

DRG 100

Digital Residential Gateway

Reliable home gateway for high-quality broadband telephony

Key benefits:

- Optimized for residential and SME user needs
- Plug-n-Call™ voice activation
- Carrier-grade voice quality
- Fully automated activation process
- Remotely managed, allowing mass deployment



The DRG 100 series of VoIP CPEs lets operators and service providers deliver high-quality managed broadband telephony services with enhanced security to both residential and enterprise customers.

In combination with its element management system, the DRG 100 series provides easy and effective provisioning, administration, management, and control, ensuring the lowest total cost of ownership on the market.

The DRG 100 series provides a managed broadband telephony service with traditional PSTN features and PSTN quality that lets end users connect to broadband telephony and the Internet simultaneously, with no need of any additional equipment.

IP telephony with existing equipment

Broadband telephony services are accessible using standard analog phones or G3 fax machines. Connection is quick and easy using the existing phone wires or a jack right on the DRG 100 unit - no need to invest in expensive IP telephones.

Complete broadband services

The end user gets full broadband Internet access with no need of additional

equipment, thanks to a built-in router and NAT functionality in the DRG 100. If a more advanced system is needed, layer 2 switching and VLAN technology can be used to separate the services and operators.

High-quality IP telephony services

The DRG 100 series enables carrier-grade voice quality through priority mechanisms on the Ethernet and IP levels. The system supports narrowband and wideband speech codecs, as well as G3 fax and class 5 services (such as call waiting and 3-party calls). External class 5 services, provided by the IP telephony system, can be activated and deactivated.

Real-time VoIP performance monitoring

The DRG 100 series lets operators monitor real time VoIP performance, to stay on top of current network VoIP performance ensuring immediate discovery of problems and promoting proactive customer relations management.

Simplicity through Plug-n-Call™

The unique Plug-n-Call™ feature fully automates the broadband telephony service activation process and eliminates the technical constraints of many solutions on the market today. No interaction

from the end user is required during the installation and activation of the service. The Plug-n-Call™ feature simplifies the implementation process for the operator and service provider and makes broadband telephony available to a broader public.

Secure and reliable provisioning

The DRG 100 series utilizes HTTP transport for provisioning to secure a high tolerance of packet loss in the network. The actual configuration files are stored encrypted on the provisioning server and transported encrypted to the DRG 100 to ensure the highest level of security all the way from the HTTP server to the DRG 100.

Complying with a huge array of existing standards, the DRG 100 series operates in many different environments and networks, such as fiber, Ethernet, xDSL, cable TV, and fixed wireless networks.

DRG 100

Interfaces

Ethernet WAN (copper)	1 10/100 Base-TX (max. 100 m) RJ45 connector
Telephony (DRG111)	1 RJ11 connector for analog telephone (max. 500 m)
Telephony (DRG121)	2 RJ11 connectors for analog telephones (max. 500 m)
Ethernet LAN (DRG111 and 121)	1 10/100 Base-TX RJ45 connector (max. 100 m)

Security and QoS

Authentication per call (VoIP)	
PPPoE	
ToS / DiffServ	Level 3 (IP) mechanism for handling QoS
Class of service	Level 2 (Ethernet) mechanism for handling QoS
General	Adaptive jitter buffer, echo cancellation, speech sampling 10-100 ms, silence suppression with comfort noise
PLC	Packet Loss Concealment
AEC / LEC	Acoustic Echo Cancellation / Line Echo Cancellation
Router	Layer 3 routing/NAT, support for private IP addresses
VoIP performance monitoring	Via the standard syslog protocol VoIP performance data, such as jitter, packet loss, and delay; can be transmitted to a remote system

Telephone and fax services

Internal class 5 services	Call Waiting, 3-party calls, Call Forwarding, Caller Line Identification Presentation, Call Completion Busy Subscriber, Message Waiting Indicator, Call Alteration, Differentiated Ring Tones
External class 5 services	Activation of class 5 services supported by the IP telephone system
G3 / T38 fax	
Calling number identification	FSK, DTMF
3rd-party initiated pause and rerouting	External re-routing of media stream during speech, e.g. for prepaid calling cards and record announcements
DTMF	Inband and outband using H.245 and H.225 bi-directional
Subscriber Line Test	Remote SLT: 1. Hazardous voltage and foreign voltage 2. Resistive faults 3. Hook state 4. Ringer (REN) test

NAT Traversal

UPnP	Universal Plug and Play
STUN	Simple Traversal of UDP through NATs
SL-NAT	Self Learning NAT Traversal

Provisioning and management

P-n-C	Plug-n-Call™
Automatic downloading of configuration and firmware	
HTTP	Configuration and software downloading via HTTP
Internal web server	For local management, available with Administrator and User login to separate the configuration parameters
HDD	Home Device Director. For easy handling of provisioning and installation and for optimal handling of a large population of units

Flexibility and service differentiation

Regional settings properties	Telephone signals, tones, and cadences
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Protocols and standards

VoIP protocols supported	SIP, H.323, H.248, MGCP
Complies with the following standards	IPv4, TCP, UDP, RTP, DHCP, RTCP, SNMP, NAT, SDP, IEEE 802.1D, IEEE 802.1Q, IEEE 802.1P, IEEE 802.2, IEEE 802.3, ICMP, HTTP, HTTPS, TFTP, NTP, H.323v2/4, SIP (RFC3261), MGCP, G.711, G.729ab, G.723.1, G.165, G.167, G.168, G3, FSK, DTMF

Interoperability

DRG 100 series has been tested with	Alcatel, Centile, Cisco, Hotsip, Huawei, Iptel.org, Nortel, Philips, SNOM, Vocal, Ericsson
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Physical and environmental

Dimensions	25 mm (H) x 100 mm (D) x 150 mm (W), 0.98" (H) x 3.93" (D) x 5.90" (W)
Weight	Approximately 200 g, 0.44 lbs
Power requirements (incl. AC/DC adapter)	7.5-10.5 watts
Power supply	12V, external plug-in wall adapter, UPS optional
Front panel LEDs	POTS Line(s), LAN, WAN, PWR
Operating conditions	Temperature 0 °C to +50 °C, humidity 10–95% RH non-condensing

Regulatory compliance

EU directives for CE mark	Low Voltage Directive (LVD) 73/23/EEC, EMC 89/336/EEG
Safety	EN 60950 (2000)
Emissions	EN 55022:1998 Class B, EN 61000-3-2:2000, Class A EN 61000-3-3:2001, Flicker: FCC part 15 (1998) Class B
Immunity	EN 55024:2001