

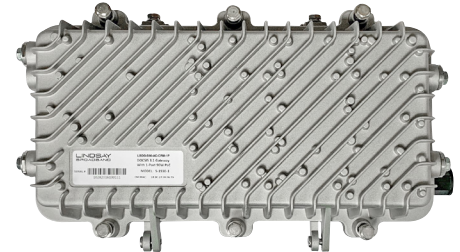
# PoE++ DOCSIS® Gateway 90 W Output with Cut-Off/Restore Module (CRM)

LBDG-S90-AC-CRM-1P

LINDSAY  
BROADBAND

Enable your preferred access point (AP) or IP camera with this cost-effective, Lindsay-tough DOCSIS®-based infrastructure now utilizing up to 90 W, 802.3bt Type 4 compliant.

Flexibility matters in 802.11 deployments. Lindsay's LBDG-S90-AC-CRM-1P DOCSIS gateway allows the use of high-power devices on the HFC strand. You can use a Lindsay Broadband recommended device, or any AP, IP camera, etc., that is compatible with 802.3bt Type 4 schemes. Designed to maintain reliability but minimize costs, the hardened LBDG uses a standards-based DOCSIS cable modem that is wholly under the control of the cable operator. It can be used in conjunction with SNMP monitoring systems to evaluate cable plant line conditions.

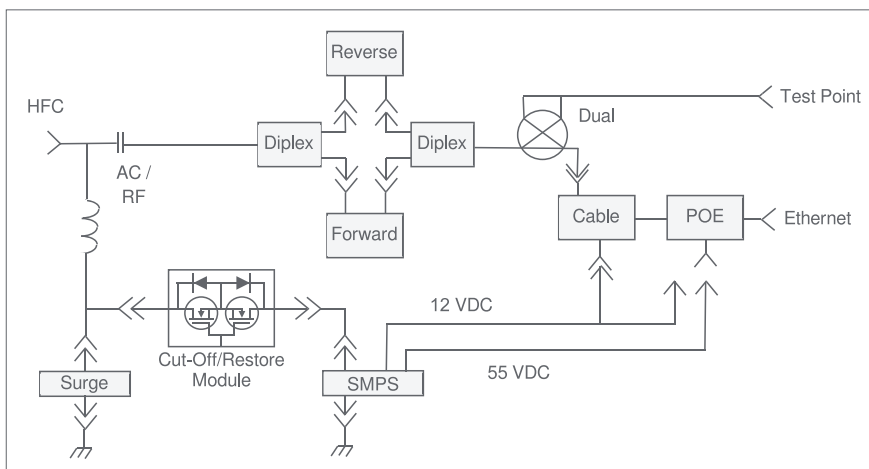


LBDG-S90-AC-CRM-1P  
(front view)

## FEATURES

- Diecast aluminum housing (clamshell)
- Mounting Configurations: Strand, vault, pedestal or wall
- Gasket provides 15 PSI weatherproof seal
- Operating Temperature Range: -40°C to +60°C (-40°F to +140°F)
- Designed to Protect against Surges: ANSI-IEEE C62.41 Cat B3 6 kV
- DOCSIS 3.0/3.1 compliant
- Cable plant-powered (40-90 VAC)
- Definable AC input voltage cut-off/restore control module prevents low voltage/high current problems
- HFC access at any directional coupler or power passing tap
- Weather-tight RJ45 Ethernet connector
- Coax power interface protects RF performance of HFC plant
- 802.3bt Type 4 (provides up to 90 W)
- Monitor & configure via SNMP agent, SSH or web browser
- Add Wi-Fi®, camera or other service-enabling device

## FUNCTIONAL SCHEMATIC





## SPECIFICATIONS

Parameter	Specification	
<b>Cable Modem</b>		
Band Plans	DOCSIS® 3.1	
Network Configuration & Management	TFTP, SNMP (V1, V2c, V3), Telnet, HTTP	
Input Impedance	75 Ω	
Privacy	BPI+	
Downstream Modulation	Up to 32 SCQAM or 2 OFDM	
RF Input Sensitivity <sup>(1)</sup>	Modem F-port	+15 to -15 dBmV
	Housing 5/8" Port	+20 to -10 dBmV
Upstream Modulation	Up to 8 SCQAM or 2 OFDMA	
Upstream Data Rate (Max.)	Over 1 Gbps	
Transmit Power (Max.)	Modem F-port	+65 dBmV for OFDMA
		+57 dBmV for 16 QAM, 4-8 upstreams
	Housing 5/8" Port	+61 dBmV for OFDMA
		+53 dBmV for 16 QAM, 4-8 upstreams
<b>HFC</b>		
Return Loss	-16 dB (min.) with 75 Ω termination	
	-8 dB (min.) with termination by modem	
Insertion Loss <sup>(1)</sup>	Downstream: -5 dB (± 1 dB)	
	Upstream: -4 dB (± 1 dB)	
Test Point	-20 dB relative to cable modem RF-port	
Pad Type	JXP, separate forward & reverse	
EMI Isolation	100 dB (5-1000 MHz)	
Surge Withstand (HFC)	ANSI-IEEE C62.41 Cat B3 6 kV (gas tube or solid state crowbar)	
Input Voltage Range	40-90 VAC (pseudo sine)	
Definable AC Input Cut-Off/Restore Function	Factory set to order (4 VAC min. hysteresis between cut-off & restore voltages)	
<b>Ethernet</b>		
Throughput	10/100/1000 Mbps	
Reach	109.4 yd (100 m)	
Interface	RJ45	
PoE	Type	802.3bt Type 4, 802.3at
	Voltage	55 VDC
	Output Wattage	90 W using all 4 pairs 92.5 W peak
<b>Environmental &amp; Physical</b>		
Ingress Protection	IP68 (15 PSI for 10 seconds)	
Operating Temperature	-40°C to +60°C (-40°F to +140°F)	
Dimensions (H x W x D)	10"H x 17"W x 6.5"D (25.4H x 43.2D x 16.5W cm)	
Weight	16.8 lb (7.6 kg)	

### NOTE:

<sup>(1)</sup> Levels reported by modem management interfaces reference the modem F-port. Levels at the gateway KS-port incorporate the internal -5 dB/-4 dB loss of the HFC interface

## ORDERING INFORMATION

Part #	Description
LBDG-S90-AC-CRM-1P	Strand-mounted PoE++ DOCSIS 3.1 gateway 90 W output with cut-off/restore module 8200/1PPOE