| Analyser | Pilotgen | saWe | ActivPFC | RIS | ALSC | Optima+ | Wireless | 204 MHz | 1218 MHz | GaN |

AC nodes

# AC9100
# INTELLIGENT 1.2 GHZ NODE

Supporting DOCSIS® 3.1 frequencies, the AC9100 is our most advanced optical node platform, the solution for the variable demands of the network. Besides cutting edge technology, the node is also easy – and economical – to operate.

The AC9100 is a four output node that offers outstanding performance and practicality to meet the needs of today's most demanding operators. The node is based on fixed platform but responds to diverse requirements. It includes two fixed optical receivers and can be used as two independent nodes or it can work in 1+1 backup mode. It is able to adjust itself automatically and effectively. The automatic features greatly reduce the possibility of human errors and improve efficiency of time consuming network operations. This means lower operational costs and increased network uptime.

**TELESTE**

# AC9100
# INTELLIGENT NODE FOR HFC NETWORKS

AC9100 is an intelligent, 2 x 4 segmentable node. It offers high output level (Umax 114.0 dBµV) while supporting 1.2 GHz downstream and up to 204 MHz upstream frequencies. Remote monitoring and control is available via transponder (HMS/CATVisor or DOCSIS).

**1. PSU with active power factor correction**
The combination of high output level, 1.2 GHz downstream frequency, and smart features can be potentially power consuming. In the AC9100 this challenge is solved by built-in active power factor correction and clever design that guarantee low power consumption.

**2. Always in control**
Conventional mechanical adjustments and management of the parameters can be laborious and time-consuming processes but with the AC9100 the days of frequent maintenance tasks are over.

In addition to being automatically aligned, the AC9100 can be monitored and controlled remotely via the optional plug-in transponder unit. The transponder unit offers three different management options: CATVisor, HMS and DOCSIS.

**3. Easy management even on the site**
The node can be accessed locally via a USB port. The USB port also enables wireless local management via Bluetooth® and Teleste Commander application for Android smartphones and tablets.

**4. Integrated fibre compartment**
The integrated fibre management space provides secure storing location for fibre-optic cables and fibre splices.
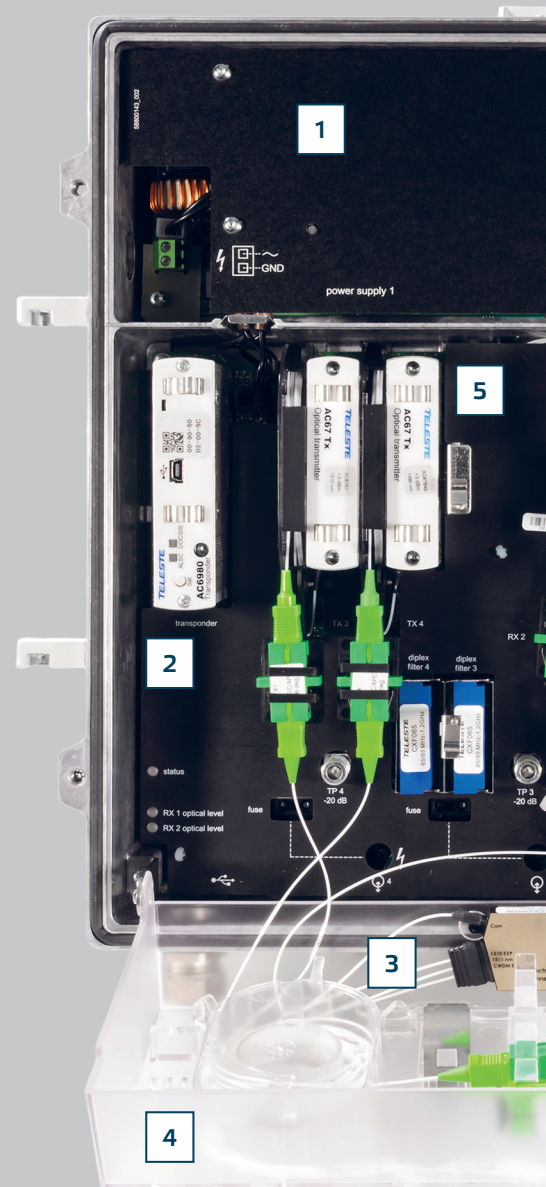
## AC9100 features

- Supports up to 1.2 GHz downstream and 204 MHz upstream
- Redundant power supplies
- Fully user configurable automatic level control (ALC)
- Four high performance outputs
- Wide range of upstream options
- Transmitters available with either Fabry-Perot or DFB lasers
- Electrically controlled forward and return path signal routing
- Efficient ESD and Surge protection
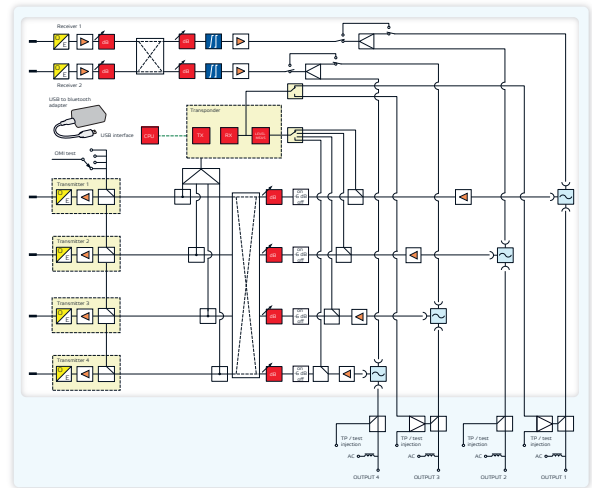


*AC9100 block diagram, smart functionalities are illustrated on the white area.*
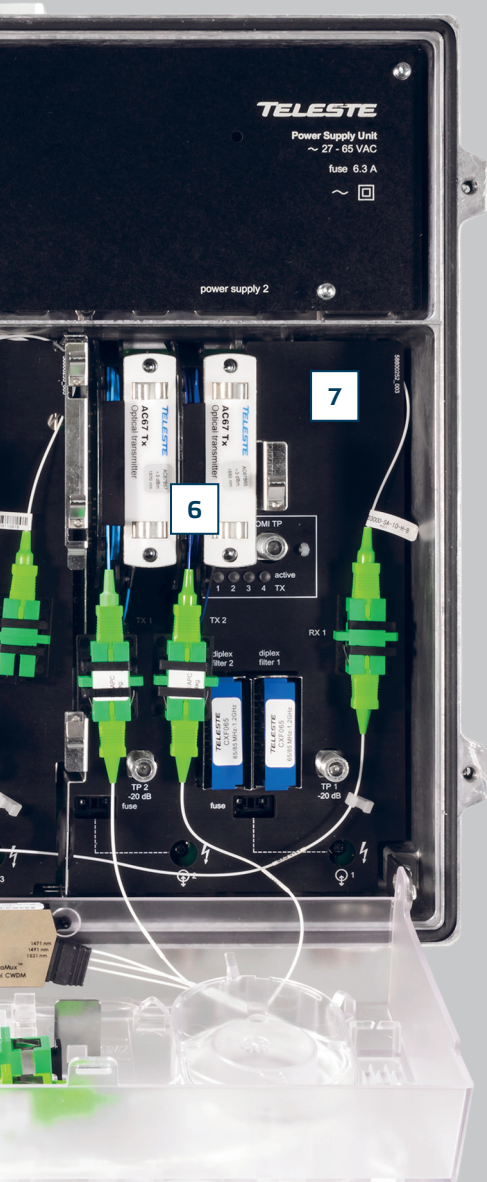


### 5. Digital benefit
All four traditional upstream transmitters can be replaced with two digital return path modules providing fibre infrastructure savings. The new digital return path technology also ensures an excellent upstream signal quality and allows longer fibre links.

### 6. Integrated fibre organiser
The optical transmitters are equipped with a new, innovative, integrated fibre organiser for easier module installation. Individual fibre organiser modules allow easy access to each cable without breaking surrounding cables.

### 7. European style node
Environmental values and business benefits do not need to conflict. An efficient mechanical design optimising the use of manufacturing materials greatly reduce both capital and operational expenditures. All of this favours both the environment and the operator.

The high performance means fewer units in the field and this – of course – leads to less frequent maintenance visits. Efficient and fully passive cooling design lowers internal temperature which increases component durability. All this leads to higher service quality and lower operational costs.

# AC9100 / INTELLIGENT 1.2 GHZ NODE

| DOWNSTREAM SIGNAL PATH | |
|---|---|
| Light wavelength | 1290…1610 nm |
| Optical input power range | -8…0 dBm |
| Frequency range | 85…1218 MHz |
| Flatness | ± 0.5 dB |
| Gain limited output | 4 x115 dBµV / 2 x 119 dBµV |
| CTB 41 channels | 119.0 dBµV |
| Umax (112 QAM channels, @ 1.0 GHz) | 114.0 dBµV |
| Umax (138 QAM channels, @ 1.2 GHz) | 111.5 dbµV |

| UPSTREAM SIGNAL PATH | |
|---|---|
| Frequency range | 5… up to 204 MHz |
| Return loss | 18 dB |
| Ingress switching | 0 / -6 / < -45 dB |
| Input level | 57.0 dBµV |
| OMI adjustment | 0…-20 dB |
| OMI test point | -5 dB |
| CINR | See curves |

| AC67xx RETURN PATH TRANSMITTERS | |
|---|---|
| Light source | CWDM (10 wavelengths) |
| Optical output power | +1 dBm / +3 dBm / +6 dBm |
| Frequency range | 5… up to 204 MHz |
| Pilot frequency | 5.5 MHz / 6.5 MHz / no pilot |

| AC7700 DIGITAL RETURN PATH TRANSMITTERS | |
|---|---|
| Light source | CWDM (18 wavelengths) |
| Optical output power | +5 dBm |
| Frequency range | 5…65 MHz or 5…85 MHz |
| Data rate | 5 Gbps in optical link |
| Number of ports | 2 x RF, 1 Optical |

| AC6992 TRANSPONDER MODULE (CATVisor / HMS ) | | | |
|---|---|---|---|
| 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 | 47…61 W | Dimensions (h x w x d) | 360 mm x 350 mm x 140 mm |
| Supply voltage | 30…65 V AC | Weight | 10 kg |
| Max current feed trough | 12 A / port | Operating temperature | -40…+55 ºC |
| Hum modulation | 70 dB | Class of enclosure | IP54 |
| Optical connectors | SC/APC, E-2000 | EMC compatibility | EN50083-2 |
| Output connectors | PG11 (several adaptors available) | ESD, Surge | 4 kV, 6 kV (60728-3) |

**CINR (Upstream)**



Input level [dBµV/Hz], load 23 x 6.9 MSymb/s
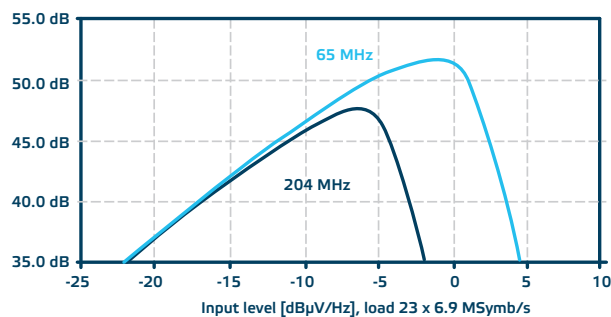
**TELESTE CORPORATION**

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