

Headend Optics Platform (CH3000)

DR3450N

Quad Digital Return Receiver with Selectable Bandwidth Range

FEATURES

- Operates in three RF bandwidth ranges: 5-50 MHz, 5-65 MHz, or 5-100 MHz (firmware selectable)
- High packaging density, four receivers per single width, full-depth module
- Single channel link mode or dual channel "2-fer" link modes, selectable via software user interface
- High RF output: up to 38 dBmV per 6.4 MHz carrier in 50 MHz mode
- Concatenated or point to point applications
- 30+ dB of system RF gain from DT4250 transceiver input to receiver output
- Supports Return Transceivers from NC2000/NC4000, VHub, OM6000, HLN nodes, and CH3000 Chassis
- Superior noise performance
- Front access -20 dB RF test point, selectable for each input
- Hot plug-in/out
- Local and remote status monitoring
- Occupies one full-depth chassis slot



PRODUCT OVERVIEW

The DR3450N Quad Digital Return Receiver utilizes ARRIS's state-of-the-art digital reverse technology to receive 5–50 MHz, 5–65 MHz, or 5–100 MHz RF signals. 5–100 MHz modes can also be used to carry common mid-band splits such as 5–85 MHz RF return. Its capabilities allow deployment of compact and robust high-speed digital broadband systems.

ARRIS's DR3450N receiver interfaces with the BP3400C-AS Optical Receiver Back Plate, enabling up to sixteen digital receivers (four DR3450N modules per BP3400C back plate) to be installed in four adjacent module slots of ARRIS's 3RU CH3000 chassis. A total of 48 receivers (12 DR3450N modules) and three associated BP3400C back plates can be installed in a single CH3000 chassis while supported by redundant power supplies.

In single channel mode, each DR3450N receiver module can terminate digital return transmission from four node clusters. The data extracted from each optical link is converted through a high-speed digital-to-analog converter (DAC), resulting in a single RF output signal. Up to four optical links are received per module in this mode providing four RF outputs. The DR3450N also supports concatenation for daisy chaining of node signals in single channel modes.

In dual channel "2-fer" mode, each DR3450N module terminates up to two return path wavelengths. The advanced design provides simultaneous conversion of digital return path traffic from two RF return segments coming from the node on the same optical wavelength. Two wavelengths providing a total of four RF outputs are supported by each DR3450N module operating in "2-fer" mode.

Used in combination with NC2000/NC4000 and VHub based DT4250N Digital Transceivers with CWDM or DWDM SFPs in optical nodes, the "2-fer" mode of the DR3450N allows quick and cost effective doubling of the amount of return bandwidth available from any node in the network, therefore conserving and optimizing the cable operators' investment in the fiber network.

The DR3450N also supports digital RF Return protocols of ARRIS OM6000 Node DT7x30, HLN Node DT6250N, and CH3000 Chassis/Hub DT3550N Digital Transceivers, providing network integration and inter-operation with mixed ARRIS node and hub platforms.

SPECIFICATIONS

Characteristics	Specification
Physical	
Dimensions	13.0" D x 4.3" H (3RU) x 1.0" (33 cm x 11 cm x 2.5 cm)
Weight	1.6 lbs (0.72 kg)
Environmental	
Operating temperature range	-20° to +65°C (-4° to 149°F)
Storage temperature range	-40° to +85°C (-40° to 185°F)
Humidity	5% to 95% non-condensing
Optical Interface	
Optical connectors	LC/UPC (on the RR40x0 SFP in the BP3400C-00 Back Plate)
Electrical Interface	
Main RF outputs (each channel)	F-type female connector (on BP3400C-00 Back Plate)
RF output test point (selectable for each input port)	G-type female connector (front panel, -20 dB)
Power Requirement	
Input voltage	12 V _{DC} (provided via chassis mid-plane connection)
Module power consumption	20 W (includes 1/4 of fully loaded BP3400C-00 with all SFPs)
General	
	Hot plug-in/out
	Manual gain alignment
Optical (BP3400C-00 with RR40x0 SFP receiver)	See the RR40x0-00-PI data sheet for details.

SPECIFICATIONS

Characteristics

Specification

Electrical (RF Path – each channel)

Digital Transmitter Used in the Return Link with DR3450

Return Bandwidth/Loading	DT4250		DT4250		DT4250		
	5 - 50 MHz		5 - 65 MHz		5 - 100 MHz		
Operation Mode	1-fer	2-fer	1-fer	2-fer	1-fer	2-fer	1-fer
Line Rate (Gbps)	2.125	2.125	2.125	3.1875	4.25	4.25	2.125
Input Level (dBmV/Hz)	-60	-60	-62	-62	-63	-63	-63
System Min Full Gain (dB)	30	30	30	30	30	30	30
Output (dBmV/Hz)	-30	-30	-32	-32	-33	-33	-33
Output (dBmV/6.4 MHz Channel)	38	38	36	36	35	35	35
Dynamic Range (dB)	11	11	11	11	10	11	11
NPR at which Dynamic Range is specified (dB)	47	40	40	40	47	40	40
Peak NPR (dB)	54	49	49	49	52	48	48

Digital Transmitter Used in the Return Link with DR3450

Return Bandwidth/Loading	DT7030-85	DT7230-85		DT3550	DT6250	
	5 - 100 MHz	5 - 100 MHz		5 - 100 MHz	5 - 50 MHz	5 - 100 MHz
Operation Mode	1-fer Normal Gain ¹ Only	2-fer Normal Gain ¹	2-fer High Gain ¹	2-fer	2-fer	2-fer
Line Rate (Gbps)	4.250	4.250	4.250	4.250	2.125	4.250
Input Level (dBmV/Hz)	-60	-60	-60	-61	-69	-71
System Min Full Gain (dB) (with DR3450N Receiver)	26.5	26.5	28.5	27	38	38
Output (dBmV/Hz)	-33.5	-33.5	-31.5	-34	-31	-33
Output (dBmV/6.4 MHz Channel)	34.5	34.5	36.5	34	37	35
Dynamic Range (dB)	17	11	11	11	11	11
NPR at which Dynamic Range is specified (dB)	40	40	40	40	40	40
Peak NPR (dB)	49	49	49	47	47	47

Frequency response

± 0.5 dB

Output RF level adjustment range

0-26 dB (0.5 dB increments) (-58 dB for diagnostic)

Output return loss

18 dB minimum

Optical (BP3400C-00 with RR40x0 SFP receiver)

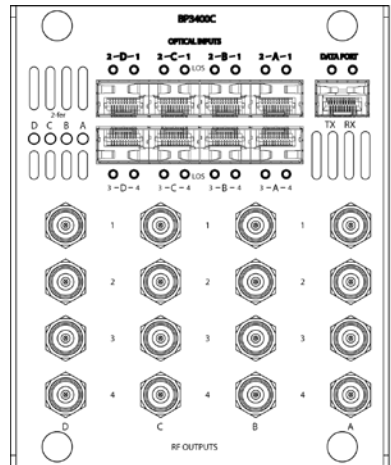
See the RR40x0-00-PI data sheet for details.

NOTE:

1. Normal/High gain set on DR3450. High Gain mode is intended only for use in DR3450N links connected to DT7230 transmitters in OM6000 nodes where extra gain is necessary to provide higher gain levels occasionally seen in legacy OM6000 to CHP-D2RRX links. High gain mode will consume up to 10% additional power consumption. High gain is not available for DT7030-85 or other listed transmitters.

ORDERING INFORMATION

Part Number	Description
DR3450N-50-00	Quad Digital Receiver supplied with 5-50 MHz and 5-100 MHz firmware pre-loaded
DR3450N-75-00	Quad Digital Receiver supplied with 5-65 MHz and 5-100 MHz firmware pre-loaded
BP3400C-00	Module Back Plate (Back plate and RR40x0 SFP Receiver must be ordered separately)



Each back plate accommodates up to four DR3450N receiver modules.

RELATED PRODUCTS

CH3000 Chassis	NC2000/NC4000/VHub Platforms
DT3550, DT4250, DT7x30, DT6250 Return Transceivers	OM6000 Node
Installation Services	

Customer Care

Contact Customer Care for product information and sales:

- United States: 866-36-ARRIS
- International: +1-678-473-5656

Note: Specifications are subject to change without notice.

Copyright Statement: ©ARRIS Enterprises, LLC, 2018. All rights reserved. No part of this publication may be reproduced in any form or by any means or used to make any derivative work (such as translation, transformation, or adaptation) without written permission from ARRIS Enterprises, LLC ("ARRIS"). ARRIS reserves the right to revise this publication and to make changes in content from time to time without obligation on the part of ARRIS to provide notification of such revision or change. ARRIS and the ARRIS logo are registered trademarks of ARRIS Enterprises, LLC. Other trademarks and trade names may be used in this document to refer to either the entities claiming the marks or the names of their products. ARRIS disclaims proprietary interest in the marks and names of others. The capabilities, system requirements and/or compatibility with third-party products described herein are subject to change without notice.