

COMMSCOPE NC 4000

1.2 GHZ SCALABLE NODE PLATFORM

The COMMSCOPE NC4000S4 series optical node platform supports a wide range of advanced architectures and is ideal for traditional HFC applications.



With an output level of up to 48 dBmV (56 dBmV virtual analog) at 1218 MHz on each of the four RF ports of the OA4344EG RF output amplifier, the NC4000S4 is designed as a „drop-in“ replacement for the NC4000S2 and NC4000SG and can be used to extend the frequency range of the coaxial network in standard HFC architectures. The high gain optical receivers feature automatic level control and support optical inputs between -7 and +2 dBm.

All four downstream and upstream paths can be fully segmented. For the return this is achieved using the DT4250 universal digital return transceiver supporting multiple modes of operation, a single („1-fer“), dual independent returns („2-fer“) or enhanced single return with increased performance and the option to cascade returns. Upstream transmission is enabled with plugin SFP modules supporting 1310 nm, 1550 nm, and CWDM or DWDM options.

- Output level – 56 dBmV at 1218 MHz
- Drop in upgrade for NC4000SG or NC4000S2
- 4x4 fully segmentable for HFC applications
- Four RF outputs, two auxiliary ports for power or video, and two fiber ports
- Multiple forward/return frequency split options
- Uses automotive blade fuses and JXP pads and equalizers
- Superior upstream performance via advanced universal digital return modules
- Integrated, all-digital node status monitoring
- Redundant power supply option
- Pedestal or strand mounting

SPECIFICATIONS

PHYSICAL	
Dimensions	50.8 cm L x 24.1 cm W x 27.3 cm D (20" x 9.5" x 10.75")
Weight	17.1 kg (38 lbs)
ENVIRONMENTAL	
Operating Temperature Range	-40° to +60°C (40° to +140°F)
Storage Temperature Range	-40° to +85°C (-40° to +185°F)
Relative Humidity	5% to 95% non-condensing

POWER REQUIREMENTS			
Operating Input voltage range		44 to 95 V _{RMS} (47-70 Hz Quasi-Square Wave)	
Power passing ²		15 A _{RMS}	
Power supply start-up input voltage		40-44 V _{RMS}	
Power supply turn off input voltage		34-38 V _{RMS}	
Power supply efficiency		83% typical	
DC power consumption		• 61 W (standard configuration of 4 RF outputs and 1 optical Rx) • 11.5 W (second optical receiver, AR4214e) • 6 W (Return transceiver, DT4250 with TR4000 SFP)	
GENERAL			
Passband options		Return	Forward
		5 – 42 MHz	51 – 1218 MHz
		5 – 65 MHz	85 – 1218 MHz
		5 – 85 MHz	102 – 1218 MHz
RF Test Points (Fwd and Rtn)		-20 dB	
Flatness ¹		± 1dB	
Output return loss (at the node output)		> 16 dB	
RF PERFORMANCE FOR HFC APPLICATIONS ³			
Channel Loading		Mixed	All Digital
	Up to 278 MHz	Analog (30 Channels)	
	284-1218 MHz	256 QAM/OFDM at -6 dBc	
Nominal output level (per port)		Analog	QAM/OFDM
	At 1218 MHz	56 dBmV	50 dBmV
	100 MHz	39.7 dBmV	33.7 dBmB
	At 51 MHz	39 dBmV	33 dBmV
Nominal slope	51 / 1218	17 dB linear	17 dB linear
Link performance			
	CCN (CNR + CIN)	51 dB	
	CSO	62 dB	
	CTB	64 dB	
	MER	> 40 dB	> 40 dB
	BER	< 1x10-6	< 1x10-6

Notes:

1. Measured at 25°C

2. Maximum current through any port

3. Performance with 0.0 dBm input to node's optical receiver from a 1.2 GHz Model HT33xxH-D-1310-2-AS Analog 1310 nm Transmitter

ORDERING INFORMATION

A typical configuration of the NC4000S4 series optical node includes the NH4000-H housing with external test ports, one PS4101 power supply, one optical receiver module AR4x14E with SC/APC connectors, the OA4344EG 4-port RF amplifier module, and standard equalizers and pads. A backup PS4101 power supply may be separately ordered. Also available are additional optional plug-in modules that are described on separate data sheets. These include FA4500 series optical amplifiers, DT4250 universal digital return transceivers, optical or RF redundancy switches, and return ingress switch options.