

## Intelligent 1.2 GHz broadband amplifier

Teleste ACE3 is an intelligent broadband amplifier for DOCSIS® 3.1 capable networks. The amplifier has 1218 MHz downstream frequency band and a flexible upstream that can be easily upgraded to 204 MHz. Equipped with several intelligent features, the ACE3 enables the use of higher modulation schemes in your network and is a nice fit for future-proof network upgrades and installations.



# The most advanced 1.2 GHz broadband amplifier on the market

## Features

- 1218 MHz downstream
- 204 MHz upstream, plug-in diplexer
- GaN performance
- Automatic ingress control
- Power Factor Correction
- Local Bluetooth® connectivity

The ACE3 solves challenges in network and service availability. The amplifier handles many typical installation and maintenance issues automatically and guarantees optimal performance in all signal levels.

## Extreme performance capability

The ACE3 is a broadband amplifier that will fully stand up to future bandwidth needs. With 1.2 GHz downstream frequency band and a flexible upstream that can be easily upgraded to 204 MHz. Extremely high gain is ensured by GaN amplifier technology.

## Benefits of intelligence

The ACE3 supports intelligent features that enable operators to increase service reliability and cut down on operational costs over time. Equipped with a transponder, the amplifier can:

- be controlled remotely and monitor quality of upstream signal
- stop ingress automatically before your customers are disturbed
- align signal levels and guarantee optimal performance when margins are tight
- offer many monitored parameters for preventive network diagnostics

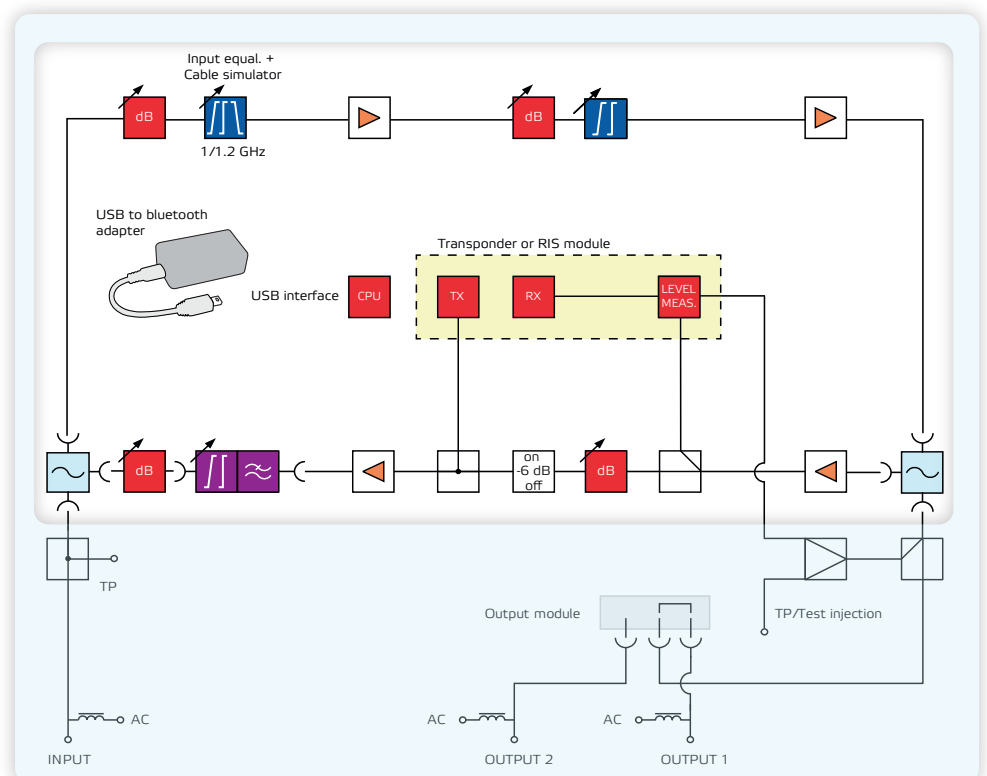
Some intelligent features are also available for operators who don't want to invest in transponders. A cost effective AC6915 RIS module offers remote ingress switching functions over downstream. It also enables the use of Argus Smart RIS toolset if Argus NMS is used to manage the network. Smart RIS is the most advanced unidirectional remote ingress switching management system available on market.

Intelligent functionalities are illustrated on the white area below.

Integrated electrical controls in both up- and downstream.

Remote monitoring and control is possible via either DOCSIS, HMS, RIS or CATVisor protocol.

Upgrading the upstream to 204 MHz is simple. Only the diplex filter and combined slope and response correction unit have to be changed.



## The art of RF engineering in a compact housing

The ACE3 offers a wide gain control range and an extreme output level, both helpful when networks take the next step and become 1.2 GHz-compliant. Based on GaN amplifier technology, the ACE3 delivers 117 dB $\mu$ V output which is roughly twice as much as delivered by older GaAs based amplifiers.

The combination of high output level, 1.2 GHz frequency, and intelligent features can be potentially power-consuming. In the ACE3, this challenge is solved by built-in active power factor correction and clever design that guarantee low power consumption.

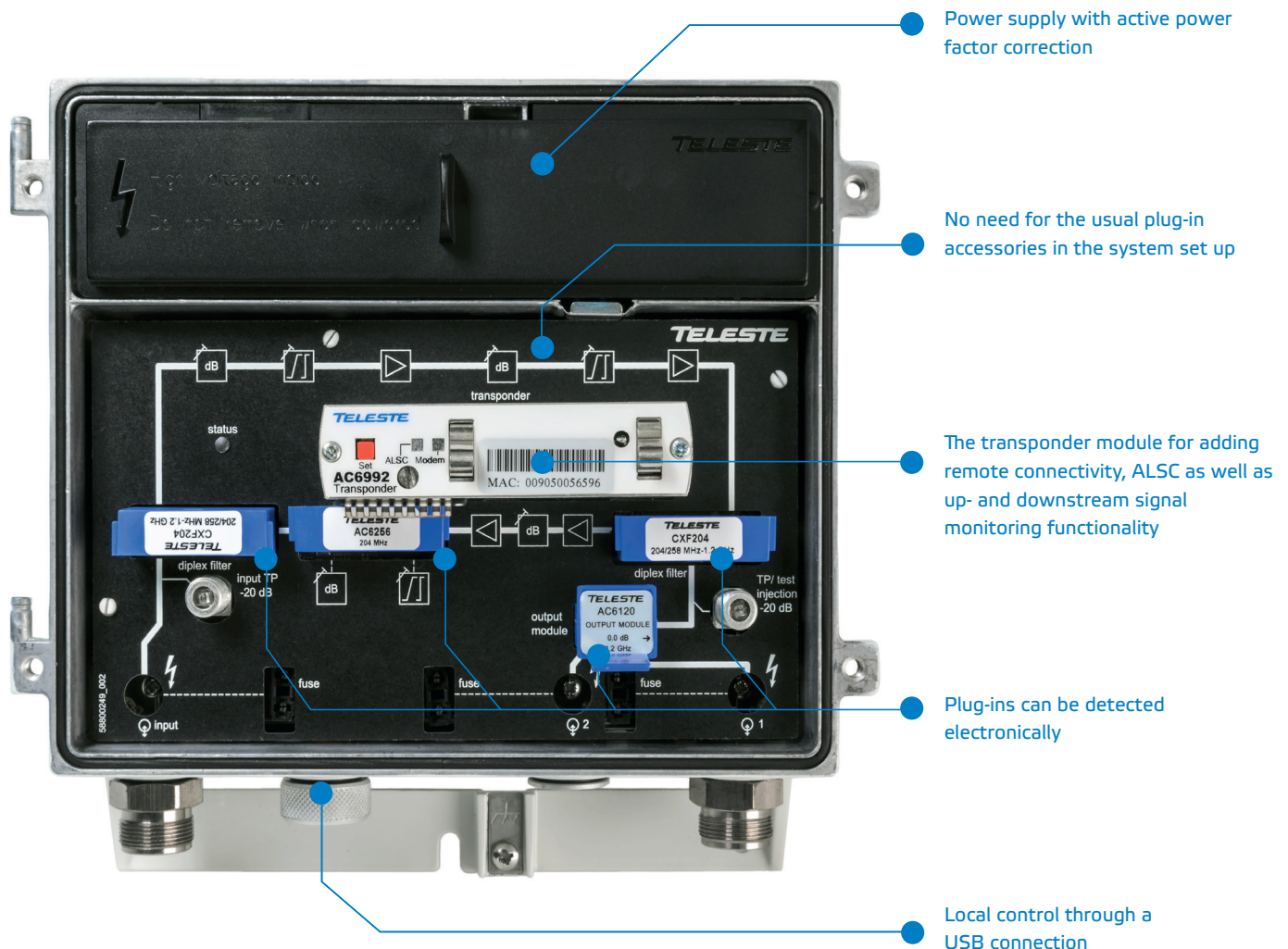
The ACE3 features automatic alignment, which takes care of optimized SNR performance of both signal directions. The ALSC can be activated with a transponder unit. There are two transponder alternatives available, one supporting an HMS and CATVisor protocol and the other for DOCSIS based remote connections.

## Easy management even on the site

The amplifier can be accessed remotely and locally. Remote access is done using either a HMS, CATVisor or DOCSIS protocol. Local access is possible via a USB port. The USB port also enables wireless local management via Bluetooth<sup>®</sup> and Teleste Commander application for Android smartphones and tablets.

## ACE3 and environment

- Advanced GaN hybrid with automatic power optimisation
- Power supply with active power factor correction
- Compact size results in reduced material consumption
- High performance means less active units in the field
- Superior remote management reduces truck rolls



# Technical specifications

## RF CHARACTERISTICS

Downstream signal path (values with diplex filters)		Upstream signal path (values with diplex filters)	
Frequency range	85...1218 MHz	Frequency range	5...65 / ...85 / ...204 MHz
Return loss	18 dB	Return loss	18 dB
Maximum gain	44 dB	Maximum gain	28 dB
Input gain control	-20...0 dB	Ingress switching	0 / -6 / < -40 dB
Interstage gain control	-15...0 dB	Gain control	0...28 dB
Input cable simulator	-13 dB	Slope control	0...15 dB
Nominal interstage slope	13 dB	Flatness	± 0.5 dB
Interstage slope control	8...18 dB	Noise figure	6.5 dB
Pivot frequency selection	1.0 GHz / 1.2 GHz	CINR	See curves
Flatness	± 0.5 dB		
Group delay	2 ns		
Test point	-20 dB		
Noise figure	8.5 dB		
CTB 41 channels	116.5 dBμV		
CSO 41 channels	118.0 dBμV		
U <sub>max</sub> (112 QAM channels)	111.5 dBμV		
U <sub>max</sub> (138 QAM channels)	108.5 dBμV		

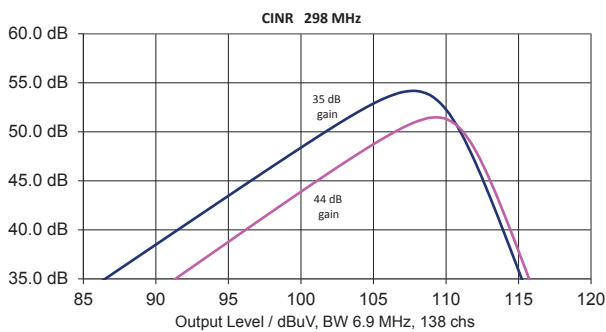
## AC6992 TRANSPONDER MODULE (CATVisor and HMS )

RF modem		RF level measurements	
Power consumption	1.8 W	DS measurement range	50...1218 MHz, 0.25 MHz steps
DS frequency range	80...88 MHz, 108...132 MHz, 160...176 MHz, 216...264 MHz	US measurement range	5...204 MHz, 0.25 MHz steps
US frequency range	5...65 MHz	Measurement bandwidth	0.35 MHz
DS input level range @ transponder	60...90 dBμV	DS dynamic range	80...120 dBμV @ node out
US output level range @ transponder	75...104 dBμV	US dynamic range	20...75 dBμV @ node in

## GENERAL CHARACTERISTICS

Power consumption	23 W	Dimensions (h x w x d)	170 (200) mm x 230 mm x 90 mm
Supply voltage	27...65 V AC / 205...255 V AC	Weight	2.3 kg
Max current feedthrough	7 A / port	Operating temperature	-40...+55 °C
Hum modulation	70 dB	Class of enclosure	IP54
Output ports	PG11 (several adaptors available)	EMC compatibility	IEC 60068-2-52, severity 1
Test point connectors	F female	ESD	4 kV
		Surge	6 kV (EN 60728-3)

CINR (Downstream)



CINR (Upstream)

