ICON™ Series

ICON3000 SERIES
LINE EXTENDERS

The ICON3000 Series line extenders set a new standard for network performance and efficiency in the cable broadband market. Engineered for seamless evolution, these amplifiers support 1.8 GHz in the forward path and are fully prepared for DOCSIS® 4.0-capable network rollouts, making them an excellent choice for both legacy networks and next-generation upgrades.

Designed to support intelligent adjustments, automated alignment, and remote monitoring, the ICON3000 Series doesn't just amplify signals—it optimizes network performance. It also simplifies troubleshooting together with Teleste's remote management and telemetry tools, enabling operators to rapidly identify and address issues.

By reducing operational complexity and enhancing network reliability, the ICON3000 Series empowers operators to maximize efficiency and streamline future upgrades. Thanks to its advanced architecture, these line extenders deliver robust high-output performance while minimizing power consumption. Discover how ICON3000 can elevate your network's performance and keep you ahead in a rapidly evolving broadband landscape.

TELESTE

ICON3000 LINE EXTENDERS **FUTURE-READY PERFORMANCE WITH SEAMLESS INTEGRATION**

The ICON3000 Series does more than just boost RF signals to the next level. Thanks to field-swappable diplex filters and true plug-and-play automatic alignment, operators can avoid time-consuming bench upgrades and quickly adapt to new frequency splits for DOCSIS® 4.0. Seamless integration is further reinforced by a modular transponder, which unlocks remote telemetry, advanced ingress detection and analysis, and real-time monitoring. Combined with advanced gain blocks and bias current control, alongside a PFC-equipped power supply, the ICON3000 Series helps reduce operational costs through lower power consumption.

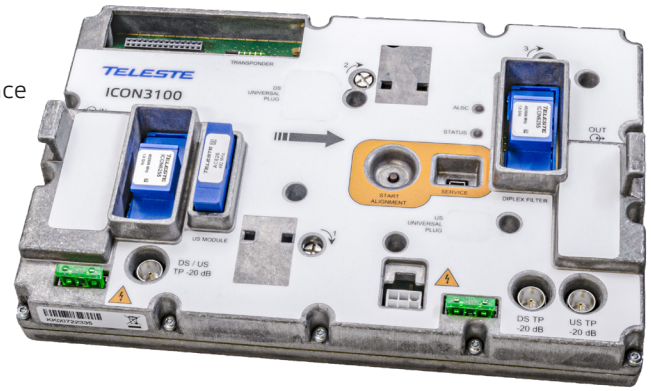
Advanced Remote Control & Monitoring

For comprehensive visibility and control, ICON3000 line extenders can be equipped with an optional transponder.

- Track upstream signal quality in real time
- Locate and block ingress before it impacts subscribers
- Collect proactive metrics for preventive network maintenance

Adaptable, Modular Design

Use RF modules for North American legacy housings or opt for Teleste's ICON3000 housing, built to withstand harsh outdoor conditions. This flexibility ensures a seamless fit for a variety of deployment scenarios.



Superior performance

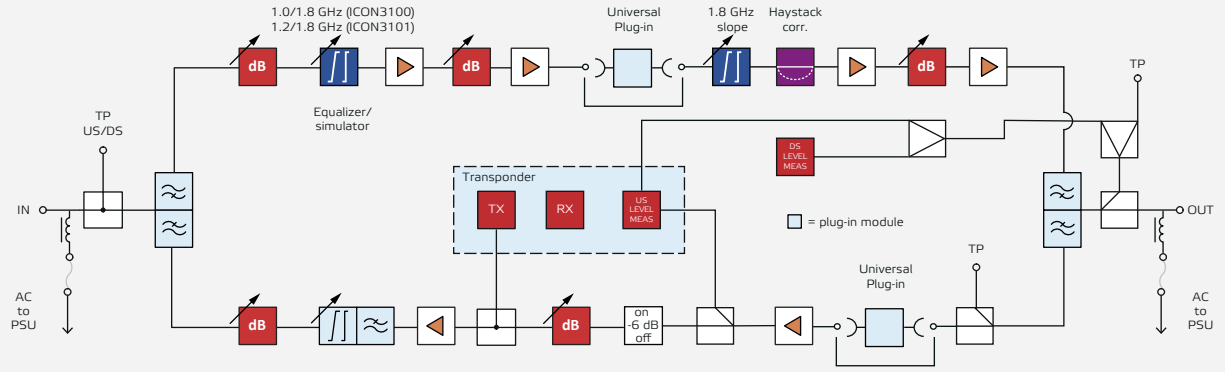
- Broad frequency range: Up to 1.8 GHz downstream and 492 MHz upstream
- Advanced ALSC: Surpasses traditional AGC for both upstream and downstream
- Automated alignment: Simplifies initial setup for US/DS paths
- Precision adjustments: Electrical level and slope controls for accurate tuning
- Rugged construction: Enhanced ESD and surge protection
- The amplifier stages feature a 4th-generation architecture that expands usable gain ranges and delivers robust output levels—without compromising efficiency.

Intuitive Operation

Thanks to its advanced yet user-friendly design, the ICON3000 Series provides true plug-and-play functionality. With a single-button automatic alignment, even technicians with minimal experience can quickly install each unit in the field, reducing downtime and simplifying daily operations.

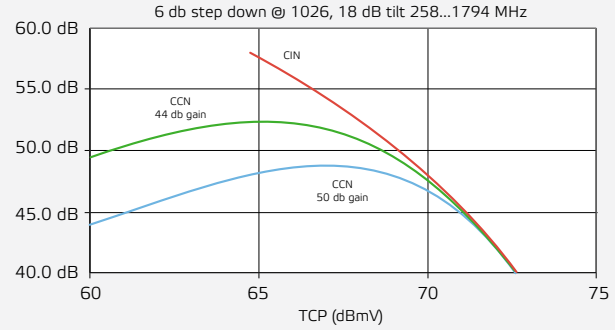
Effortless On-Site Management

A built-in USB port enables quick local access. Combined with wireless BT support, the ICON3000 integrates smoothly with Teleste's CATVisor software for smartphones and tablets, letting you configure and fine-tune directly in the field.

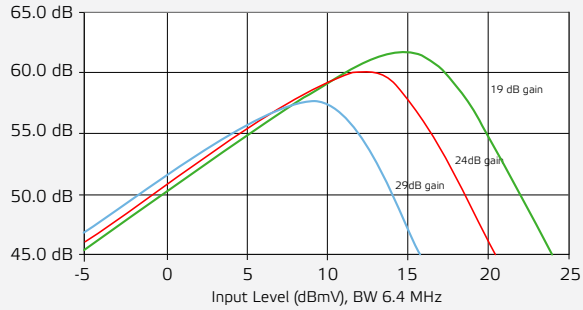


ICON3100/3101 block diagram

CCN @ 987 MHz (Downstream)



CCN @ 204 MHz, full load (Upstream)



ICON3100/3101 CCN charts

Future-Ready Performance

The ICON3000 Series redefines RF amplification for cable broadband, **bridging existing 750–1.2 GHz networks with upcoming 1.8 GHz**, DOCSIS® 4.0 expansions. By offering straightforward scalability and field-swappable plug-in units for new frequency splits, ICON3000 ensures your network can easily adapt to emerging demands.

Effortless Installation & Eliminate bench Upgrades

Designed for rapid deployment, ICON3000 features one-button automatic alignment for both upstream and downstream paths. Diplex filters can be swapped in the field, **eliminating the need for separate bench upgrades** and reducing downtime. Integration with both legacy and new housings makes network transitions seamless.

Superior Signal Performance and Reliability

Intelligent algorithms continuously optimize Modulation Error Ratio (MER) for robust, stable signals, while Automatic Level and Slope Control (**ALSC**) and Return Follows Forward (**RFF**) maintain consistent performance under challenging conditions. The amplifier also includes sophisticated features to compensate for both frequency-dependent losses and non-linear distortions introduced by long coaxial cable spans and passive network elements, minimizing signal degradation and ensuring consistent performance across the entire operating bandwidth. One such feature is the **haystack corrector**, which further refines frequency response and preserves signal quality for your subscribers.

Cost-Effective Operation

By automating alignments and speeding frequency-split changes, ICON3000 dramatically cuts labor costs and installation time. The inclusion of **power factor correction** also helps operators reduce energy consumption, making this amplifier a sound, long-term investment.

Real-Time Monitoring and Smart Automation

Optional telemetry provide remote oversight for both preventive maintenance and rapid troubleshooting, minimizing service calls. With **advanced ingress detection** and analytics, technicians can quickly pinpoint issues, ensuring peak performance and maximum uptime across your network.

ICON3000 SERIES LINE EXTENDER AMPLIFIERS

DOWNSTREAM SIGNAL PATH (values with diplex filters and ICON3000 housing)			
Frequency range	108...1794 MHz	**Nominal interstage slope**	20 dB
Return loss	18 dB	**Flatness**	±0.5 dB
Maximum gain	54 dB	**Test point**	-20 dB
Nominal operational gain	50 dB	**Noise figure**	10 dB
Gain control	9…54 dB	**Max. TCP**	70 dBmV
Input slope control	-10…20 dB	**CNN**	see graphs
Interstage slope control	11…26 dB		
LEVEL MEASUREMENT UNIT: ALSC AND SPECTRUM ANALYSER			
Forward path measurement range	138…1794 MHz, 0.25 MHz steps	**Dynamic range**	20…60 dBmV
Measurement bandwidth	0.5 MHz	**Detection mode**	Digital
Measurement inaccuracy	< 1.0 dB		
UPSTREAM SIGNAL PATH			
Frequency range	7…492 MHz	**Slope control**	2…22 dB
Return loss	18 dB	**Flatness**	±0.5 dB
Maximum gain	30 dB	**Test point**	-20 dB
Ingress switching	0 / -6 / < -45 dB	**Noise figure**	6.0 dB
Gain control	4…30 dB	**CNN**	see graphs
GENERAL CHARACTERISTICS			
Power consumption (90 Vac)	28 W	**Weight, fully equipped**	14 lbs (6.4 kg)
Supply voltage	40…90 Vac	**Weight: RF module**	3.5 lbs (1.6 kg)
Maximum current feed through	15 A / port	**Operating temperature**	-40…+140 °F (-40...+60 °C)
Hum modulation	65 dB / port	**Safety**	EN60728-11, EN62368-1, UL62368-1
AC current resistance	15 mΩ / port	**EMC**	EN50083-2, FCC part 15
Test point connectors	F male	**ESD**	4 kV
Dimensions (h x w x d) ICON3000 housing)	9.5" x 11.7" x 6.9" (242 mm x 296 mm x 174 mm)	**Surge**	6 kV, EN 60728-3, ANSI/SCTE 81
Dimensions (h x w x d) ICON3100/3101 RF module	6.3" x 10.0" x 2.6" (160 x 254 x 66 mm)		
PRODUCT CODES			
ICON3100 (492M/1G/1.8G)	RF module, Mini-USB	**ICON6996**	HMS v2 transponder
ICON3101 (492M/1.2G/1.8G)	RF module, USB-C	**ICON6404**	Wall mounting bracket
ICON3000	Housing	**ICON6902**	USB to BT module, Mini-USB
ICON6993	HMS v1 transponder	**ICON6903**	USB to BT module, USB-C

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