



DRG 400 series

DRG 480 products



The DRG 480 is a robust and manageable 8 port fiber/TP switch with VoIP, built for residential and enterprise environments.

The DRG

The DRG 480 is a robust fiber/TP switch with built-in VoIP ports, for mounting in wiring cabinets.

The DRG 480 is also adapted for mounting into a 19" rack, for installation in Central Office and enterprise environments.

DRG 480 provides up to 1 Gbps WAN access. It features 8 10/100 LAN ports, and 2 VoIP ports for telephony. DRG 480 is stackable and can be daisy-chained to provide 7 additional LAN ports and 2 additional VoIP ports.

An integrated serial port provides additional communication for services like telemetry and security.

As there is no fan built into the DRG 480, the product's life cycle is prolonged.

Autosensing between 100 Mbps or 1 Gbps speed to the Central Office is supported in DRG 480. The network owner can install a future proof DRG at the premises starting with 100 Mbps, and to later update to full Gigabit speed.

Advanced features and functionality for enterprise services

With its advanced VLAN support and L2 switching capabilities, DRG 480 naturally fits the requirements for delivering broadband services to small and medium-size enterprises. Other advanced features supported are non-blocking, queue-in-queue, and bandwidth shaping, to mention only a few.

Triple-play services for residential customers

The DRG 480 supports triple-play services, such as fast Internet access, IP telephony and IPTV.

The DRG 480 supports IGMP snooping, which allows multicast video streams to be routed only to LAN ports which have joined the multicast group, preventing unnecessary traffic on other ports.

IP-telephony

The DRG 480 supports the full range of Class 5 services (e.g. Call Waiting, 3-party call, Call Forwarding, Caller Line Identification Presentation), and is non-dependent on which softswitch is used. The DRG 480 complies with SIP, H.323, MGCP, and H.248 IP-telephony signaling protocols.

Managed solution

The DRG 480 is built on 42Network's well proven DRG series of gateways for the residential market. By introducing the DRG 480 network owners are offered a CPE portfolio covering residential and enterprise segments.

The DRG 480 can, as the whole 42Network's CPE portfolio, be managed remotely, including configuration and software upgrade that allows the operator to easily and efficiently manage and control a vast number of installed units. In addition, DRG 480 provides possibilities to collate quality measurement of voice and LAN ports.

Choice of FTTx networks

The DRG 480 can be used in fiber and/or copper networks and is ideal for the particular requirements of FTTx networks.

Product Specification for DRG 480

Interfaces						
Model	Port	Wavelength TX/RX (nm)	Max/Min output pwr (dBm)	Max/Min input pwr (dBm)	Speed (Mbps)	Specification
DRG 481	WAN	-	-	-	10/100/1000	Copper, UTP, Cat5, RJ-45
DRG 486s	WAN	1310/1550	-8/-14	0/-31	100	Single-mode, single-fiber, SC
DRG 486Gs	WAN	1310/1550	-3/-9	-3/-21	1000	Single-mode, single-fiber, SC
DRG 48x*	LAN	-	-	-	10/100	8 x Copper, UTP, Cat5, RJ-45
DRG 48x*	Telephony	-	-	-	N/A	2 x Analogue phones, RJ-11
DRG 48x*	Other	-	-	-	N/A	Serial port RS232, RJ-11

* x can be either 1 or 6

Telephone and Fax services	
VoIP protocols	SIP, H.323, MGCP, H.248
Speech Codecs	G.711, G.729ab, (G.723.1 available on request)
Class 5 services	Call Waiting, 3-Party Call, Call Alteration, Differentiated Ringing Signals, Call Forwarding, Calling Line Identification Presentation (CLIP), permanent and temporary CLIR (Calling Line Identification Restriction)
Fax	T.38
3rd Party initiated pause and re-routing	External re-routing of media stream during speech, e.g. for pre-paid calling card and record announcement
DTMF	Inband and outband using H.245 and H.225, RFC2833 or SIP INFO
Number of telephones	Up to 5 analogue telephones can be connected to each telephone port
Market adaptation	Possible to set telephony signals, tones, cadences, impedance, CLIP etc. according to local market requirements

Management	
SNMP management	SNMP v1, SNMP v2, MIB-II for statistics, Enterprise-specific DRG MIB for configuration
HTTP server	Two access levels for manual configuration, can be turned on/off remotely
TFTP/HTTP client	Software download
DHCP	Configuration support
HDD	Pre-integrated with 42Networks Element Management System, HDD, that allows optimal management of large populations of DRG units

Quality of Service	
DiffServ	Layer 3 (IP) QoS mechanism, 4 hardware queues for prioritization
Class of Service	IEEE 802.1p, Layer 2 (Ethernet) QoS mechanism, 4 hardware queues for prioritization
LAN-port priority	4 hardware queues
Internal delay (VoIP)	5-30 ms delay for decoding/encoding/AEC/internal operations in the DRG
Bandwidth shaping	Rate limitation per LAN-port
General	Adaptive or flexible jitter buffer, echo cancellation (G.165, G.168), speech sampling
IGMP snooping	10-60 ms, silence suppression with comfort noise
	IGMP v1, IGMP v2

Traffic Classification and Security	
VLAN	Services and port separation
VLAN stacking (Q-in-Q)	Service provider tagging
Hybrid links	Tagged and untagged traffic simultaneously on the same link
Authentication per registration	H225.0 RAS, SIP digest
Authentication per call	H235, SIP digest

Reliability	
MTBF	>150 000 hours
High availability	Configurable high availability through secondary gatekeeper

Physical	
Dimensions	38 mm (D) x 145 mm (H) x 200 mm (W)
Weight	Approximately 820 g
Power requirements (incl. AC/DC adapter)	7,5-10,5 watts
Power supply	12Vdc, external plug-in wall adapter, UPS optional
LED indicators	WAN, LAN per port, POTS per port, POWER
Operating conditions	Temperature 0°C to +40°C, humidity 5-95% RH non-condensing

Regulatory Compliance	
CE marked	
ETL marked	
FCC Part 15 Subpart B	
CB certified	
IEC/EN/UL 60950, IEC/EN/UL 60825, ETSI EN 300386	
RoHS directive 2002/95/EC	
WEEE directive 2002/95/EC	

Subject to change without notice