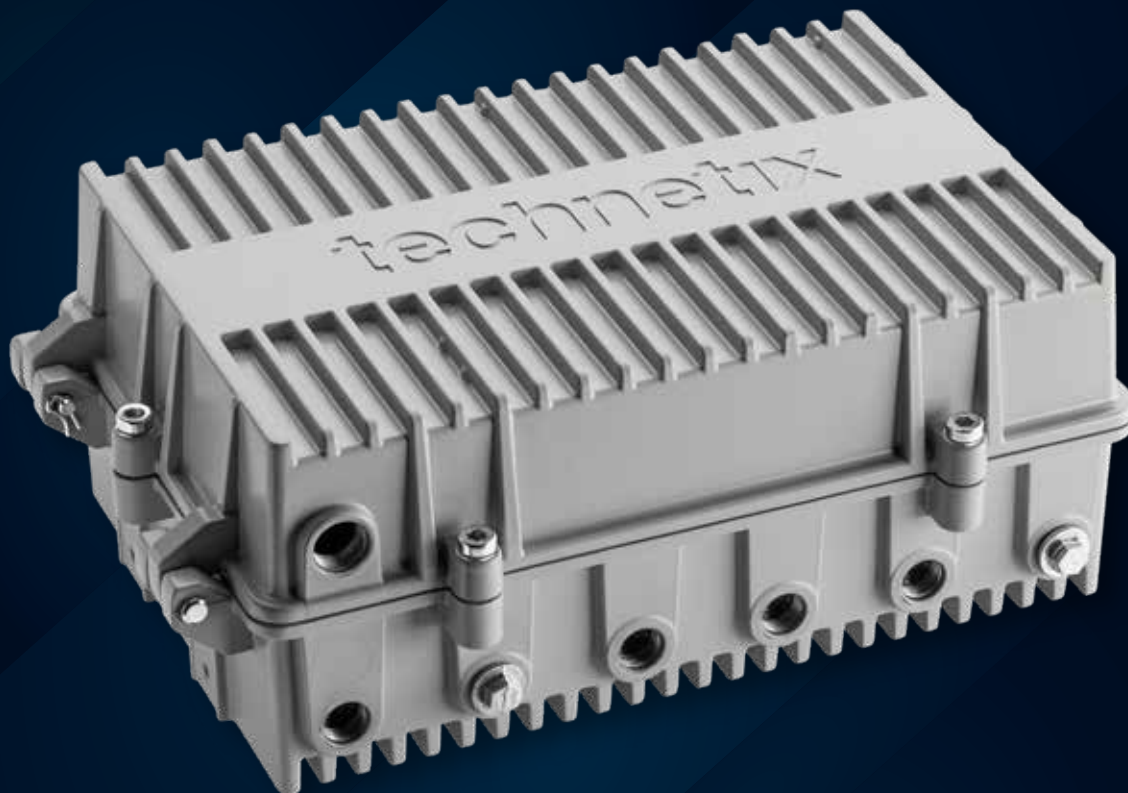




DBx

World leading access platform



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Flexible, simple to use and future-proof **DBx node and amplifier solutions**



TECHNETIX DBx access platform

The Technetix DBx-1200 access platform is an innovative modular design with a wide range of RF amplifiers, optical nodes and Remote PHY nodes.

With over half a million units deployed worldwide, DBx is the world leading access platform in the market today.

Flexibility

The industrial standard DBx platform comes with a modular configuration, allowing for future retrofits and network upgrades with plug and play components. Improving the longevity and flexibility of HFC networks, operators can decide to change RF and optical modules or upgrade to Remote PHY nodes as network architectures evolve.

Power saving

To stay competitive, service providers are increasing bandwidth to improve service performance. The DBx platform allows operators to use the right amplifier modules with the correct gain, use high efficiency PSU in active devices and reduce the current through the hybrids during off-peak times, bringing savings of up to 40% (344 kWh) per year, per amplifier.

Plug and play Remote PHY upgrade

Remote PHY (R-PHY) technology enables the up- and downstream relocation of traditional headend elements, generating 10 Gbps of data on a remote location to operators seeking to extend the capacity of their coax networks. R-PHY is ready for deployment in existing DBx infrastructure or directly enabled in DBx R-PHY nodes and amplifiers.

DBx Product Family

Type	Housing style	Active/passive RF outputs	Optical configuration
DBC-1200	Cabinet	1/2	1 x 1
DBC-1200S	Strand	1/2	1 x 1
DBD-1200	Cabinet	2/3	Up to 2 x 2 or hybrid RF mix
DBE-1200	Cabinet	4/4	Up to 4 x 4 or hybrid RF mix
DBE-1200S	Strand	3/3	Up to 3 x 3 or hybrid RF mix



DBC-1200



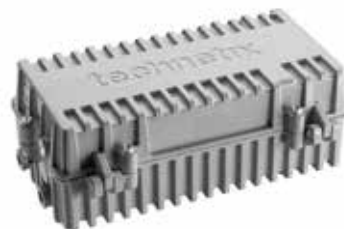
DBD-1200



DBE-1200



DBC-1200S



DBE-1200S

Platform features

- DOCSIS 3.1 compliant upstream and downstream
- Full modular design
- Power efficient
- Field upgradeable diplex filters offered in 42/54, 65/85, 85/102, 85/105, 204/258 MHz band splits
- Latest GaN technology with high output power
- Optional on-board EU/US DOCSIS 3.0 transponders

RF features

- Full digital control of equalisers and attenuators in both upstream and downstream
- On-board ingress detection switches in upstream modules for each individual leg
- Wide selection of RF modules for all network applications

Optical features

- Upstream lasers in 1310, 1550 and CWDM
- Wide range of optical input power in downstream receiver -6 dBm to +1 dBm including optical AGC
- Power efficient
- On-board ingress detection switches in upstream transmitter

Business benefits

- Lowest power consumption in the industry
- Latest GaN technology ensures a future-proof solution for digital loading
- Wide range of RF and optical modules tailored to your network
- Future upgrades to include D-OLT, Wi-Fi support, Virtual Segmentation™ support modules
- DOCSIS 3.1 today through RF amplifiers, optical nodes or RPD nodes



2x active RF configuration



***Optical 2 x 2 configuration**

*with the DOCSIS 3.0 transponder option installed



Remote PHY 1 x 2 configuration

DBx Flexibility

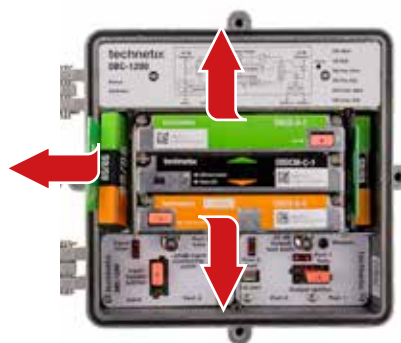
the modular platform that allows the migration of an RF amplifier to a fibre node and also to a Remote PHY and FTTx access gateway

Six steps to upgrade an RF amplifier to an optical node in less than 10 minutes:

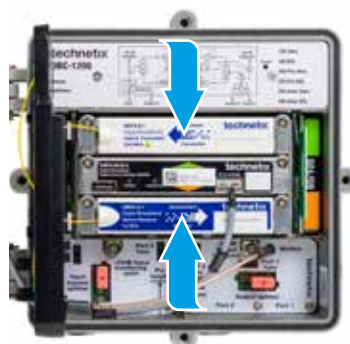
01**1
min**

Open the amplifier, remove the RF modules and insert the diplex filter (modules can be reused in other amplifiers). If an input splitter/tap is installed, this can be removed at this stage as well.

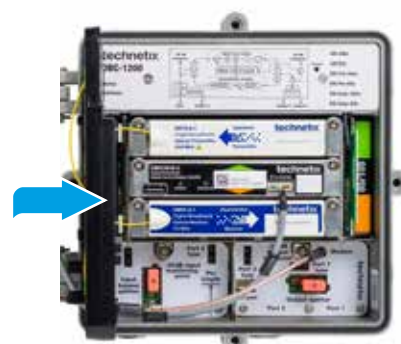
Note: all procedures can be executed while the amplifier is powered up.

**02****2
min**

Insert the optical receiver module into the bottom slot (replacing the RF forward amplifier) and the upstream transmitter into the top slot (replacing the return amplifier).

**03****3
min**

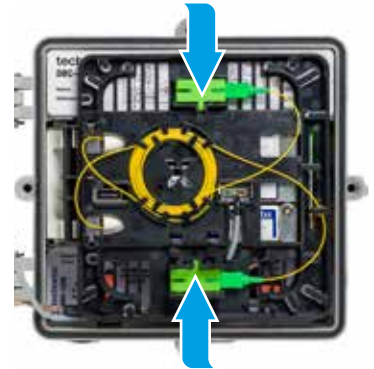
Install the fibre tray in the position of the input diplex filter and secure it with a screw.



04



The incoming fibre needs to be inserted into the amplifier through the lid port (16 mm thread). Ensure the cable is securely fitted inside the clips.



05



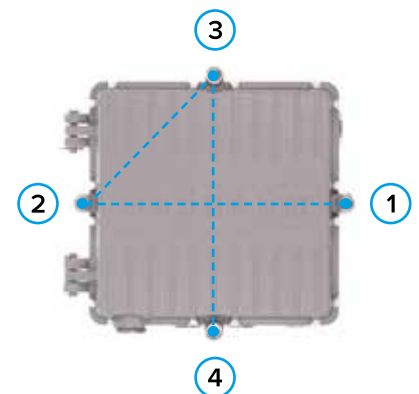
Connect the USB cable to the digital control module and configure the settings using the DBx software. All the settings for the optical module can be executed with the same configuration as an RF amplifier.



06



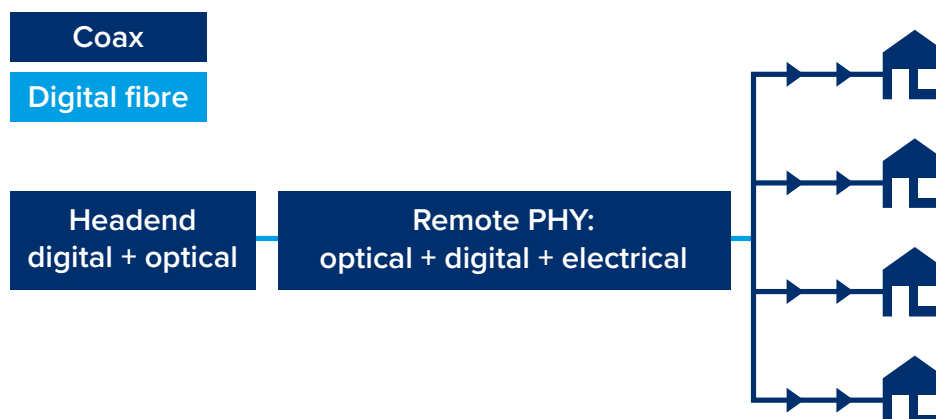
Close the amplifier lid, ensuring all the bolts are secured correctly (in the order as shown on the right). The upgrade of the amplifier to an optical fibre node is now complete.



DBx Future-proof

the platform grows with the needs of operators and different architectures

The requirement for increased speed and capacity has pushed the broadband cable industry into developing a faster and higher capacity network. The Technetix DBx platform is perfectly suited to adapt to these demands and give operators the opportunity to evolve their business. **Extended bandwidth, higher modulation schemes and innovative network designs** have been incorporated into the current network, improving the longevity and flexibility of HFC networks.



DBx Remote PHY for Distributed Access Architecture

A Distributed Access Architecture (DAA) is designed to move several elements related to the physical layer (PHY) from the headend to the access network. By pushing these elements deeper into the network to the Remote PHY device (RPD), the best possible quality signal can be generated whilst space reduction in the headend is achieved.

While the technology has been part of the DOCSIS 3.1 standard since the release of the requirement specification, there are issues in the network that still need to be overcome. Available power, space and the size of existing street cabinets considerably limit the number of options available to operators seeking to deploy this next step in the evolution of their networks. The DBx platform allows you to upgrade existing DBx nodes and amplifiers into Remote PHY nodes.

A game of numbers: power and deployment cost savings with DBx Remote PHY

The 1x1 DBx R-PHY configuration typically consumes as little as 51W and a simple lid upgrade is all it takes to change a deployed DBx amplifier or node into an R-PHY device. Each lid comes with dedicated cabling and a power supply to feed the R-PHY and R-PHY inserter modules. Those in turn connect the RF feed to the DBx mainboard. This solution is a major step towards 10 Gb capable networks and the quickest route to a Distributed Access Architecture.

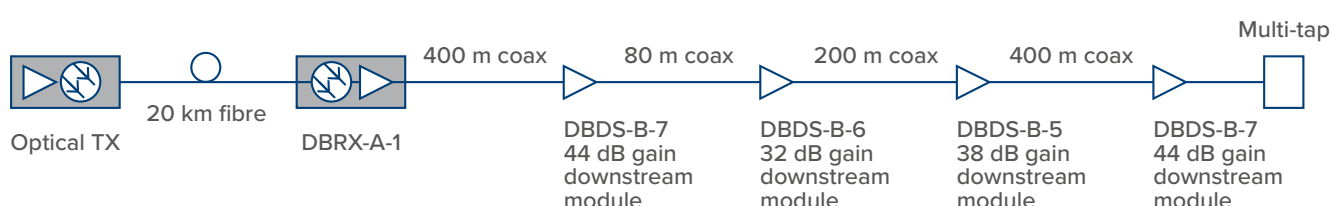
Remote PHY modules

19012173	DBRPDI-A-1	Remote PHY inserter module
19012333	DBUS-RPD-1	Remote PHY upstream module for 1x1 or 1x2 applications
19012331	DBDS-RPD-1	Remote PHY high performance downstream module
19012332	DBRX-RPD-1	Remote PHY analogue overlay module
19012171	DBRPDI-FT-A-1	Remote PHY fibre tray for DBx

DBx RF configurations

The DBx RF modules are designed around both star and cascade networks. Using dedicated downstream gain modules for a cascade application allows you to customise your network. For exceptionally long cascade networks, dedicated flatness correction plug-in modules are available to optimise the overall frequency response. Fixed deviation in frequency response accumulates in cascade networks and it is recommended that the flatness correction plug-in is used for optimal network performance after five amplifiers.

Improved efficiencies through tailored configurations of downstream modules gain in an N+4 scenario



When installing high-gain modules (ie 44 dB) in shorter cable length applications, you have to attenuate more signal after amplification. Using lower-gain modules keeps attenuation requirements to an absolute minimum, resulting in better network performance.

The Technetix DBx amplifier gain downstream modules are pre-aligned with 20 dB coax, other amplifiers are aligned with 0 dB coax and therefore, the flatness in frequency response is aligned further from the actual application. DBx amplifiers are pre-aligned with coax, improving overall network performance.

RF modules

Category	Type	Description
Upstream modules	DBUS-C-1	Main module: 204 MHz upstream amplifier 26 dB gain and IDS
	DBUS-D-1	Bridger module: 204 MHz upstream amplifier 26 dB gain and IDS
Downstream modules	DBDS-B-5-1	Main: 1.2 GHz downstream amplifier 38 dB
	DBDS-B-6-1	Main: 1.2 GHz downstream amplifier 32 dB
	DBDS-B-7-1	Main: 1.2 GHz downstream amplifier 44 dB - 52 dBmV output
	DBDS-B-7-ET	Main: 1.2 GHz downstream amplifier 44 dB - ET: 25 dB tilt 12 C - 52 dBmV output
	DBDS-F-5-1	Bridger: 1.2 GHz downstream amplifier 44 dB - 52 dBmV output

DBx optical configurations

The optical transmitter and receiver modules are deployed in scenarios where the DBx is used as an optical fibre node. The optical receiver has a wide optical range, which spans from -6 dBm to +1 dBm, suitable for any application. The receiver module is equipped with the latest GaN 2.5 technology for maximum output power.



DBTX-A-1



DBRX-A-1

The transmitter module can hold two laser boards with standard 1310 nm/1550 nm/CWDM wavelengths in -3/0/3/6 dBm output power. The laser boards are available in DFB and CWDM and by default, these are supplied with SC/APC connectors (available as small plug-in modules). The DBRX optical receiver can receive any type of optical signal from 1100 to 1650 nm, in both CWDM and DWDM configuration.

Additional application boards available:

- Bypass boards (DBLB-BP) in a 1 x 1 DBC configuration terminating the second port in the transmitter
- Combiner boards (DBLB-CB) in a DBD/DBE unit when using a hybrid RF/optical configuration, combining the upstream feed of two downstream modules over one upstream laser



DBx optical configuration options

# of DBRX-A-1	1	2	1	2	3	1-4
# of DBTX-A-1	1	1	1	2	2	2
DBC	1					
DBD	2	2	2	2		
DBE	3	4	3	4	4	4*
DBC-S	1					
DBE-S	3	3	3	3	3	

The numbers in the table indicate the number of usable active output ports in a given optical configuration.

*Production 10/2016 or later.

Ordering information

Optical modules

Order number	Modules	Description
19008435	DBRX-A-1	Optical 1.2 GHz downstream receiver, 52 dBmV output
19008438	DBTX-A-1	Optical upstream transmitter module, holds up to 2 DBLB optical transmitters

Optical plug-in boards for DBTX

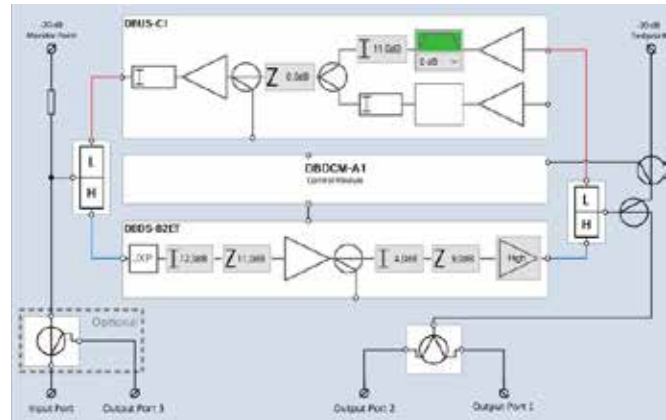
Order number	Boards	Description
19010322	DBLB-31-3D-1	Optical 204 MHz transmitter plug-in, 1310 nm, DFB, 3 dBm output, SC/APC
19010323	DBLB-55-3D-1	Optical 204 MHz transmitter plug-in, 1550 nm, DFB, 3 dBm output, SC/APC
19010324	DBLB-C27-3D-1	Optical 204 MHz CWDM transmitter plug-in, 1271 nm, DFB, 3 dBm output, SC/APC
19010325	DBLB-C29-3D-1	Optical 204 MHz CWDM transmitter plug-in, 1291 nm, DFB, 3 dBm output, SC/APC
19010326	DBLB-C31-3D-1	Optical 204 MHz CWDM transmitter plug-in, 1331 nm, DFB, 3 dBm output, SC/APC
19010327	DBLB-C33-3D-1	Optical 204 MHz CWDM transmitter plug-in, 1331 nm, DFB, 3 dBm output, SC/APC
19010328	DBLB-C35-3D-1	Optical 204 MHz CWDM transmitter plug-in, 1351 nm, DFB, 3 dBm output, SC/APC
19010329	DBLB-C43-3D-1	Optical 204 MHz CWDM transmitter plug-in, 1431 nm, DFB, 3 dBm output, SC/APC
19010330	DBLB-C45-3D-1	Optical 204 MHz CWDM transmitter plug-in, 1451 nm, DFB, 3 dBm output, SC/APC
19010331	DBLB-C47-3D-1	Optical 204 MHz CWDM transmitter plug-in, 1471 nm, DFB, 3 dBm output, SC/APC
19010332	DBLB-C49-3D-1	Optical 204 MHz CWDM transmitter plug-in, 1491 nm, DFB, 3 dBm output, SC/APC
19010333	DBLB-C51-3D-1	Optical 204 MHz CWDM transmitter plug-in, 1511 nm, DFB, 3 dBm output, SC/APC
19010334	DBLB-C53-3D-1	Optical 204 MHz CWDM transmitter plug-in, 1531nm, DFB, 3 dBm output, SC/APC
19010335	DBLB-C55-3D-1	Optical 204 MHz CWDM transmitter plug-in, 1551 nm, DFB, 3 dBm output, SC/APC
19010336	DBLB-C57-3D-1	Optical 204 MHz CWDM transmitter plug-in, 1571 nm, DFB, 3 dBm output, SC/APC
19010337	DBLB-C59-3D-1	Optical 204 MHz CWDM transmitter plug-in, 1591 nm, DFB, 3 dBm output, SC/APC
19010338	DBLB-C61-3D-1	Optical 204 MHz CWDM transmitter plug-in, 1611 nm, DFB, 3 dBm output, SC/APC
19010339	DBLB-BP-1	Bypass laser board for DBTX-A-1 (second slot if no laser installed)
19010340	DBLB-CB-1	Combiner board to combine two upstream RF signals into a single laser

Intelligent digital controls

Monitoring and control

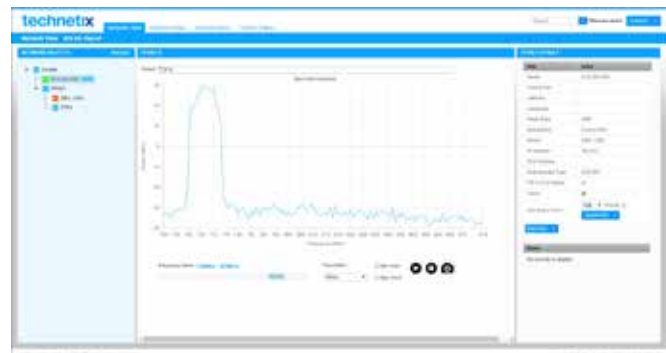
The DBx platform offers flexibility with electronically adjustable equalisers and attenuators in both upstream and downstream amplifiers. The downstream modules have both pre-stage and inter-stage equalisation and attenuation to compensate for cable loss prior to the amplifier and to also provide a boost for the output cable. These values can be adjusted locally with BLL software or remotely with the DOCSIS 3.0 transponder.

The BLL software has a user-friendly interface; by using the amplifier block diagram or the menu on the right of the screen, the amplifier can be adjusted locally to the correct settings and configuration. The diplex split type and end frequency can be specified in the software. The FSK settings can also be adjusted locally or remotely.



TxNMS software

The TxNMS software is available as a stand alone management system to control both the DBx ingress detection switches and DOCSIS 3.0 transponder. It is also available as an API for NMS (Network Management System) integration. When the FSK module is installed in the DBx series, the TxNMS software can remotely switch the on-board 'ingress detection switches' using an FSK carrier generated by the PRG-122 headend controller.



Remote Ingress Control

Attenuation of 0 dB, 6 dB or 40 dB can be remotely applied in the upstream when ingress is detected and can also identify where the issue has occurred for quick repair and service restoration.

DBDCM-A-1 FSK control module

The DBDCM-A-1 module has an embedded FSK tuner, which can be used for remote single-directional communication with an amplifier. A dedicated headend controller (PRG-122), set on a requested frequency, enables the TxNMS software to detect ingress switches in upstream modules with 6 or 40 dB. This determines the source of the ingress and specifies the location for truck rolls.

The FSK commands can also be used to adjust temperature compensation methods. The FSK module supports three types of temperature compensation:

Automatic Temperature Compensation (ATC)

The ATC function of the amplifier is installed in the digital control module. The DBx amplifiers have been tested in all thermal circumstances within range and corrections to temperature deviations were calculated and installed in a fixed temperature table within the digital control module. This ensures that the optimum corrections are made when the temperature fluctuates within an amplifier. When you are not using AGC/ALSC, this function is automatically active.

Automatic Gain Control (AGC)

AGC functionality is an internal feature that maintains a controlled signal amplitude at its output despite any possible variation in amplitude of the input signal. The average or peak output signal level is used to dynamically adjust the input-to-output gain to a suitable level, enabling the circuit to work with a greater range of input signal levels.

The AGC corrects both the internal temperature variation and the variation on the input of the amplifier. This is done by measuring the output level from the amplifier

via one pilot frequency. If the level deviates from the set target, the AGC edits the internal attenuation switches until the output level is close enough to the target level.

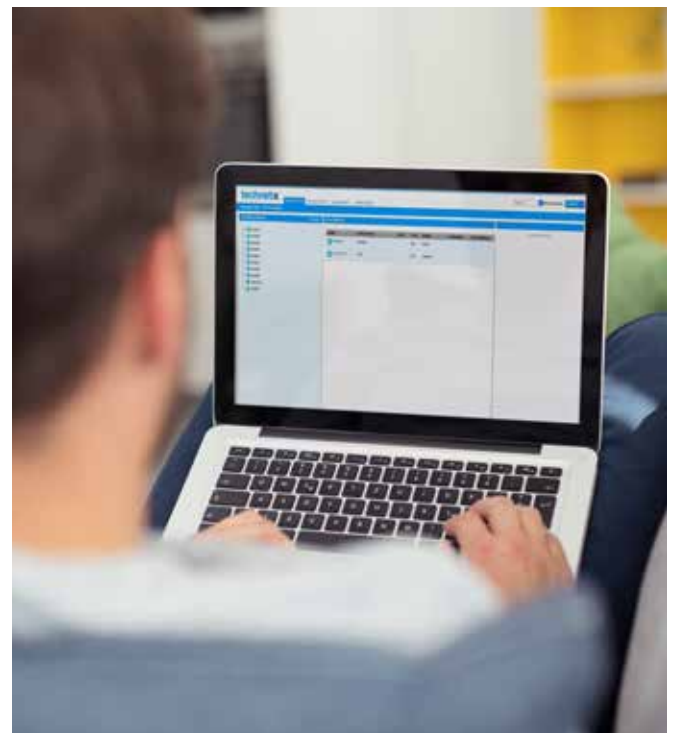
Automatic Level Slope Control (ALSC)

The most advanced option for correction is the ALSC. In addition to the AGC, the ALSC uses equalisers to correct the difference in attenuation between high and low frequencies.

The ALSC function in the DBx amplifier range measures the deviation of the set point against the pilot. The amplifier uses this information to identify the scenario and establish the best course of action.

The gain over temperature is corrected by the ALSC, it also carries out cable compensation as well as temperature corrections. Temperature compensation is therefore a pre-described offset for gain. The pre-described offset is based on temperature measurements in a climate chamber.

ALSC measures the actual output level on a pre-described time schedule; this can be indicated as a closed measurement loop.



DOCSIS 3.0 transponder

The DOCSIS 3.0 transponder option offers full remote control of the amplifier through DOCSIS commands. The DOCSIS 3.0 transponder is available in Euro and US DOCSIS, enabling remote monitoring of the RF parameters, AGC/ALSC levels and amplifier temperature. The DOCSIS transponder can send SNMP alarms based on applied thresholds; it also comes with an on-board spectrum analyser. This is the ultimate by-directional communication and monitoring addition to the DBx platform. The DOCSIS 3.0 transponder is connected to the dedicated DBDCM-B-2 DOCSIS control module in the amplifier and the modem connection port. The on-board ingress detection switches can also be switched remotely with the DOCSIS transponder without additional headend equipment.

Features:

- DOCSIS 3.0 compliant transponder module
- Remote monitoring and control of any DBx-1200(s) amplifier
- RF parameters such as gain, tilt and ingress detection switches
- AGC/ALSC levels
- RF levels
- Temperature, voltage
- Alarm settings and generation (SNMP alarms)
- Optical received power
- Amplifier configuration
- SNMP interface to network management system
- Usable with 42/54, 65/85, 85/102 and 204/258 MHz band splits
- Downstream frequency range 108-1002 MHz
- Upstream frequency range 5-83 MHz
- Firmware remotely upgradeable
- Manage optical redundancy



DBDDM-A-1 DOCSIS transponder



DBDDM-B-1 Euro DOCSIS transponder

DOCSIS 3.0 transponder metrics

The following metrics can be read and set (where applicable) from the DBx device through the DOCSIS transponder SNMP interface.

Note: Not all settings can be changed directly via SNMP. Technetix BLL software is required to obtain full control over the amplifier via the DOCSIS transponder.

RF:

- Attenuator settings
- Equaliser settings
- Ingress detection switches
- Upstream amplifier on/off switch for the upstream module(s)
- Hi/low power level of the end amplifier stage in the downstream module(s)
- AGC levels for the downstream module
- ALSC levels for the downstream module
- Actual downstream power level at a given frequency

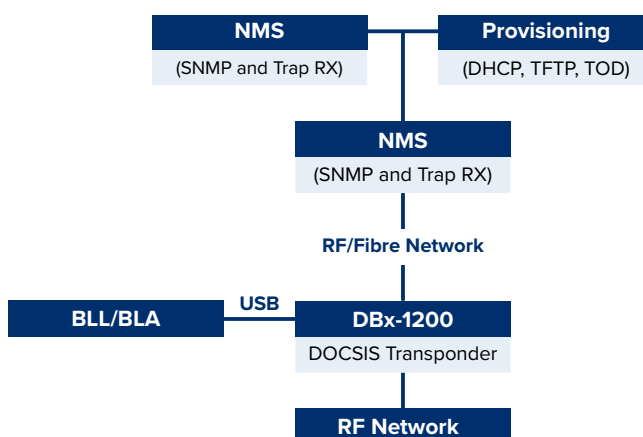
Optical:

- Receive power of the optical receiver module(s)
- Transmit power of the optical transmitter module(s)

Miscellaneous:

- Amplifier temperature
- Alarm level for device temperature
- Voltage from +5 and +24 VDC power supply
- Alarm levels for power supply voltages

System level diagram:



User interface

	Description	Specifications	Conditions/comments
Connectors	DS and US RF connectors	SMB 75 Ohm	
	CIN connector	SFP+ cage	
LEDs	System LED	Green/red	Support in R-OSSI spec
	D-RF LED	Green	
	U-RF LED	Green	
	3 x Links active per SFP	Green	

All other specifications in line with DBx platform specifications

Ordering information

RF amplifier configurations

Item code	Description
DBC-1200	DBC-1200 cabinet RF amplifier, 1.2 GHz 65/85 MHz, single output, FSK
DBD-1200	DBD-1200 cabinet RF amplifier, 1.2 GHz 65/85 MHz, dual active output, FSK
DBE-1200	DBE-1200 cabinet RF amplifier, 1.2 GHz 65/85 MHz, triple output, FSK
DBC-1200S	DBC-1200S strand-mount RF amplifier, 1.2 GHz, 85/102 MHz, single output, FSK
DBE-1200S	DBE-1200S strand-mount RF amplifier, 1.2 GHz, 85/102 MHz, triple output, FSK

Optical node configurations	Description
DBC-1200 set - 1 x 1 optical, 1310 nm, 204/258 MHz	DBC-1200 optical fibre node set. 1 x 1 optical configuration, 1 x forward receiver, 1 x 1310 nm transmitter, 204/258 diplex filters, including power supply and fibre management tray.
DBD-1200 set - 1 x 1 optical, 1310 nm, 204/258 MHz	DBD-1200 optical fibre node set. 1 x 1 optical configuration, 1 x forward receiver, 1 x 1310 nm transmitter, 2 active output ports, 204/258 diplex filters, including power supply and fibre management tray
DBD-1200 set - 2 x 2 optical, 1310 nm, 204/258 MHz	DBD-1200 optical fibre node set. 2 x 2 optical configuration, 2 x forward receivers, 2 x 1310 nm transmitters, 2 active output ports, 204/258 diplex filters, including power supply and fibre management tray
DBE-1200 set - 1 x 1 optical, 1310 nm, 204/258 MHz	DBE-1200 optical fibre node set. 1 x 1 optical configuration, 1 x forward receiver, 1 x 1310 nm transmitter, 3 active output ports, 204/258 diplex filters, including power supply and fibre management tray
DBE-1200 set - 2 x 2 optical, 1310 nm, 204/258 MHz	DBE-1200 optical fibre node set. 2 x 2 optical configuration, 2 x forward receivers, 2 x 1310 nm transmitters, 3 active output ports, 204/258 diplex filters, including power supply and fibre management tray
DBE-1200 set - 3 x 3 optical, 1310 nm, 204/258 MHz	DBE-1200 optical fibre node set. 3 x 3 optical configuration, 3 x forward receiver, 3 x 1310 nm transmitters, 3 active output ports, 204/258 diplex filters, including power supply and fibre management tray
DBE-1200 set - 4 x 4 optical, 1310 nm, 204/258 MHz	DBE-1200 optical fibre node set. 4 x 4 optical configuration, 4 x forward receivers, 4 x 1310 nm transmitters, 4 active output ports, 204/258 diplex filters, including power supply and fibre management tray
DBC-1200S set - 1 x 1 optical, 1310 nm, 204/258 MHz	DBC-1200S optical fibre node set. 1 x 1 optical configuration, 1 x forward receiver, 1 x 1310 nm transmitter, 204/258 diplex filters, including power supply and fibre management tray.
DBE-1200S set - 1 x 1 optical, 1310 nm, 204/258 MHz	DBE-1200S optical fibre node set. 1 x 1 optical configuration, 1 x forward receiver, 1 x 1310 nm transmitter, 3 active output ports, 204/258 diplex filters, including power supply and fibre management tray
DBE-1200S set - 2 x 2 optical, 1310 nm, 204/258 MHz	DBE-1200S optical fibre node set. 2 x 2 optical configuration, 2 x forward receivers, 2 x 1310 nm transmitters, 3 active output ports, 204/258 diplex filters, including power supply and fibre management tray
DBE-1200S set - 3 x 3 optical, 1310 nm, 204/258 MHz	DBE-1200S optical fibre node set. 3 x 3 optical configuration, 3 x forward receiver, 3 x 1310 nm transmitters, 3 active output ports, 204/258 diplex filters, including power supply and fibre management tray

RF and optical modules

Category	Order number	Type	Description
Upstream modules	19008429	DBUS-C-1	Main module: 204 MHz upstream amplifier 26 dB gain and IDS
	19008430	DBUS-D-1	Bridger module: 204 MHz upstream amplifier 26 dB gain and IDS
Downstream modules	19008867	DBDS-B-5-1	Main: 1.2 GHz downstream amplifier 38 dB - I2 C
	19008869	DBDS-B-6-1	Main: 1.2 GHz downstream amplifier 32 dB - I2 C
	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 - ET: 25 dB tilt I2 C - 52 dBmV output
	19009834	DBDS-F-5-1	Bridger: 1.2 GHz downstream amplifier 44 dB - I2 C - 52 dBmV output
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
Optical modules	19008435	DBRX-A-1	Optical 1.2 GHz downstream receiver, 52 dBmV output
	19008438	DBTX-A-1	Optical upstream transmitter module. Holds up to 2 DBLB optical transmitters
	19010322	DBLB-31-3D-1	Optical 204 MHz transmitter plug-in, 1310 nm, DFB, 3 dBm output, SC/APC
	19010323	DBLB-55-3D-1	Optical 204 MHz transmitter plug-in, 1550 nm, DFB, 3 dBm output, SC/APC
	Enquire	DBLB-Cxx-3D-1	Optical 204 MHz CWDM transmitter plug-in, DFB, 3 dBm output, SC/APC
	19010339	DBLB-BP-1	Bypass laser board for DBTX-A-1 (second slot if no laser installed)
	19010340	DBLB-CB-1	Combiner board to combine two upstream RF signals into a single laser
Remote PHY modules	19012173	DBRPDI-A-1	Remote PHY inserter module
	19012333	DBUS-RPD-1	Remote PHY upstream module for 1x1 or 1x2 applications
	19012331	DBDS-RPD-1	Remote PHY high performance downstream module
	19012332	DBRX-RPD-1	Remote PHY analogue overlay module
	19012171	DBRPD-FT-A-1	Remote PHY fibre tray for DBx

Upgrade kits

DBD-1200 RPK	Remote PHY Upgrade Kit for DBD-1200
DBRPD-CS-1	Remote PHY Cable set for DBx-1200
DBRPDI-A-1	Remote PHY Inserter Module for DBx-1200
DBD-RPD-L	Remote PHY Lid for DBD-1200
DBRPD-FT-A-1	Remote PHY Fibre tray for DBx
DBPSU-08-RPD	Remote PHY power supply in lid
DBUS-RPD-1	Remote PHY 1x1 or 1x2 Upstream Module
DBDS-RPD-1	Remote PHY Optimised Downstream module

Upgrade kits (continued)

DBE-1200 RPKD	Remote PHY Upgrade Kit for DBE-1200
DBRPD-CS-1	Remote PHY Cable set for DBx-1200
DBRPDI-A-1	Remote PHY Inserter Module for DBx-1200
DBE-RPD-L	Remote PHY Lid for DBE-1200
DBRPD-FT-A-1	Remote PHY Fibre tray for DBx
DBUS-RPD-1	Remote PHY 1x1 or 1x2 Upstream Module
DBDS-RPD-1	Remote PHY Optimized Downstream module
DBDS-RPD-1	Remote PHY Optimised Downstream module

DBE-1200S RPKD	Remote PHY Upgrade Kit for DBE-1200S
DBRPD-CS-1	Remote PHY Cable set for DBx-1200
DBRPDI-A-1	Remote PHY Inserter Module for DBx-1200
DBES-RPD-L	Remote PHY Lid for DBE-1200S
DBRPD-FT-A-1	Remote PHY Fibre tray for DBx
DBUS-RPD-1	Remote PHY 1x1 or 1x2 Upstream Module
DBDS-RPD-1	Remote PHY Optimized Downstream module
DBDS-RPD-1	Remote PHY Optimised Downstream module

Accessories

Category	Order number	Type	Description
DBx fibre tray	19010835	DBC-FT-A-1	Fibre management for DBC cabinet
	19010836	DBD-FT-A-1	Fibre management for DBD cabinet
	19010837	DBE-FT-A-1	Fibre management for DBE cabinet
	19010838	DBCS-FT-A-1	Fibre management for DBC strand mount
	19010839	DBES-FT-A-1	Fibre management for DBE strand mount
Diplex filters	19008513	DBDIP-01(-W)	65/85 MHz diplexer
	19008514	DBDIP-02(-W)	85/105 MHz diplexer
	19008515	DBDIP-03(-W)	204/258 MHz diplexer
	19008516	DBDIP-04(-W)	42/54 MHz diplexer
	19009966	DBDIP-05(-W)	85/102 MHz diplexer
Power supplies	19005023	DBPSU-04	35 W power supply 65 VAC without PFC
	19008569	DBPSU-05	35 W power supply 230 VAC without PFC
	19005025	DBPSU-06	35 W power supply 65 VAC without PFC for DBC-1200S
	19008330	DBPSU-07	90 W PSU for DBE-1200(S)
	19011295	DBPSU-08	35 W power supply 65 VAC without PFC 2-wire powering power passing
Optical accessories	Enquire	DB-MU-C-xxxx	CWDM multiplexer mini-CWDM-style up to 1:4
	Enquire	DB-DM-C-xxxx	CWDM de-multiplexer mini-CWDM-style up to 4:1
	Enquire	DB-MU-D-xxxx	DWDM multiplexer mini-CWDM-style up to 1:4
	Enquire	DB-DM-D-xxxx	DWDM de-multiplexer mini-CWDM-style up to 4:1
Other	19008482	DBTM-T-1	75 Ω terminating module

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