

SYSTEMAX II Optical Node Station 5-40/54-1000 MHz

Specifications of the Forward Optical RX only (MLE300SAFRCVR-SC/APC, -SC/UPC)		Specifications of the Low Gain Dual Node Amp only (MLE300SA-LGDNA)	
Pass Band:	54-1002 MHz	Forward Pass Band:	54-1000 MHz
Frequency Response:	+/-0.5 dB	Frequency Response:	+/-0.75 dB
Optical Input Range:	0.5 to 1.6 mW -3 to +2 dBm	Minimum Full Gain: (AGC Mode)	31 dB
RF Output Level @ -3 dBm:	21.5 dBmV	Operational Gain (Note 4): (MGC Mode)	26.9 dB
RF Output Level @ +2 dBm:	31.5 dBmV	Return Loss (75 ohm):	Typical -16 dB (+/-1.0)
Optical Monitor and Alert		Noise Figure @ 54 MHz:	5.9 dB
Optical Input Test Point (+/-10%):	1VDC/mW	Noise Figure @ 1000 MHz:	6.2 dB
LED = Off (indicates no Optical Input)		Distortion Measurements @ Rated Level (Notes 5,6)	
LED = Blue (low):	-3 dBm and lower	Reference Frequencies:	1000 / 870 / 750 / 54 MHz
LED = Green (good):	-3 dBm to +2 dBm	Output Levels:	49.5/48.4/47.1/36.9 dBmV
LED = Red (high):	+2 dBm and higher	CTB:	-61 dBc
Link Performance @ -3 dBm (Notes 1,2)		CSO:	-64 dBc
CNR:	49 dB	XMOD:	-59 dBc
CTB:	-69 dBc		
CSO:	-65 dBc	Return Pass Band:	5-40 MHz
Link Performance @ +2 dBm (Notes 1,3)		Frequency Response:	+/-0.5 dB
CNR:	52 dB	Operational Gain (Note 4) Main and Aux 1 Ports:	18.7 dB
CTB:	-71 dBc	Aux 2 Port:	21.8 dB
CSO:	-63 dBc	Noise Figure (worst case):	12.4 dB
		Distortion Measurements @ Rated Level (Note 6)	
		Reference Frequencies:	T7-T12 MHz
		Output Levels (flat out):	35 dBmV
		CTB:	-88 dBc
		CSO:	-88 dBc
		XMOD:	-78 dBc

Notes:

1. Measured using the following plug-ins in the Forward Optical Receiver module, Gain Pad = MPBNP10A-00, Slope Pad = MPBNP10A-00.
2. Measured using a C-COR DT-813C-TX transmitter at 15 dB link with 130 NTSC analog channels (no digital).
3. Measured using a C-COR DT-813C-TX transmitter at 10 dB link with 130 NTSC analog channels (no digital).

4. Includes 1 dB loss from the input EQ and 1 dB loss from the return EQ.
5. Distortions with 130 NTSC analog channels (no digital) and in MGC Mode.
6. Measured using the following plug-ins in the Low Gain Dual Node Amplifier, Input Pad = MMGIP2-00, Input Equalizer = 6-2E-0, Forward Roll Corrector = MLE1202FRC, Debumper = 18 AWG buss wire jumper, Interstage Equalizer = MLE1000-17, Interstage Pad = MMGIP2-00, Main Interstage Pad = MMGIP2-00, Aux 1/2 Interstage Pad = MMGIP2-00.5, Aux 1/2 Signal Director = MMGIP2-00, Main/ Aux 1/ Aux 2 Return Input Pads = MMGIP2-00, Return Equalizer = 6-2E-0, Return Roll Corrector = MLE1202RRC, Low Pass Filter = MLERF100104, Return Output Pad = MMGIP2-00.

Specifications of the Optical Node Station (Forward Optical Receiver + Low Gain Dual Node Amplifier)					
Parameter	Test Conditions	Units	Forward	Reverse	Notes
Pass Band	-	MHz	54-1000	5-40	-
Response Flatness	-	dB	+/-0.75	+/-0.5	-
AC Bypass Current (continuous)	-	A	15		-
Distortion Measurements @ Rated Level and a -3 dBm Optical Input					
Reference Frequencies	-	MHz	1000 / 870 / 750 / 550 / 54		-
Output Levels	-	dBmV	49.5 / 48.5 / 46.4 / 44.4 / 35		-
Channel Loading	-	NTSC	130		1
Composite Triple Beat	-	dBc	-61		1,2,3
Composite Second Order	-	dBc	-63		1,2,3
Cross Modulation	-	dBc	-59		1,2,3
Distortion Measurements @ Rated Level and a +2 dBm Optical Input					
Reference Frequencies	-	MHz	1000 / 870 / 750 / 550 / 54		-
Output Levels	-	dBmV	49.5 / 48.5 / 46.4 / 44.4 / 35		-
Channel Loading	-	NTSC	130		1
Composite Triple Beat	-	dBc	-60		1,2,4
Composite Second Order	-	dBc	-62		1,2,4
Cross Modulation	-	dBc	-59		1,2,4

Notes:

1. Measured using a C-COR DT-813C-TX transmitter at 10 dB link with 130 NTSC analog channels (no digital).
2. Measured using the following plug-ins in the Forward Optical Receiver module, Gain Pad = MPBNP10A-00, Slope Pad = MPBNP10A-03.
3. Measured using the following plug-ins in the Low Gain Dual Node Amplifier, Input Pad = MMGIP2-00, Input Equalizer = 6-2E-0, Forward Roll Corrector = MLE1202FRC, Debumper = 18 AWG buss wire jumper, Interstage Equalizer = MLE1000-17, Interstage Pad = MMGIP2-00, Main Interstage Pad = MMGIP2-00, Aux 1/2 Interstage Pad = MMGIP2-00.5, Aux 1/2 Signal Director = MMGIP2-00, Main/ Aux 1/ Aux 2 Return Input Pads = MMGIP2-00, Return Equalizer = 6-2E-0, Return Roll Corrector = MLE1202RRC, Low Pass Filter = MLERF100104, Return Output Pad = MMGIP2-00.

4. Measured using the following plug-ins in the Low Gain Dual Node Amplifier, Input Pad = MMGIP2-10, Input Equalizer = 6-2E-0, Forward Roll Corrector = MLE1202FRC, Debumper = 18 AWG buss wire jumper, Interstage Equalizer = MLE1000-17, Interstage Pad = MMGIP2-00, Main Interstage Pad = MMGIP2-00, Aux 1/2 Interstage Pad = MMGIP2-00.5, Aux 1/2 Signal Director = MMGIP2-00, Main/ Aux 1/ Aux 2 Return Input Pads = MMGIP2-00, Return Equalizer = 6-2E-0, Return Roll Corrector = MLE1202RRC, Low Pass Filter = MLERF100104, Return Output Pad = MMGIP2-00.

System Amplifier Node Housing Upgrade Instructions	
Original System Amplifier Node Housing Specifications	
Type of Node Housing	Amp Capacity
SA II	10 Amps
SA II+	10 Amps
Upgrade Instructions:	
<ol style="list-style-type: none"> 1. If the current seizure screws and anvils are "blue" in color, the System Amplifier Node housing has already been upgraded and nothing needs to be done. 2. If the current seizure screws and anvils are not "blue" in color, replace the seizure screws and anvils with SA part number 548775. 	
Type of Node Housing	Amp Capacity
SA III	15 Amps
Upgrade Instructions: Nothing needs to be done.	
Upgraded System Amplifier Node Housing Specifications	
Type of Node Housing	Amp Capacity
SA II	15 Amps
SA II+	15 Amps