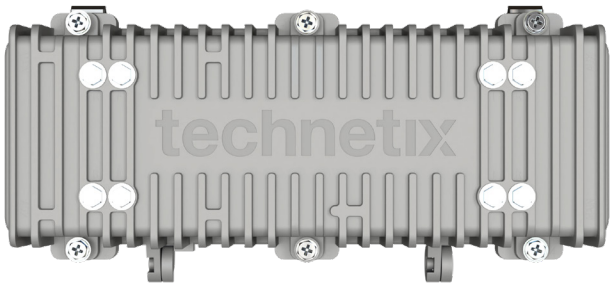
DBT access solution

DBT-1800-C2 high gain dual system amplifier

- **DOCSIS® 4.0 (1794 MHz/684 MHz) ready**
- **Full electronic smart control and setup locally and remotely**
- **Agile AGC/ALSC functionality**
- **Downstream auto-alignment**
- **Field pluggable diplex filters for future bandwidth upgrade**
- **Activating low power mode saves 3 W per active output port, lowering the max. TCP from 70 dBmV to 67 dBmV**
- **Meets the SCTE 279 2022 standard**
- **Drop-in, fully compatible with GainMaker® housings**



DBT Gamechanger platform

The Technetix DBT Gamechanger platform consists of a range of amplifiers and drop-ins and supports DOCSIS 4.0 upgrades. Drop-ins are compatible with the GainMaker housing. The Gamechanger design is unique and based on our state-of-the-art DBx platform, with more than 1 million units in the field. The platform has an IP68 rating which enables deployment in challenging outdoor environments and has an unmatched total cost of ownership in the industry.

DBT-1800-C2

The Technetix DBT-1800-C2 is a high gain triple balance system amplifier - 1.8 GHz ready. The C2 has 49 dB operational gain at 1794 MHz in the downstream and 32 dB operational gain at 684 MHz in the upstream. Pluggable diplex filters enable operators to make an easy upgrade to the amplifier split in the field. The DBT-1800-C2 supports the following splits: 85/102 MHz, 204/258 MHz, 396/492 MHz, 492/606 MHz and 684/834 MHz. Low power mode is available and can be controlled via software. Fully backwards compatible with old legacy levels.

Smart configuration

The DBT platform is fully supported by Technetix Unified Software tools. The controller module enables digital control of all settings using a USB port control and monitoring. An ingress detection switch can be set locally or remotely via transponder. With an integrated dynamic AGC/ALSC functionally which keeps the network stable during extreme temperature changes.

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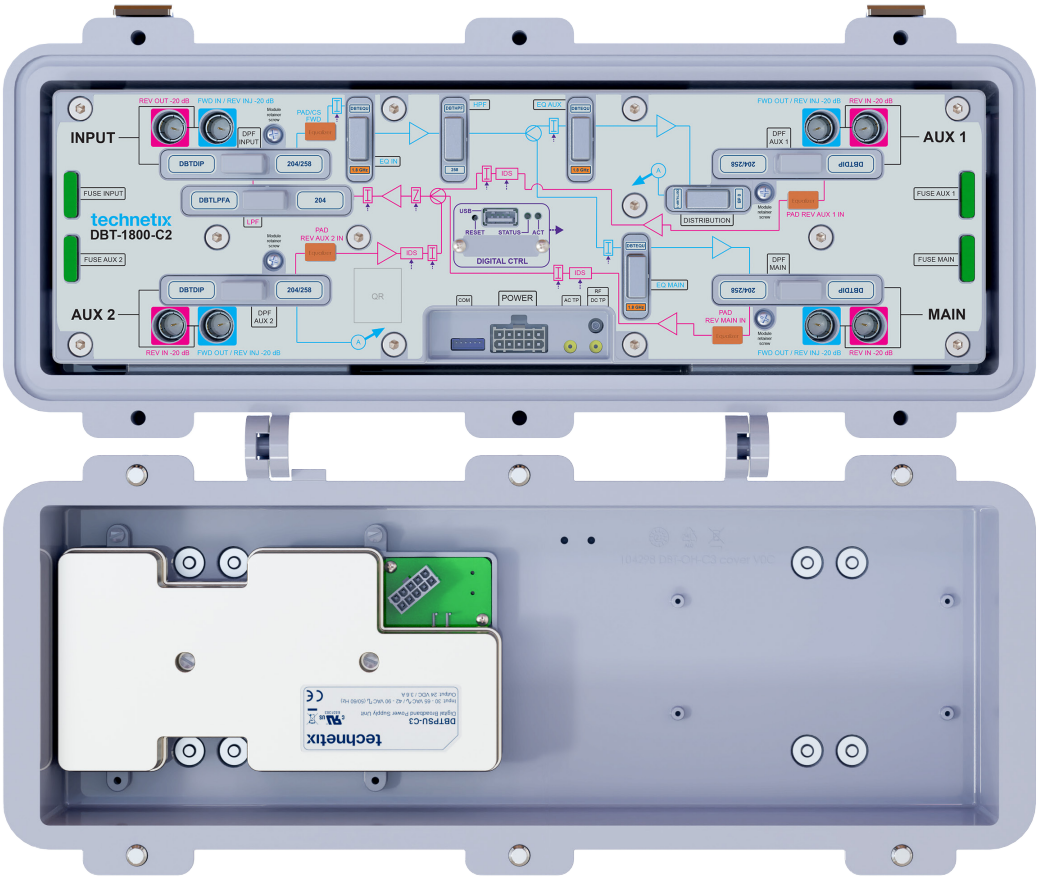
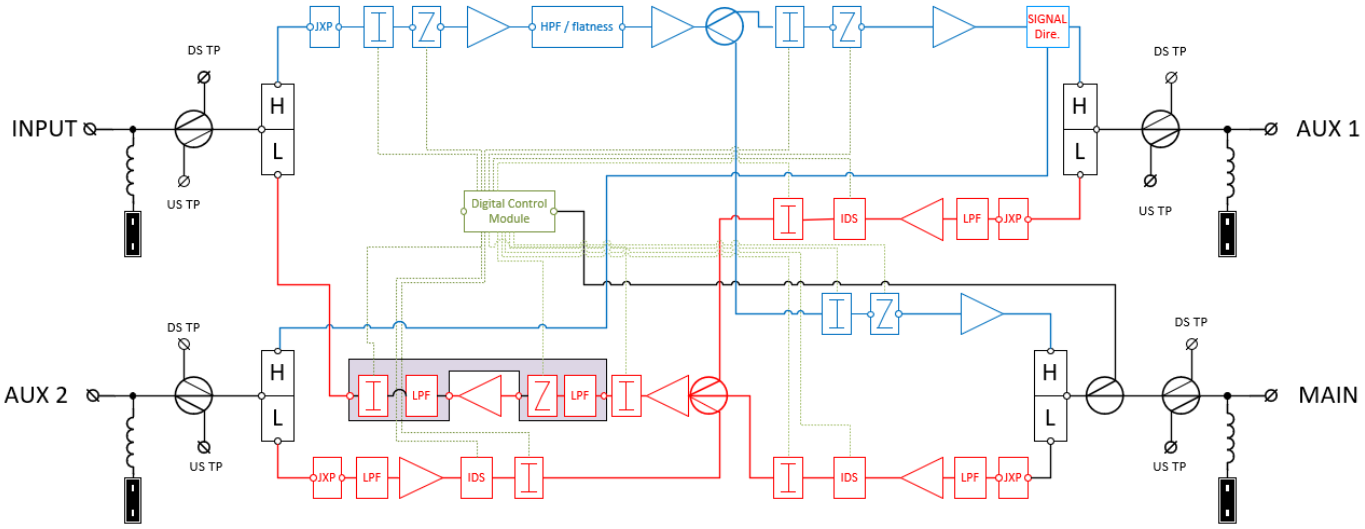


Block diagram RF configuration



DBT-1800-C2 high gain dual system amplifier

DBT-1800-C2 device and performance specifications

Parameter		Forward path	Reverse path	Units	Notes
Passband		102-1794	8-684	MHz	1
Frequency response		±0.75 (up to 1218 MHz); ±1 (1218-1794 MHz)	±0.5 (up to 204 MHz); ±0.75 (204-684 MHz)	dB	2
Operational gain	**1.2 GHz EQ**	48 (at 1218 MHz)	25 (85 MHz split); 28 (204 MHz split)	dB	3, 4
	1.8 GHz EQ	46 (at 1218 MHz); 49 (at 1794 MHz)	28 (204 MHz split); 32 (684 MHz split)	dB	3, 4
Mainboard tilt	**258-1794 MHz**	9 ±1		dB	
TCP		70		dBmV	5
Return loss		SCTE 279 2022	SCTE 279 2022		6
Noise figure		10	9	dB	7
Attenuator control (electronic, 0.5 dB step) pre-stage		0-20	0-15	dB	
EQ control (electronic, 0.5 dB step) pre-stage		0-20		dB	
Attenuator control (electronic, 0.5 dB step) interstage		0-15	0-15	dB	
EQ control (electronic, 0.5 dB step) interstage		0-15	0-15	dB	
Test points / Injection points		-20 ±1	-20 ±1	dB	
NPR (204 MHz) **NPR (684 MHz)**			>55 dB with 10 dB dynamic range >55 dB with 5 dB dynamic range	dB	
Ingress detection switches			0/6/40 (off)	dB	
Group delay (min.)	**10 to 13.2**		60	ns	
	13.2 to 16.4		22	ns	
	16.4 to 19.6		12	ns	
	184.8 to 191.2		6	ns	
	191.2 to 197.6		10	ns	
	197.6 to 204.0		20	ns	
	259 to 262	10		ns	
	265 to 268	8		ns	
	271 to 274	7		ns	
	277 to 280	5		ns	

General specifications

Parameter	DBT-1800-C2		Units	Notes
Hum modulation	-65 dBc at 12 A, -60 dBc at 15 A			
Class of enclosure	IP68			
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-male			
Coaxial connections	5/8"			
Housing finish	Painted conductive chromate finish			
Impedance	75		Ω	
Equipment approval	CE/RoHS/FCC			

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Mechanical and environmental specifications

Parameter	DBT-1800-C2	Units	Notes
Operating voltage	30-65 VAC sine wave, 42-90 VAC quasi-square wave		
AC bypass and capacity & input	15	A	
Operating temperature range	-40°C to +65°C (-40°F to +149°F)	°C/°F	
Drop-in dimensions	15.59" x 4.61" x 2.68" (396.0 x 117.0 x 68.0 mm)	inch/mm	
Housing dimensions	17.52" x 7.74" x 6.46" (445.0 x 197.0 x 164.0 mm)	inch/mm	
Weight	21.8 lb (9.9 kg)	lb/kg	

Power consumption specifications

Parameter	DBT-1800-C2 AC voltage - frequency 47-63 Hz												Units
Square wave 40-90 V, all values in RMS	40	42	45	50	55	60	65	70	75	80	85	90	Voltage (V)
	1.2	1.2	1.1	1.0	0.9	0.8	0.7	0.7	0.6	0.6	0.6	0.5	Current (A)
	42.8	42.7	42.4	42.2	42.0	41.9	41.8	41.8	41.8	42.0	42.5	42.8	Power (W)

Notes

1	85/102 MHz split is supported in 1.2 GHz mode.
2	Aligned with 20 dB coaxial cable.
3	Forward, reverse gain were measured with an equivalent 0 dB input EQ and 0 dB input pad setting, including back-off settings.
4	The operational gain is settable gain that includes room for back-off settings needed for temperature compensation.
5	Measured at +25°C (+77°F), full channel loading from 258-1794 MHz, excluding directional coupler or splitter.
6	Measured in Technetix housing.
7	±1 dB depending on the split, measured at +25°C (+77°F). Upstream is measured without back-off settings at maximum gain.

Unless indicated differently, our specifications are based on a standard performance of +25°C (+77°F).

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Order information

Item code	Model code	Description
85/102 split		
19015627	DBT18C2K102A10A	DBT-1800 BRIDGER UPGRADE KIT MID SPLIT 1.2 GHz
19015709	DBT18C2M102A10A	DBT-1800 BRIDGER MODULE ONLY MID SPLIT 1.2 GHz
19015710	DBT18C2F102A10A	DBT-1800 BRIDGER FULL STATION MID SPLIT 1.2 GHz
204/258 split		
19014859	DBT18C2F258A10A	DBT-1800 BRIDGER FULL STATION HIGH SPLIT 1.2 GHz
19015080	DBT18C2M258A10A	DBT-1800 BRIDGER MODULE ONLY HIGH SPLIT 1.2 GHz
19015261	DBT18C2K258A10A	DBT-1800 BRIDGER UPGRADE KIT HIGH SPLIT 1.2 GHz
19015722	DBT18C2M258B10A	DBT-1800 BRIDGER MODULE ONLY HIGH SPLIT 1.8 GHz
19015725	DBT18C2F258B10A	DBT-1800 BRIDGER FULL STATION HIGH SPLIT 1.8 GHz
19015728	DBT18C2K258B10A	DBT-1800 BRIDGER UPGRADE KIT HIGH SPLIT 1.8 GHz
396/492 split		
19016391	DBT18C2M492B10A	DBT-1800 BRIDGER MODULE ONLY 396/492 1.8 GHz
19016394	DBT18C2F492B10A	DBT-1800 BRIDGER FULL STATION 396/492 1.8 GHz
19016397	DBT18C2K492B10A	DBT-1800 BRIDGER UPGRADE KIT 396/492 1.8 GHz
19016480	DBT18C2FT492B10A	DBT-1800 BRIDGER FULL STATION 396/492 1.8 GHz NXT-01
19016483	DBT18C2KT492B10A	DBT-1800 BRIDGER UPGRADE KIT 396/492 1.8 GHz NXT-01

Accessories

Item code	Model code	Description
19014696	DBT-OH-C3	DBT OUTER HOUSING FOR DBT C2 AND C3 MODULE
19013939	DBTPSU-C3	DBT PSU+CABLE BRIDGER & TRUNK (C2/C3/CC2/CC3/MB)
19015160	DBT18DC8-1	DBT-1800 PLUG-IN DC 8 dB AUX 1
19015161	DBT18DC8-2	DBT-1800 PLUG-IN DC 8 dB AUX 2
19015162	DBT18DC12-1	DBT-1800 PLUG-IN DC 12 dB AUX 1
19015163	DBT18DC12-2	DBT-1800 PLUG-IN DC 12 dB AUX 2
19015157	DBT18JMP-1	DBT-1800 JUMPER ACTIVATES AUX 1
19015158	DBT18JMP-2	DBT-1800 JUMPER ACTIVATES AUX 2
19015159	DBT18SPL	DBT-1800 PLUG-IN SPLITTER
19014232	DBTEQU-1.2	EQUALIZER BOARD FOR DBT SERIES 1.2 GHz
19014273	DBTEQU-1.8	EQUALIZER BOARD FOR DBT SERIES 1.8 GHz
19014274	DBTDIP85-102	DBT DIPLEX FILTER 85/102 MHz
19014237	DBTDIP204-258	DBT DIPLEX FILTER 204/258 MHz
19014861	DBTDIP396-492	DBT DIPLEX FILTER 396/492 MHz
19014945	DBTHPF10218	DBT-1800 HIGH PASS FILTER BOARD 102 MHz
19014944	DBTHPF25818	DBT-1800 HIGH PASS FILTER BOARD 258 MHz
19015401	DBTHPF49218L	DBT-1800 HIGH PASS FILTER BOARD 492 MHz LINEAR

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Accessories

Item code	Model code	Description
19015403	DBTLPF8518A	DBT-1800 LOW PASS FILTER BOARD 85 MHz
19015281	DBTLPF20418A	DBT-1800 LOW PASS FILTER BOARD 204 MHz
19015404	DBTLPF39618A	DBT-1800 LOW PASS FILTER BOARD 396 MHz
19015322	DBTSFNTX	DBT C1/C2/C3 15A SEIZURE NUT UPGRADE
19015323	DBTPSC	DBT C1/C2/C3 15A SEIZURE NUT PLASTIC INSERT UPGRADE
19015325	DBTTPP	DBT TEST POINT PLUG WITH ANTI-DROP
19016518	DBTNXTAP-CX	DBT CISCO C1/C2/C3 LEGACY HOUSING ADAPTER PLATE NXT-01

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