

# Extend the Reach of your HFC Networks

APPLICATION NOTE

LINDSAY  
BROADBAND

## Cost-Effective Connection for Rural Customers using Fiber Optics without Overbuilding the Existing HFC Plant

Lindsay's XTENDR™ HFC repeater is designed for easy extensions of existing HFC networks. The XTENDR device provides a suitable migration path and cost-effective connection of customers in rural areas using fiber optics without overbuilding the coaxial footprint of the HFC plant.

The XTENDR device includes a forward optical transmitter with an optional optical amplifier providing high output power to convert downstream RF signals to optical, and reverse optical receivers to convert upstream optical signals to RF. Customers that previously could not be reached with the traditional HFC network can now be served by using the HFC repeater in combination with Lindsay's 1.2 GHz LBON320AC mini RFoG node, or 1.2 GHz LBON520AC mini RFoG node with 1G/10G PON pass through port, at the customer premise.

Up to 16 rural subscribers can be reached within a distance of 20 km (65,000' / 12.5 mi) using this device (see Figure 1). Many other designs can be implemented to serve up to 32 rural subscribers from a single device.

## Convert RF to Optical Fiber with XTENDR™ HFC Repeater

*Lindsay's XTENDR devices are HFC-powered and can be strand, pole or wall mounted.*

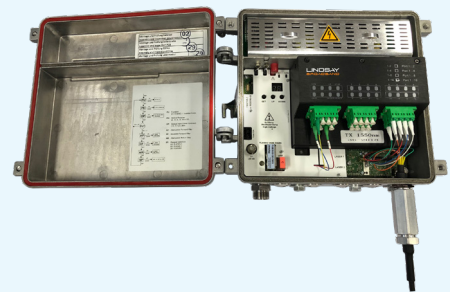
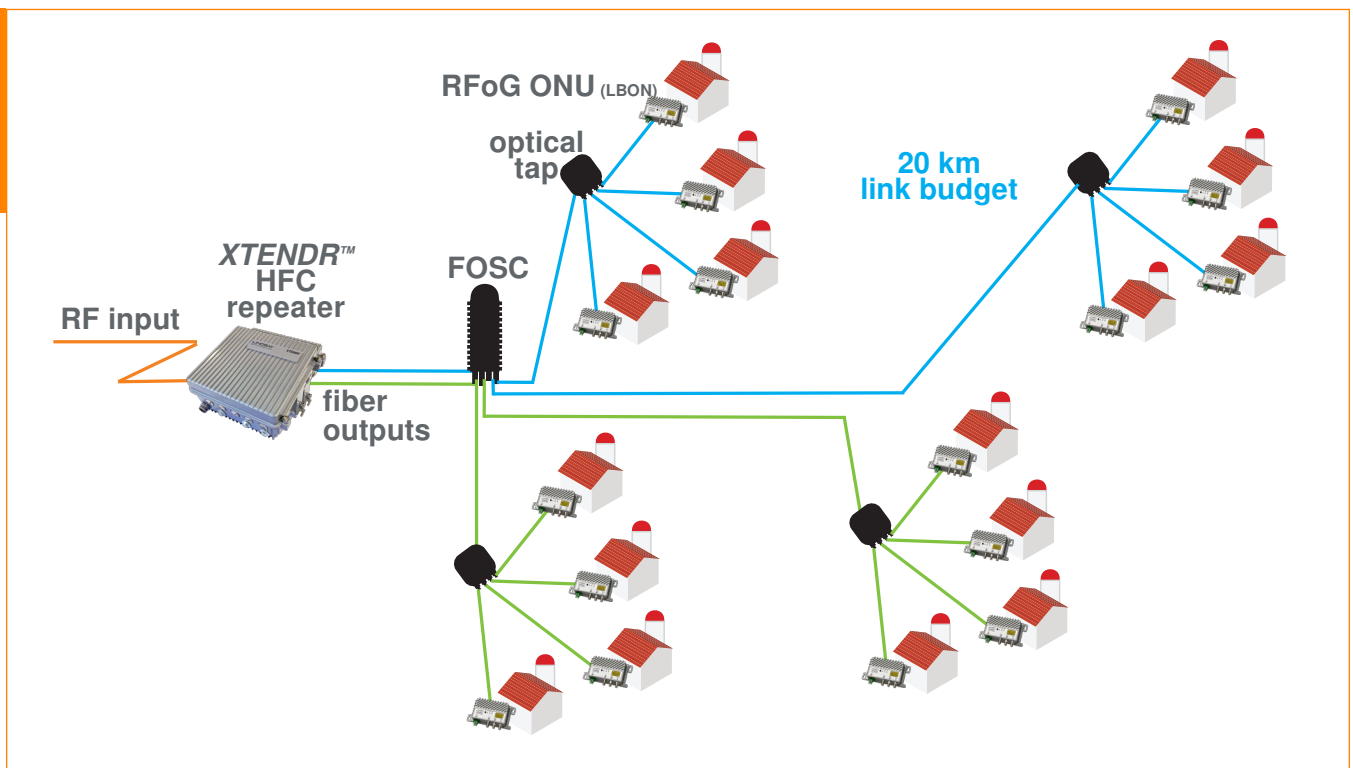


Figure 1



The return receivers in the device are DOCSIS® 3.1 capable, up to 204 MHz upstream bandwidth, wideband (1240 nm to 1620 nm; except 1540-1560 nm) multi diode receivers. Available duplex filter splits are 42/54, 85/102 or 204/258 MHz. The maximum downstream bandwidth is 1218 MHz.

The XTENDR device can be mounted on a strand or a pole and is outdoor-rated for operation from -40°C to +60°C (-40°F to +140°F). The device comes in an IP65 outdoor-rated housing and can be powered locally through a dedicated powering port, or remotely by combining power on the RF port with 40-90 VAC HFC power. Power consumption is less than 18 watts.

Lindsay offers end-to-end solutions for extending your existing HFC network including designing your network using our XTENDR HFC repeater and RFoG CPE devices.

## FEATURES

- 1218 MHz bandwidth & a variety of duplex filter split options to choose from (42/54, 85/102, 204/258 MHz plug-in duplex filter)
- 1550 nm DFB forward transmitter with an optional built-in EDFA for high output power per port
- Multi-diode return receivers eliminate OBI
- Available in 2, 4, 8 or 16 port configurations
- Electronic adjustable slope & attenuation for upstream & downstream RF
- 40-90 VAC HFC local powering through dedicated power port, or remote powering via RF port
- Can easily connect up to 16 rural subscribers over a span of 20 km (65,000'/12.5 mi)
- Test point for easy setup & troubleshooting
- Perfect in combination with Lindsay's LBON series mini nodes as CPE
- IP 65 outdoor enclosure & rated for outdoor temperatures -40°C to +60°C (-40°F to +140°F)
- Low power consumption
- Strand, pole or wall mounting
- High density LC/APC optical connectors

## LBON520/320AC RFoG ONUs



LBON520AC

LBON320AC

## ABOUT LINDSAY BROADBAND

Headquartered in Peterborough, Ontario, Canada, Lindsay Broadband is a designer, manufacturer, and integrator of broadband communication solutions. Lindsay's range of technologically advanced, proven solutions are helping communication service providers deliver new business services from their networks, find new sources of revenue, and meet the exponentially growing data needs of businesses and consumers.

Lindsay offers RF, optical, powering, and business services solutions. These solutions include end-to-end optical equipment, standby/non-standby network power supplies, UPS systems, LTE AC/DC power supplies, strand-mounted Wi-Fi® hotspots, optical and DOCSIS gateways, LTE small cell backhaul solutions, and RF solutions (including MDU and subscriber amplifiers, line extenders, hardline passives, DCs, multitaps, subscriber passives, cable modems and eMTAs). Founded in 1953, Lindsay distributes its solutions globally.

## CONTACT LINDSAY BROADBAND TODAY

*Lindsay Broadband's sales engineers develop customized applications to meet customers' needs. Lindsay's solutions enable you to turn up new services quickly and reliably.*

**Call us today +1.705.742.1350  
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