



E amplifiers

E3 DISTRIBUTION AMPLIFIER

Teleste E3 enriches our extensive range of DOCSIS® 3.1 capable distribution amplifiers. The E3 is compact while true excellence lies beneath the cover. Its performance and versatility make it a great all-around amplifier. It's innovative yet simple design offers outstanding performance and practical functionalities.

The E3 features two gain modes for more flexible operation. Higher gain is designed for distribution purposes and lower gain is suitable for line extender use. Upstream gain can also be set to low or high mode in the input whereas the adjustment range in the output is -26 dB...0 dB. Also intelligent manual alignments, remote ingress switching and integrated electrical controls in both up- and downstream are available. The amplifier stages of E3 are based on a high-performance GaN solution that makes the usable gain range especially wide and a high output level possible. The E3 supports the DOCSIS 3.1 frequencies and fully stands up to future bandwidth needs.

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The E3 is a compact distribution amplifier with one active output and a forward gain up to 42 dB. Based on the latest GaN amplifier technology, the E3 offers high output level (U_{max} 110.5 dBμV, 138 channels) and wide gain range, both helpful when networks take the next step and become DOCSIS 3.1 compliant.

1. New design and operational functionality

There is much more than neat appearance behind the simplified white finish. A new aluminium cover has been used for better shielding characteristics and advanced heat dissipation.

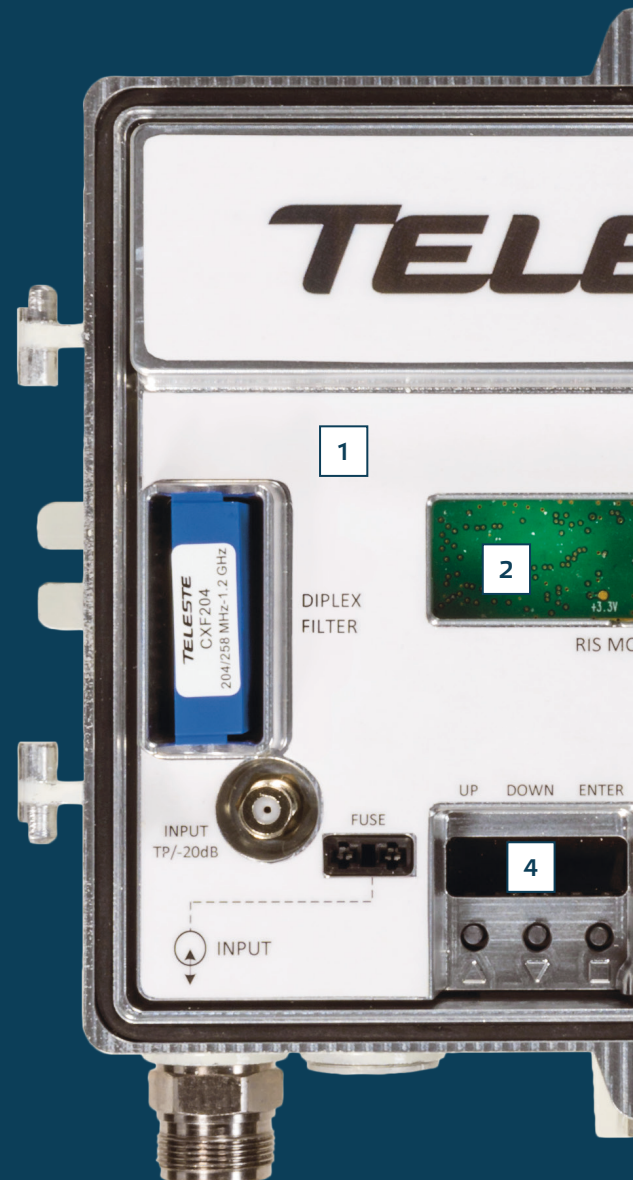
Also a useful feature is the re-designed lid of the amplifier that may be opened from either the left or right hand side or removed altogether. This flexibility improves accessibility and permits greater freedom to install the amplifier in confined spaces.

2. Removing barriers with RIS

Optional RIS (Remote Ingress Switching) modules (E61 & E62) offer remote ingress switching management over downstream. RIS offers a cost effective way to tackle return path ingress. It also enables the use of Argus SmartRIS toolset if Argus NMS is used to manage the network. SmartRIS is the most advanced ingress switching management system available on markets.

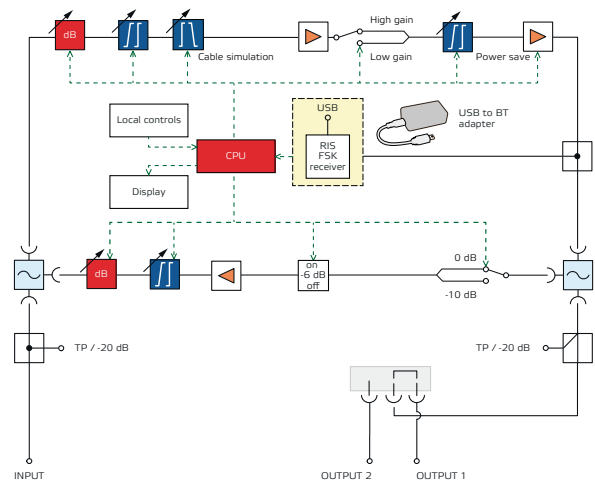
The RIS modules offer local access to E3 via USB port that also enables local management via wireless BT and Teleste Commander application for Android smartphones and tablets.

While the E61 RIS module provides unidirectional ingress switching capabilities the E62 RIS transponder module supports bidirectional communications. As such the E62 RIS transponder module assists in the remote monitoring in addition to the ingress management.

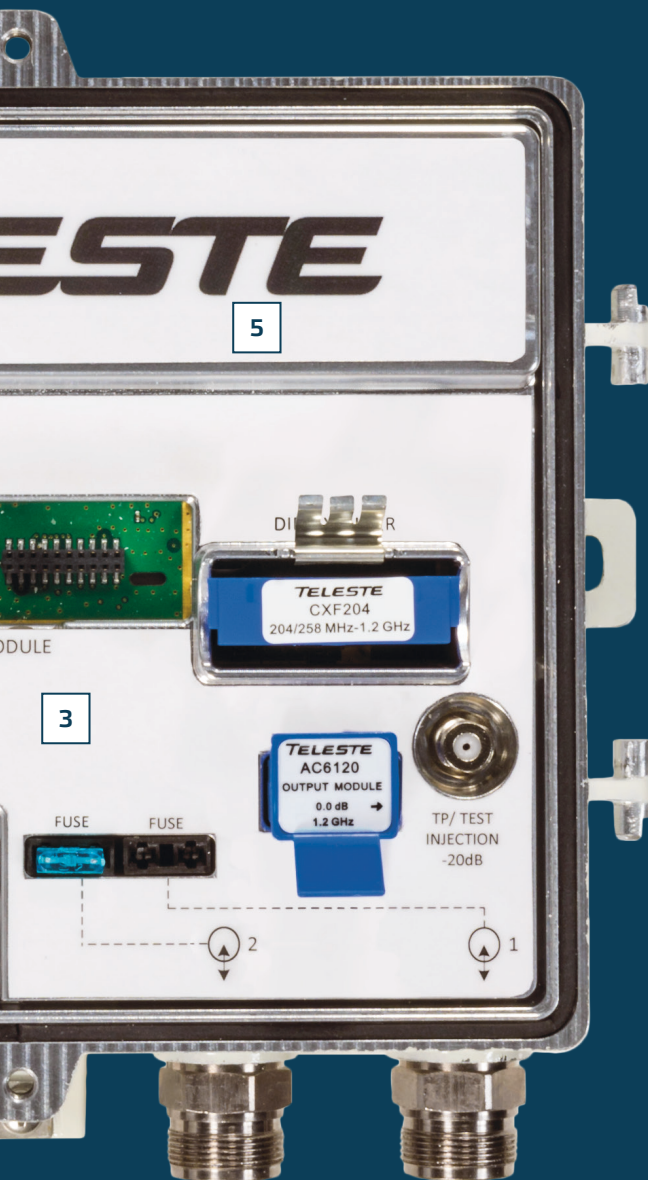


E3 features

- 1218 MHz downstream
- 204 MHz upstream
- Electrical adjustments with local user interface
- Electrical gain and slope mode selections
- Adjustable cable simulator at input
- Intelligent return path re-alignment
- GaN performance
- Optional PC, tablet or smartphone control via wireless BT or USB
- Optional RIS receiver for remote ingress switch control
- Excellent ESD and surge protection



E3 block diagram



3. Smart features

The E3 supports intelligent manual alignments. Instead of aligning separate amplifier stages, the technology offers a universal control that automatically aligns gains and levels of amplifier stages in an optimal manner. Besides optimal performance it increases service reliability and cuts down on operational costs over time.

4. Local user interface

E3 has also a local user interface consisting of a four digit 7-segment display and three push buttons. This local UI can be used for basic configuration in cases where use of a PC, tablet or smartphone equipped with CATVisor Commander is not desired.

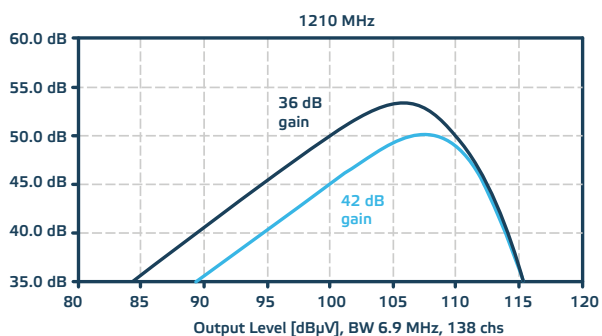
5. Power save technology

The combination of high output level, 1.2 GHz DS frequency, and smart features can be potentially power-consuming. In the E3, power save technology help operators to reduce power consumption in response for example to channel load changes. In low power mode, this technology can save up to 3 W per active output port. On a bigger scale this means lower operating cost for the network and a smaller CO₂ footprint.

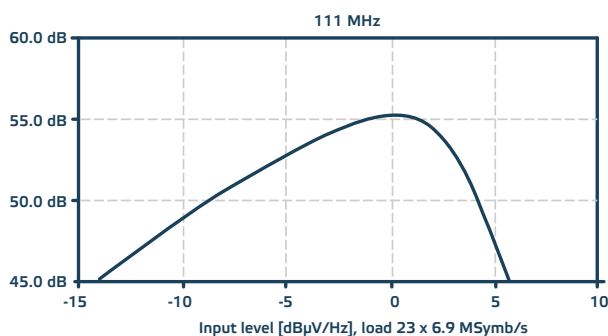
E3 / DISTRIBUTION AMPLIFIER

DOWNSTREAM SIGNAL PATH		UPSTREAM SIGNAL PATH	
Frequency range	85...1218 MHz	Frequency range	5...204 MHz
Return loss	20 dB	Return loss	18 dB
Maximum gain	42 dB	Gain	28 dB
Gain control range	-26...0 dB	Gain control (output)	-20...0 dB
Input slope control range	-13...20 dB	Gain control (input)	0 dB / -10 dB
Cable simulator	0...13 dB	Slope control range	0...15 dB
Interstage slope	0...15 dB	Flatness	± 0.5 dB
Flatness	± 0.5 dB	Noise figure	< 6 dB
Test point	-20 dB	CINR	See curves
Group delay	2 ns	RIS RECEIVER (E61) & TRANSPONDER (E62)	
Noise figure	8.5 dB	Ingress switching	0 / -6 / < -40 dB
Umax (138 QAM channels, @ 1.2 GHz)	110.5 dbμV	DS data rate	9380 bps
TCP	68.5 dBmV	Channel bandwidth	0.2 MHz
CINR	See curves	DS frequency range	115...130, 245...260 MHz
		US data carrier frequency	10.7 MHz (E62)
		US channel bandwidth	0.4 MHz (E62)
		US data rate	38400 bps (E62)
GENERAL			
Supply voltage	27...65 / 205...255 V AC	Weight	1.5 kg
Power consumption	17 W, (14 W in power save mode)	Operating temperature	-40...+55 °C
Max current feedthrough	7 A / port	Class of enclosure	IP67 (IP54 if ventilation hole not closed)
Hum modulation	70 dB	EMC compatibility	EN 60728-2
Input / Output connectors	F-female (other types available)	Safety	EN 60728-11
Test point connector	F-female	ESD	4 kV
Dimensions (h x w x d)	(185 (215) x 160 (190) x 75) mm	Surge	6 kV (EN 60728-3)

CINR (Downstream)



CINR (Upstream)



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