

Features

- Quad return path receiver for NC4000 series optical nodes
- Four separate RF signals (from optical inputs) combined into a single RF output
- Two dynamic optical input ranges
- Passband options of 5–45 MHz or 5–65 MHz
- Optical input level test points for each of four paths
- RF pad facilities provided for each of four signal legs
- Hot plug in/out
- Local and remote status monitoring capability

Analog Quad Return Receiver



The AR4041 series Analog Quad Return Path Receivers (RPRs) are designed as plug-in modules for Aurora's NC4000 optical nodes. These receivers are available for low or high RF gain (for corresponding optical input ranges of -7 to $+3$ dBm, or -15 to -7 dBm, respectively) for both 5–45 or 5–65 MHz passbands. Their compact design (single-width module) makes them the highest density packaging RPRs available.

To exploit the benefits of digital return technology, the high and low gain options of the AR4041 series receivers are each optimized for two very different applications. The high gain of the model AR4041H series makes them ideally suited for return paths in new FTTH architectures, where cascaded optical taps and NIUs are utilized. The low gain of the model AR4041L series, conversely, makes them the ideal candidate for receiving analog returns from up to four nodes each, where conversion to digital return and re-transmission is desired.

Following optical-to-electrical (O/E) conversion of the incoming optical signals, and prior to combining into a single common RF output signal, gain control of the RF signal of each path can be independently adjusted with plug-in pads (with 75 ohm pads used to terminate unused paths).

In Aurora's NC4000 series optical nodes, the combined RF signal of these receivers is typically used as input to a DT4000 series Digital Transceiver, where it is digitized and re-converted to an optical signal for transport back to the headend.

AR4041

Product Specifications

Physical:

- Dimensions:
4.0" D x 2.2" H x 2.2" W (10.2 cm x 5.6 cm x 5.6 cm)
- Weight:
0.6 lbs (0.27 kg)

Environmental:

- Operating temperature range: -40° to $+85^{\circ}\text{C}$ (-40° to 185°F)
- Storage temperature range: -40° to $+85^{\circ}\text{C}$ (-40° to 185°F)
- Humidity: 5% to 95% non-condensing

General:

- O/E transmission path: quad/combined
- Manual gain alignment
- Hot plug-in/out

RF and Optical Interface:

- RF output: connector at base of module
- Optical connectors: SC/APC

Power Requirements:

- Input voltage:
 $24 V_{\text{DC}}$
- Power consumption:
5 W

Optical:

- Wavelength: 1300nm – 1600nm
- Optical power input range:
Low gain : -7 to +3 dBm
High gain: -15 to -7 dBm

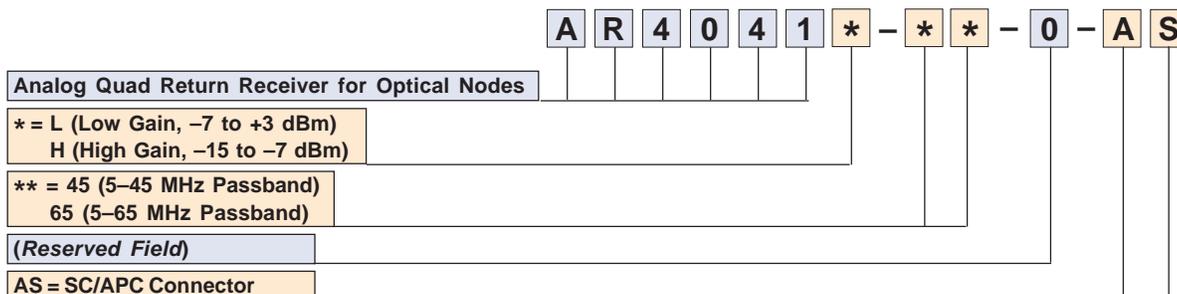
Electrical:

- Passband: 5–45 or 5–65 MHz
- Frequency response: ± 0.5 dB
- Standard output level: 2.5 dBmV (1% OMI, 1310nm)
- Output return loss: Minimum 18 dB
- Level stability: ± 0.5 dB
- Gain control range (each path): 0–20 dB (with plug-in pads)

Local Test Facilities:

- Optical input level test points (2.08 mm sockets):
 1 ± 0.2 V/mW
- Optical input LED indicator:
Green (input signal > -10 dBm)
Red (input signal < -10 dBm)

Ordering Information



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