C-COR FlexNet 900 Series **Trunk and Bridger Amplifiers**



Limited Availability Parts Grade / As-Is

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FlexNet® 900 Series Trunk and Bridger Amplifiers



C-COR *FlexNet 900 Series Trunk and Bridger Amplifiers* are ideally suited for HFC architectures delivering analog and digital signals.

FlexNet 900 Series Trunk and Bridger Amplifiers are also available with Transfer Linearization (TL) Technology, which improves the linear characteristics of standard, highly reliable silicon technology hybrids, thereby allowing for higher operating level capabilities and/or improved distortion performance, in addition to higher channel capacities and improved system level performance. TL enhanced products also translate into fewer active devices necessary in the HFC architecture, thus reducing maintenance, installation, and powering costs.

In addition, FlexNet 900 Series Trunk and Bridger Amplifiers can be upgraded to optical nodes with our naviCOR FlexNet Lid Upgrade.

And C-COR has established relationships with major providers of element management systems to provide rich, open, standards-based interfaces to our equipment, to ensure that our customers' needs are met.

FlexNet Trunk Amplifiers

The FlexNet Trunk (FNT) is a three active output station that provides one trunk level output and two distribution level outputs that can be field configurable to provide four outputs. FNTs provide a high performance trunk level output to "express" to other FNTs in a cascade for maximum distortion performance.

FlexNet Bridger Amplifiers

The FlexNet Bridger (FNB), which is used at the end of trunk-level lines, provides two active, high-level distribution outputs that can be field configurable to provide four outputs.

Features

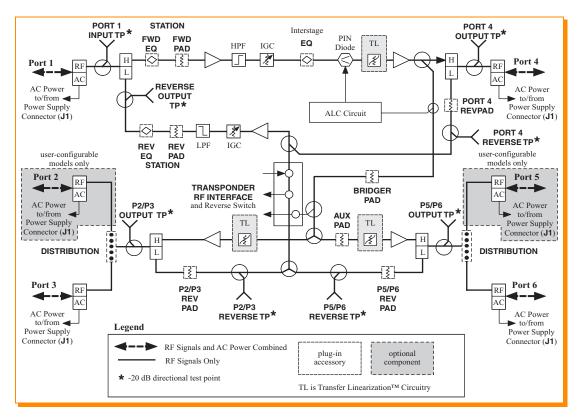
- TL Technology for improved performance capabilities over standard silicon-based technology
- High efficiency, switching regulator power supply for 60 or 90 volt operation
- Reversible RF module allows the amplifier to open to roadside
- Die-cast, aluminum alloy housing with unique RFI and weather sealing for durability and protection of internal electronics; pressure tested to 12 psi
- Optional 90° access to corner ports for improved cost effectiveness in underground installations
- Upgradable to an optical node with our naviCOR FlexNet Lid Upgrade



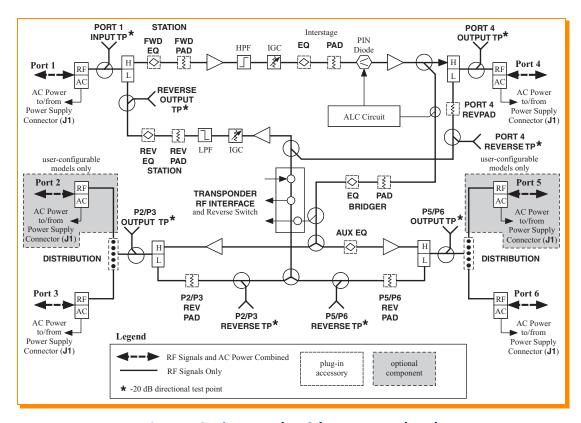
FlexNet Trunk and Bridger Amplifier Options

Model Numbers		Trunks:	FNT95Dx(-/T)xx6(H/P)xxx Series (862MHz versions) FNT9xCx Series (750MHz versions)	
		Bridgers:	FNB9(A/7)Dx(-/T)xx6(G/N)xxx Series (862MHz versions) FNB9xCx Series (750MHz versions)	
Series		FlexNet Trunk	Amplifiers with or without TL Technology	
		FlexNet Bridge	r Amplifiers with or without TL Technology	
Spacing		FNT95Dx Serie	s Trunk: 30dB PHD	а
		FNT95Dx Serie	s Bridger: 39dB PHD	a
		FNB9(A/7)Dx S	eries Bridger: 40dB PHD	a
		FNT97CJ Serie	s Trunk: 28dB PHD	b
		FNT97CJ Serie	s Bridger: 37dB PHD	b
		FNB98CJ Serie	s Bridger: 37 dB PHD	b
		FNT94CL Serie	s Trunk: 28dB PHD	c
		FNT94CL Serie	s Bridger: 37dB PHD	c
		FNT96CL Serie	s Trunk: 31 dB PHD	c
		FNT96CL Serie	s Bridger: 37dB PHD	c
		FNB96CL Serie	s Bridger: 37dB PHD	c
	Notes:	a) 18dB factor b) 11dB factor c) 17dB factor	y equalization.	
Bandwidth		862MHz or 75	OMHz	
Frequency Splits		40/54, 42/54N	1Hz, 55/70MHz, 65/80MHz	
	Note:	See Price List f	or detailed options.	
Level Control	770107	439.25MHz T	<u> </u>	
Level Control		455.25MHz T 455.25MHz T 495.25MHz T	/ /	
	Note:		or detailed options.	
D	Note.		<u> </u>	
Reverse		18 dB Active G		a
	Note:	a) Includes inte	rnal reverse testpoints.	
Output Configurations		FNT95DJ Serie	3 , , , , , , , , , , , , , , , , , , ,	a,b
			s: Bridger with 2 Outputs, User-configurable to 4 Outputs	a,b
			es: Trunk with 2 Bridger Outputs, User-configurable to 4 Outputs	a,b
		-	es: Bridger with 2 Outputs, User-configurable to 4 Outputs	a,b
			es: Trunk with 2 Bridger Outputs, User-configurable to 4 Outputs	a,b
		FNB97DN Seri	es: Bridger with 2 Outputs, User-configurable to 4 Outputs	a,b
		FNT94CL Serie	3 , , , , , , , , , , , , , , , , , , ,	
		FNT97CJ Serie	3 , ,	a,b
		FNB98CJ Serie	3 , ,	a,b
		FNT96CL Serie	3 1 , 3 1	a,c
		FNB96CL Serie	s: Bridger with 2 Outputs, User-configurable to 4 Outputs	a,c
	Notes:		ers and directional couplers must be ordered separately. nal or external testpoints. 8 testpoints.	
Powering		2.3A, 90V, 50	60Hz, H.E. Transformerless	а
	Note:	a) 40-90 Volt o	perating range.	
Housing		6-Port FlexNet	, 1 GHz, with Internal Testpoints	
			, 1 GHz, with External Testpoints	
Housing Finish		Standard	·	
		Corrosion Pro	rected	

Block Diagrams



FNT95DJT Series Trunk with TL Technology



FNT95DJT Series Trunk without TL Technology

Bridger amplifiers are similar to trunk amplifiers, with the exception of Port 4. Bridger amplifiers do not have Port 4 circuitry.

FlexNet Trunk Amplifier with TL Technology (RF Specifications) FNT95DJTxx6(H/P)6xx 862MHz, 42/54 Split

	FORV	VARD	REVERSE	
	Trunk	2 O/P Bridger	Trunk & 2 (D/P Bridger
General				
Passband, MHz	54-862		5-4	42
Housing, MHz	10	000	_	_
AC Current Passing, A				
Ports 1, 3, 4, 6	1	5	1	5
Ports 2, 5 ("H" and "P" options) (Note 1)	1	3	1.	3
Typical Operating Conditions				
Operational Gain, dB (Notes 2, 3, 4)	30	39	1	8
Channels, Number of NTSC (Note 5)	112/96/79	112/96/79	6	5
Operating Levels (Recommended)				
Frequency, MHz	862/750/650/550/54	862/750/650/550/54	42	/5
Input, dBmV min. (Note 6)	12.5/12/11.5/11/12	12.5/12/11.5/11/12	17/	17
Output, dBmV (Note 7)	42.5/40.5/39/37/28	51.5/49.5/48/46/37	35/	35
Performance Specifications @ Recommended Levels (Temperature Range: -40°C to +60°C)				
Carrier-to-Interference Ratio, dB (Note 8)				
Composite Triple Beat	71/76/80	62/70/75	8	9
Second Order Beat (F1 \pm F2)	_	_	_	_
Cross Modulation (per NCTA std.) (Note 9)	66/72/75	60/66/71	7	8
Third Order Beat (F1 \pm F2 \pm F3)	_	_	_	_
Composite 2IM	64/68/72	56/60/65	8	2
Composite Intermodulation Noise CIN (Note 10)	82	65		
Noise, 4MHz, 75Ohms	62/62/61.5/61/61	62/62/61.5/61/61	6	6
Noise Figure, dB (without EQ) (Note 11)	8.5/8/8/8/9	8.5/8/8/8/9	1	0
Full Gain, dB (without EQ and ALC)	35	44	1	9
Factory Alignment (with ALC Reserve, without EQ)				
Cable Loss, dB @ 862MHz	18	18	_	_
Flat Loss, dB	13	22	1	9
Gain Slope, dB	-0.25 to 1.0	-1.0 to 1.0	_	_
Flatness (@ Gain Slope), ±dB	0.5	0.75	0.	5
Return Loss, dB min., All Entry Ports	16	16	16	.5
Powering Requirements, Maximum/Typical (Note 12)			With Activ	e Reverse
AC Voltage, 60Hz			@ 90 <i>V</i>	@ 60V
AC Power, Watts		-	52/47.5	51.5/47
AC Current, mA			725/685	940/855
DC Current, mA @ 24V ± 0.5V			1895/1725	1895/1725
Level Control				
Range, dB @ 862MHz	± 4.	.0dB	_	_
Accuracy (–40°C to 60°C)	± 0.5dB		_	
Output Level Range (from nominal)	+2/-6dB		<u> </u>	
Pilot Frequency Band (Recommended)		ingle Channel)	_	_
Gain Control		· ·		
Plug-in PAD	SPE	3- <i>xx</i>	SPB	'-xx
Equalization to Compensate for Cable Loss			<u>-</u>	

FlexNet Trunk Amplifier with TL Technology (RF Specifications) FNT95DJTxx6(H/P)6xx 862MHz, 42/54 Split

	FORWARD		REVERSE
	Trunk	2 O/P Bridger	Trunk & 2 O/P Bridger
Chrominance/Luminance Delay, Maximum			
Channel 2, ns/3.58MHz		25	_
Channel 3, ns/3.58MHz		11	_
Channel 4, ns/3.58MHz		6	_
Channel 5, ns/3.58MHz		3.6	_
Reverse Group Delay, Maximum			
5.5 - 7MHz, ns		_	45
10 - 11.5MHz, ns		_	6
35 - 36.5MHz, ns		_	10
38.5 - 40MHz, ns		_	26
Hum Modulation (Time Domain @ 15A)			
5 - 750MHz, –dBc		60	60
751 - 862MHz, –dBc		55	_

Specification Document Number 601153 Rev B

NOTES:

- 1. FNT95DJTxx6(H/P)6xx trunk amplifiers provide one trunk output and two bridger outputs user-configurable to four outputs. Ports 2 and 5 provide the additional bridger outputs.
- 2. Spacing is at highest frequency with SEQ-862-xx installed. Reverse spacing includes losses due to housing, diplex filters, and MEQ-42-xx.
- 3. The specifications are based on the amplifier configured (with two SPB-0s) as a 2-Output Bridger with distribution outputs on Ports 3 and 6. When using distribution plug-ins, SS-1000-2, SDC-1000-8, or SDC-1000-12, levels should be derated accordingly based on the accessory specification.
- 4. Bridger Port operational gain is $9 \pm 0.75 \, dB$ as referenced to the Trunk.
- 5. NTSC video channels occupying the appropriate frequency spectrum per specified number of channels.
- 6. Recommended minimum forward input level at 862 MHz including loss due to equalizer.
- 7. Recommended maximum reverse output level at 42 MHz including loss due to equalizer.
- 8. Distortion performance is derated accordingly to take into account the influence of the digitally compressed channels operating at levels 6dB below equivalent video channels.
- 9. Cross modulation specification number indicates typical cascade performance.
- 10. Systems operating with digitally compressed channels or equivalent broadband noise from 550 to 862MHz at levels 6dB below equivalent video channels will experience a composite distortion (CIN) appearing as noise in the 54 to 550MHz frequency spectrum.
- 11. The Noise Figure and C/N specifications are "Typical" within specified passband.
- 12. Powering requirements indicated are with the power supply 122027-05. See Power Curves 333995-17 for typical performance under various operating conditions.
- 13. For the "H" output configuration option, –20dB internal forward and reverse directional testpoints. For the "P" output configuration option, –20dB external forward directional testpoints and –20dB internal reverse directional testpoints. Testpoint accuracy is ± 0.5 dB except the Port 1 forward input is ± 0.75 dB.

FlexNet Bridger Amplifier with TL Technology (RF Specifications) FNB9ADJTxx6(G/N)6xx 862MHz, 42/54 Split

	FORWARD	DE\/I	ERSE
	Bridger (ea)	Bridge	
General	Bridger (ea)	Bridge	er (ea)
Passband, MHz	54-862	5	42
Housing, MHz	1000	_	-
AC Current Passing, A	7000		
Ports 1, 3, 6	15	1	5
Ports 2, 5 (Note 1)	13		3
Typical Operating Conditions		•	
Operational Gain, dB (-0, +0.5) (Notes 2 and 3)	40	1	8
Channels, Number of NTSC (Note 4)	112/96/79		
Operating Levels (Recommended)	, , _, , , , ,		
Frequency, MHz	862/750/650/550/54	42	2/5
Input, dBmV min. (Note 5)	11.5/11/10.5/10/11		17
Output, dBmV (Note 6)	51.5/49.5/48/46/37	35/	
Performance Specifications @ Recommended Levels Temperature Range: -40°C to +60°C		·	
Carrier-to-Interference Ratio, dB (Note 7)			
Composite Triple Beat	59/69/73	8	9
Second Order Beat (F1 ± F2)	_	_	_
Cross Modulation (per NCTA std.) (Note 8)	<i>57</i> /65/69	7	8
Third Order Beat (F1 \pm F2 \pm F3)	_	_	_
Composite 2IM	59/62/67	8	2
Composite Intermodulation Noise CIN (Note 9)	65	_	
Noise, 4MHz, 75Ohms (Note 3)	61/60.5/60.5/60/60.5	67	5
Noise Figure, dB (without EQ) (Note 10)	8.5/8.5/8/8/8.5	8.	5
Full Gain, dB (without EQ and ALC)	45	1	9
Factory Alignment (with ALC Reserve, without EQ)			
Cable Loss, dB @ 862MHz	18	-	_
Flat Loss, dB	23	1	9
Gain Slope, dB	-1.0 to +1.0	±0	0.5
Flatness (@ Gain Slope), ±dB	0.75	0.	5
Return Loss, dB min., All Entry Ports	16	16	5.5
Powering Requirements, Maximum/Typical (Note 11)		With Activ	e Reverse
AC Voltage, 60Hz		@ 90 <i>V</i>	@ 60V
AC Power, Watts		48/44	47.5/43
AC Current, mA		690/650	870/790
DC Current, mA @ 24V ± 0.5V		1750/1585	1750/1585
Level Control			
Range, dB @ 862MHz	± 4.0dB	_	_
Accuracy (–40°C to 60°C)	± 0.5dB	_	_
Output Level Range (from nominal)	+2/-6dB	_	_
Pilot Frequency Band (Recommended)	439.25MHz (Single Channel)		
Gain Control			
Plug-in PAD	SPB-xx	SPE	?-xx
Equalization to Compensate for Cable Loss			
Plug-in Equalizers for Additional Equalization	SEQ-862-xx	MEQ	-42-x

FlexNet Bridger Amplifier with TL Technology (RF Specifications) FNB9ADJTxx6(G/N)6xx 862MHz, 42/54 Split

Bridger (ea) Bridger (ea) Chrominance/Luminance Delay, Maximum Channel 2, ns/3.58MHz 25 — Channel 4, ns/3.58MHz 11 — Channel 5, ns/3.58MHz 6 — Channel 5, ns/3.58MHz — — Reverse Group Delay, Maximum 5.5 - 7MHz, ns — 45 10 - 11.5MHz, ns — 45 35 - 36.5MHz, ns — 10 38.5 - 40MHz, ns — 26 Hum Modulation (Time Domain @ 15A) — 60 5 - 750MHz, -dBc 60 60 751 - 862MHz, -dBc 55 —		FORWARD	REVERSE
Channel 2, ns/3.58MHz 25 — Channel 3, ns/3.58MHz 11 — Channel 4, ns/3.58MHz 6 — Channel 5, ns/3.58MHz 3.6 — Reverse Group Delay, Maximum 5.5 - 7MHz, ns — 45 10 - 11.5MHz, ns — 6 35 - 36.5MHz, ns — 10 38.5 - 40MHz, ns — 26 Hum Modulation (Time Domain @ 15A) 5 - 750MHz, -dBc 60 60		Bridger (ea)	Bridger (ea)
Channel 3, ns/3.58MHz 11 — Channel 4, ns/3.58MHz 6 — Channel 5, ns/3.58MHz 3.6 — Reverse Group Delay, Maximum 5.5 - 7MHz, ns — 45 10 - 11.5MHz, ns — 6 35 - 36.5MHz, ns — 10 38.5 - 40MHz, ns — 26 Hum Modulation (Time Domain @ 15A) 60 60	Chrominance/Luminance Delay, Maximum		
Channel 4, ns/3.58MHz 6 — Channel 5, ns/3.58MHz 3.6 — Reverse Group Delay, Maximum 5.5 - 7MHz, ns — 45 10 - 11.5MHz, ns — 6 35 - 36.5MHz, ns — 10 38.5 - 40MHz, ns — 26 Hum Modulation (Time Domain @ 15A) 5 - 750MHz, -dBc 60 60	Channel 2, ns/3.58MHz	25	_
Channel 5, ns/3.58MHz 3.6 — Reverse Group Delay, Maximum 5.5 - 7MHz, ns — 45 10 - 11.5MHz, ns — 6 35 - 36.5MHz, ns — 10 38.5 - 40MHz, ns — 26 Hum Modulation (Time Domain @ 15A) 5 - 750MHz, −dBc 60 60	Channel 3, ns/3.58MHz	11	_
Reverse Group Delay, Maximum 5.5 - 7MHz, ns — 45 10 - 11.5MHz, ns — 6 35 - 36.5MHz, ns — 10 38.5 - 40MHz, ns — 26 Hum Modulation (Time Domain @ 15A) 5 - 750MHz, -dBc 60 60	Channel 4, ns/3.58MHz	6	_
5.5 - 7MHz, ns — 45 10 - 11.5MHz, ns — 6 35 - 36.5MHz, ns — 10 38.5 - 40MHz, ns — 26 Hum Modulation (Time Domain @ 15A) 5 - 750MHz, -dBc 60 60	Channel 5, ns/3.58MHz	3.6	_
10 - 11.5MHz, ns — 6 35 - 36.5MHz, ns — 10 38.5 - 40MHz, ns — 26 Hum Modulation (Time Domain @ 15A) 5 - 750MHz, -dBc 60 60	Reverse Group Delay, Maximum		
35 - 36.5MHz, ns — 10 38.5 - 40MHz, ns — 26 Hum Modulation (Time Domain @ 15A) 5 - 750MHz, -dBc 60 60	5.5 - 7MHz, ns	_	45
38.5 - 40MHz, ns — 26 Hum Modulation (Time Domain @ 15A) 5 - 750MHz, -dBc 60 60	10 - 11.5MHz, ns	_	6
Hum Modulation (Time Domain @ 15A) 5 - 750MHz, -dBc 60 60	35 - 36.5MHz, ns	_	10
5 - 750MHz, -dBc 60	38.5 - 40MHz, ns	_	26
	Hum Modulation (Time Domain @ 15A)		
751 - 862MHz, -dBc 55 —	5 - 750MHz, –dBc	60	60
	751 - 862MHz, –dBc		

Specification Document Number 601154 Rev C

NOTES:

- FNB9ADJTxx6(G/N)6xx bridger amplifiers provide two bridger outputs user-configurable to four outputs. Ports 2 and 5 provide the additional bridger outputs.
- 2. Spacing is at highest frequency with SEQ-862-xx installed. Reverse spacing includes losses due to housing, diplex filters, and MEQ-42-xx.
- 3. The specifications are based on the amplifier configured (with two SPB-0s) as a 2-Output Bridger with distribution outputs on Ports 3 and 6. When using distribution plug-ins, SS-1000-2, SDC-1000-8, or SDC-1000-12, levels should be derated accordingly based on the accessory specification.
- 4. NTSC video channels occupying the appropriate frequency spectrum per specified number of channels.
- 5. Recommended minimum forward input level at 862 MHz including loss due to equalizer.
- 6. Recommended maximum reverse output level at 42 MHz including loss due to equalizer.
- 7. Distortion performance is derated accordingly to take into account the influence of the digitally compressed channels operating at levels 6dB below equivalent video channels.
- 8. Cross modulation specification number indicates typical cascade performance.
- Systems operating with digitally compressed channels or equivalent broadband noise from 550 to 862MHz at levels 6dB below equivalent video channels will experience a composite distortion (CIN) appearing as noise in the 54 to 550MHz frequency spectrum.
- 10. The Noise Figure and C/N specifications are "Typical" within specified passband.
- 11. Powering requirements indicated are with the power supply 122027-05. See Power Curves 333995-17 for typical performance under various operating conditions.
- 12. For the "G" output configuration option, –20dB internal forward and reverse directional testpoints. For the "N" output configuration option, –20dB external forward directional testpoints and –20dB internal reverse directional testpoints. Testpoint accuracy is ± 0.5dB except the Port 1 forward input is ± 0.75dB.

FlexNet Trunk Amplifier (RF Specifications) FNT95DJ-xx6(H/P)6xx 862MHz, 42/54 Split

	FORV	VARD	REVI	
	Trunk	2 O/P Bridger	Trunk & 2 (D/P Bridger
General				
Passband, MHz	54-	862	5-4	42
Housing, MHz	10	000	_	_
AC Current Passing, A				
Ports 1, 3, 4, 6	1	5	1	5
Ports 2, 5 (Note 1)	1	3	1.	3
Typical Operating Conditions				
Operational Gain, dB (Notes 2, 3, and 4)	30	39	1	8
Channels, Number of NTSC (Note 5)	112/96/79	112/96/79	6	5
Operating Levels (Recommended)				
Frequency, MHz	862/750/650/550/54	862/750/650/550/54	42	/5
Input, dBmV Minimum (Note 6)	10.5/10/9.5/9/10	10.5/10/9.5/9/10	17/	17
Output, dBmV (Note 7)	40.5/38.5/37/35/26	49.5/47.5/46/44/35	35/	35
Performance Specifications @ Recommended Levels (Temperature Range: -40°C to +60°C)				
Carrier-to-Interference Ratio, dB (Note 8)				
Composite Triple Beat	71/75/81	57/61/69	8	9
Second Order Beat (F1 \pm F2)	_	_	_	_
Cross Modulation (per NCTA std.) (Note 9)	68/72/76	57/60/66	7	8
Third Order Beat (F1 \pm F2 \pm F3)	_	_	_	_
Composite 2IM	70/75/79	67/70/73	8	2
Composite Intermodulation Noise CIN (Note 10)	82	65	_	_
Noise, 4MHz, 75Ohms	60/60/59.5/59/59	60/60/59.5/59/59	6	2
Noise Figure, dB (without EQ) (Note 11)	8.5/8/8/8/9	8.5/8/8/8/9	1	4
Full Gain, dB (without EQ and ALC)	35	44	1	9
Factory Alignment (with ALC Reserve, without EQ)				
Cable Loss, dB @ 862MHz	18	18	_	_
Flat Loss, dB	13	22	1	9
Gain Slope, dB	-0.25 to 1.0	-1.0 to 1.0	_	_
Flatness (@ Gain Slope), ±dB	0.5	0.75	0.	5
Return Loss, dB Minimum, All Entry Ports	16	16	16	.5
Powering Requirements, Maximum/Typical (Note 12)			With Activ	e Reverse
AC Voltage, 60Hz			@ 90V	@ 60V
AC Power, Watts		-	56.5/52	55.5/51
AC Current, mA			760/720	1015/935
DC Current, mA @ 24V ± 0.5V			2055/1885	2055/188
evel Control				
Range, dB @ 862MHz	± 4.	.0dB	_	_
Accuracy (–40°C to 60°C)	± 0.	.5dB	_	_
Output Level Range (from nominal)	+2/-	-6dB	_	_
Pilot Frequency Band (Recommended)	439.25MHz (S	ingle Channel)	_	_
Gain Control	· ·	· · ·		
Plug-in PAD	SPE	3- <i>xx</i>	SPB	'-xx
Equalization to Compensate for Cable Loss				

FlexNet Trunk Amplifier (RF Specifications) FNT95DJ-xx6(H/P)6xx 862MHz, 42/54 Split

	FORWARD		REVERSE
	Trunk	2 O/P Bridger	Trunk & 2 O/P Bridger
Chrominance/Luminance Delay, Maximum			
Channel 2, ns/3.58MHz		25	_
Channel 3, ns/3.58MHz		11	_
Channel 4, ns/3.58MHz		6	_
Channel 5, ns/3.58MHz		3.6	_
Reverse Group Delay, Maximum			
5.5 - 7MHz, ns		_	45
10 - 11.5MHz, ns		_	6
35 - 36.5MHz, ns		_	10
38.5 - 40MHz, ns		_	26
Hum Modulation (Time Domain @ 15A)			
5 - 10MHz, –dBc		_	55
11 - 750MHz, –dBc		60	60
751 - 862MHz, –dBc		55	

Specification Document Numbers 600967 Rev D and 600930 Rev E

NOTES:

- 1. FNT95DJTxx6(H/P)6 trunk amplifiers provide one trunk output and two bridger outputs user-configurable to four outputs. Ports 2 and 5 provide the additional bridger outputs, and if used, have reduced AC current passing capability.
- 2. Spacing is at highest frequency with SEQ-862-xx installed. Reverse spacing includes losses due to housing, diplex filters, and MEQ-42-xx.
- 3. The specifications are based on the node configured (with two SPB-0s) as a 2-Output Bridger with distribution outputs on Ports 3 and 6. When using distribution plug-ins, SS-1000-2, SDC-1000-8, or SDC-1000-12, levels should be derated accordingly based on the accessory specification.
- 4. Bridger port gain and flatness is $9 \pm 0.75 \, dB$ as referenced to the Trunk port.
- 5. NTSC video channels occupying the appropriate frequency spectrum per specified number of channels.
- 6. Recommended minimum forward input level at 862 MHz including loss due to equalizer.
- 7. Recommended maximum reverse output level at 42 MHz including loss due to equalizer.
- 8. Distortion performance is derated accordingly to take into account the influence of the digitally compressed channels operating at levels 6dB below equivalent video channels.
- 9. Cross modulation specification number indicates typical cascade performance.
- Systems operating with digitally compressed channels or equivalent broadband noise from 550 to 862MHz at levels 6dB below equivalent video channels will experience a composite distortion (CIN) appearing as noise in the 54 to 550MHz frequency spectrum.
- 11. The Noise Figure and C/N specifications are "Typical" within specified passband.
- 12. Powering requirements indicated are with the power supply 122027-05. See Power Curves 333995-17 for typical performance under various operating conditions.
- 13. For the "H" output configuration option, –20dB internal forward and reverse directional testpoints. For the "P" output configuration option, –20dB external forward directional testpoints and –20dB internal reverse directional testpoints. Testpoint accuracy is ± 0.5dB except the Port 1 forward input is +0.75dB

FlexNet Bridger Amplifier (RF Specifications) FNB9ADJ-xx6(G/N)6xx 862MHz, 42/54 Split

	FORWARD	REVI	ERSE
	Bridger (ea)	Bridge	er (ea)
General			
Passband, MHz	54-862	5-4	42
Housing, MHz	1000	_	_
AC Current Passing, A			
Ports 1, 3, 6	15	1	5
Ports 2, 5 (Note 1)	13	1	3
Typical Operating Conditions			
Operational Gain, dB (–0, +0.5) (Notes 2 and 3)	40	1	8
Channels, Number of NTSC (Note 4)	112/96/79	ϵ	5
Operating Levels (Recommended)			
Frequency, MHz	862/750/650/550/54	42	/5
Input, dBmV Minimum (Note 5)	9.5/9/8.5/8/9	17/	17
Output, dBmV (Note 6)	49.5/47.5/46/44/35	35/	35
Performance Specifications @ Recommended Levels Temperature Range: -40°C to +60°C			
Carrier-to-Interference Ratio, dB (Note 7)			
Composite Triple Beat	58/63/70	8	9
Second Order Beat (F1 \pm F2)	_	_	_
Cross Modulation (per NCTA std.) (Note 8)	58/62/69	7	8
Third Order Beat (F1 \pm F2 \pm F3)	_	_	_
Composite 2IM	65/67/70	8	2
Composite Intermodulation Noise CIN (Note 9)	65	_	
Noise, 4MHz, 75Ohms (Note 3)	58.5/59/58/58/58	64	
Noise Figure, dB (without EQ) (Note 10)	9/8.5/8/8/9	1	2
Full Gain, dB (without EQ and ALC)	45	1	9
Factory Alignment (with ALC Reserve, without EQ)			
Cable Loss, dB @ 862MHz	18	_	_
Flat Loss, dB	23	1	9
Gain Slope, dB	-1.0 to +1.0	_	_
Flatness (@ Gain Slope), ±dB	0.75	0.	5
Return Loss, dB Minimum, All Entry Ports	16	16	.5
Powering Requirements, Maximum/Typical (Note 11)		With Activ	e Reverse
AC Voltage, 60Hz		@ 90 <i>V</i>	@ 60V
AC Power, Watts		48/44	47.5/43
AC Current, mA		690/650	870/790
DC Current, mA @ 24V ± 0.5V		1750/1585	1750/158
Level Control			
Range, dB @ 862MHz	± 4.0dB	_	_
Accuracy (–40°C to 60°C)	± 0.5dB	_	_
Output Level Range (from nominal)	+2/-6dB	_	_
Pilot Frequency Band (Recommended)	439.25MHz (Single Channel)	_	_
Gain Control	. 5		
	SPB-xx	SPB	'-xx
Plug-in PAD Equalization to Compensate for Cable Loss			

FlexNet Bridger Amplifier (RF Specifications) FNB9ADJ-xx6(G/N)6xx 862MHz, 42/54 Split

	FORWARD	REVERSE
	Bridger (ea)	Bridger (ea)
Chrominance/Luminance Delay, Maximum		
Channel 2, ns/3.58MHz	25	_
Channel 3, ns/3.58MHz	11	_
Channel 4, ns/3.58MHz	6	_
Channel 5, ns/3.58MHz	3.6	_
Reverse Group Delay, Maximum		
5.5 - 7MHz, ns	_	45
10 - 11.5MHz, ns	_	6
35 - 36.5MHz, ns	_	10
38.5 - 40MHz, ns	_	26
Hum Modulation (Time Domain @ 15A)		
5 - 10MHz, –dBc	_	55
11 - 750MHz, –dBc	60	60
751 - 862MHz, –dBc	55	_

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NOTES:

- 1. FNB9ADJ-xx6(G/N)6xx bridger amplifiers provide two bridger outputs user-configurable to four outputs. Ports 2 and 5 provide the additional bridger outputs, and if used, have reduced AC current passing capability.
- 2. Spacing is at highest frequency with SEQ-862-xx installed. Reverse spacing includes losses due to housing, diplex filters, and MEQ-42-xx.
- 3. The specifications are based on the node configured (with two SPB-0s) as a 2-Output Bridger with distribution outputs on Ports 3 and 6. When using distribution plug-ins, SS-1000-2, SDC-1000-8, or SDC-1000-12, levels should be derated accordingly based on the accessory specification.
- 4. NTSC video channels occupying the appropriate frequency spectrum per specified number of channels.
- 5. Recommended minimum forward input level at 862 MHz including loss due to equalizer.
- 6. Recommended maximum reverse output level at 42 MHz including loss due to equalizer.
- 7. Distortion performance is derated accordingly to take into account the influence of the digitally compressed channels operating at levels 6dB below equivalent video channels.
- 8. Cross modulation specification number indicates typical cascade performance.
- 9. Systems operating with digitally compressed channels or equivalent broadband noise from 550 to 862MHz at levels 6dB below equivalent video channels will experience a composite distortion (CIN) appearing as noise in the 54 to 550MHz frequency spectrum.
- 10. The Noise Figure and C/N specifications are "Typical" within specified passband.
- 11. Powering requirements indicated are with the power supply 122027-05. See Power Curves 333995-17 for typical performance under various operating conditions.
- 12. For the "G" output configuration option, –20dB internal forward and reverse directional testpoints. For the "N" output configuration option, –20dB external forward directional testpoints and –20dB internal reverse directional testpoints. For the "E" output configuration option, –25dB external forward directional testpoints and –25dB internal reverse directional testpoints. Testpoint accuracy is ±0.5dB except the Port 1 forward input is +0.75dB

FlexNet Trunk Amplifier with TL Technology (RF Specifications) FNT95DQTxx6(H/P)6xx 55/70 Split

		VARD	REVI	ERSE D/P Bridger
General	Trunk	2 O/P Bridger	Trunk & 2 (эл впадег
Passband, MHz	70-862		5-5	55
Housing, MHz	1000		J	,
AC Current Passing, A	70	000	_	_
•	1	5	1	5
Ports 1, 3, 4, 6 Ports 2, 5 (Note 1)		3	1.	
	ı	3	1.	
Typical Operating Conditions Operational Gain, dB (Notes 2, 3, and 4)	30	39	1	0
•			1	
Channels, Number of NTSC (Note 5)	109/93/76	109/93/76	6	•
Operating Levels (Recommended)	062/750/650/550/70	063/750/650/550/70		
Frequency, MHz	862/750/650/550/70	862/750/650/550/70	55	
Input, dBmV Minimum (Note 6)	12.5/12/11.5/11/11.5	12.5/12/11.5/11/11.5	1 <i>7</i> /	
Output, dBmV (Note 7)	42.5/40.5/39/37/28.5	51.5/49.5/48/46/37.5	35/	['] 35
Performance Specifications @ Recommended Levels (Temperature Range: -40°C to +60°C)				
Carrier-to-Interference Ratio, dB (Note 8)				
Composite Triple Beat	71/76/80	62/70/75	8	9
Second Order Beat (F1 \pm F2)	_	_	_	_
Cross Modulation (per NCTA std.) (Note 9)	66/72/75	60/66/71	7	8
Third Order Beat (F1 \pm F2 \pm F3)	_	_	_	_
Composite 2IM	64/68/72	56/60/65	8	2
Composite Intermodulation Noise CIN (Note 10)	82	65	_	_
Noise, 4MHz, 75Ohms (Note 3)	62/62/61.5/61/60.5	62/62/61.5/61/60.5	6	6
Noise Figure, dB (without EQ) (Note 11)	8.5/8/8/8/9	8.5/8/8/8/9	10	
Full Gain, dB (without EQ and ALC)	35	44	1	9
Factory Alignment (with ALC Reserve, without EQ)				
Cable Loss, dB @ 862MHz	18	18	_	_
Flat Loss, dB	13	22	1	9
Gain Slope, dB	-0.25 to 1.0	-1.0 to 1.0	_	_
Flatness (@ Gain Slope), ±dB	0.5	0.75	0.	5
Return Loss, dB Minimum, All Entry Ports	16	16	16	5.5
Powering Requirements, Maximum/Typical (Note 12)			With Activ	e Reverse
AC Voltage, 60Hz			@ 90V	@ 60 <i>V</i>
AC Power, Watts		-	52/47.5	51.5/47
AC Current, mA			725/685	940/855
DC Current, mA @ 24V ± 0.5V			1895/1725	1895/1725
Level Control				
Range, dB @ 862MHz	+ 4	.0dB	_	_
Accuracy (–40°C to 60°C)			_	_
Output Level Range (from nominal)	± 0.5dB +2/-6dB		_	
Pilot Frequency Band (Recommended)		ingle Channel)	_	_
Gain Control	459.25101112 (5	ingle Charmer		
	CDI	3-xx	SPB	!-vv
Plug-in PAD Equalization to Compensate for Cable Loss	371)-VV	375	- ^
	550.0	262 vv	A 450	EE v
Plug-in Equalizers for Additional Equalization	SEQ-8	362-xx	MEQ-	- CC-X
Chrominance/Luminance Delay, Maximum	_			
Channel 5, ns/3.58MHz		1	_	_
Channel 6, ns/3.58MHz		5	_	

FlexNet Trunk Amplifier with TL Technology (RF Specifications) FNT95DQTxx6(H/P)6xx 55/70 Split

	FORWARD		REVERSE
	Trunk	2 O/P Bridger	Trunk & 2 O/P Bridger
Reverse Group Delay, Maximum			
5.5 - 7MHz, ns		_	45
10 - 11.5MHz, ns		_	6
52 - 53.5MHz, ns		_	16
53.5 - 55MHz, ns		_	33
Hum Modulation (Time Domain @ 15A)			
5 - 750MHz, –dBc		60	60
751 - 862MHz, –dBc		55	_

Preliminary Specifications

NOTES:

- 1. FNT95DQTxx6(H/P)6xx trunk amplifiers provide one trunk output and two bridger outputs user-configurable to four outputs. Ports 2 and 5 provide the additional bridger outputs, and if used, have reduced AC current passing capability.
- 2. Spacing is at highest frequency with SEQ-862-xx installed. Reverse spacing includes losses due to housing, diplex filters, and MEQ-55-xx.
- 3. The specifications are based on the node configured (with two SPB-0s) as a 2-Output Bridger with distribution outputs on Ports 3 and 6. When using distribution plug-ins, SS-1000-2, SDC-1000-8, or SDC-1000-12, levels should be derated accordingly based on the accessory specification.
- 4. Bridger Port gain is 9 to 9.75dB above the Trunk Port.
- 5. NTSC video channels occupying the appropriate frequency spectrum per specified number of channels.
- 6. Recommended minimum forward input level at 862 MHz including loss due to equalizer.
- 7. Recommended maximum reverse output level at 55 MHz including loss due to equalizer.
- 8. Distortion performance is derated accordingly to take into account the influence of the digitally compressed channels operating at levels 6dB below equivalent video channels.
- 9. Cross modulation specification number indicates typical cascade performance.
- Systems operating with digitally compressed channels or equivalent broadband noise from 550 to 862 MHz at levels 6 dB below equivalent video channels will experience a composite distortion (CIN) appearing as noise in the 70 to 550 MHz frequency spectrum.
- 11. The Noise Figure and C/N specifications are "Typical" within specified passband.
- 12. Powering requirements indicated are with the power supply 122027-05. See Power Curves 333995-17 for typical performance under various operating conditions.
- 13. For the "H" output configuration option, –20dB internal forward and reverse directional testpoints. For the "P" output configuration option, –20dB external forward directional testpoints and –20dB internal reverse directional testpoints. Testpoint accuracy is ± 0.5dB except the Port 1 forward input is ± 0.75dB.

FlexNet Bridger Amplifier with TL Technology (RF Specifications) FNB97DQTxx6(G/N)6xx 55/70 Split

	- 1		
	FORWARD	REVI	ERSE
	Bridger (ea)	Bridge	er (ea)
General	3		
Passband, MHz	70-862	5-55	
Housing, MHz	1000	_	_
AC Current Passing, A			
Ports 1, 3, 6	15	1	5
Ports 2, 5 (Note 1)	13	1	3
ypical Operating Conditions			
Operational Gain, dB (Notes 2 and 3)	40	1	8
Channels, Number of NTSC (Note 4)	109/93/76	ϵ	5
Operating Levels (Recommended)			
Frequency, MHz	862/750/650/550/70	55	7/5
Input, dBmV Minimum (Note 5)	11.5/11/10.5/10/10.5	17/	17
Output, dBmV (Note 6)	51.5/49.5/48/46/37.5	35/	35
erformance Specifications @ Recommended Levels emperature Range: -40°C to +60°C			
arrier-to-Interference Ratio, dB (Note 7)			
Composite Triple Beat	59/69/73	8	9
Second Order Beat (F1 \pm F2)	_	_	_
Cross Modulation (per NCTA std.) (Note 8)	<i>57/65/69</i>	7	8
Third Order Beat (F1 \pm F2 \pm F3)	_	_	_
Composite 2IM	59/62/67	8	2
Composite Intermodulation Noise CIN (Note 9)	65	-	_
Noise, 4MHz, 75Ohms	61/60.5/60.5/60/60	67	7.5
loise Figure, dB (without EQ) (Note 10)	8.5/8.5/8/8/8.5	8.	5
ull Gain, dB (without EQ and ALC)	45	1	9
actory Alignment (with ALC Reserve, without EQ)			
able Loss, dB @ 862MHz	18	_	_
lat Loss, dB	23	1	9
iain Slope, dB	-1.0 to +1.0	_	_
latness (@ Gain Slope), ±dB	0.75	0.	5
eturn Loss, dB Minimum, All Entry Ports	16	16	.5
owering Requirements, Maximum/Typical (Note 11)		With Activ	e Reverse
IC Voltage, 60Hz		@ 90 <i>V</i>	@ 60V
C Power, Watts		44/40	43/39
C Current, mA		655/620	790/720
C Current, mA @ 24V ± 0.5V			
C Current, ma @ 24 v ± 0.5 v		1590/1435	1590/1435
			1590/1435
evel Control	± 4.0dB		1590/1435 -
evel Control lange, dB @ 862MHz	± 4.0dB ± 0.5dB		1590/1435 - -
evel Control ange, dB @ 862MHz accuracy (–40°C to 60°C)			1590/1435 - - -
evel Control ange, dB @ 862MHz accuracy (–40°C to 60°C) Output Level Range (from nominal)	± 0.5dB		1590/1435 - - -
evel Control ange, dB @ 862MHz ccuracy (–40°C to 60°C) output Level Range (from nominal) ilot Frequency Band (Recommended)	± 0.5dB +2/-6dB		1590/1435 - - - -
evel Control lange, dB @ 862MHz laccuracy (–40°C to 60°C) Output Level Range (from nominal) iilot Frequency Band (Recommended) iain Control	± 0.5dB +2/-6dB		- - -
evel Control lange, dB @ 862MHz laccuracy (–40°C to 60°C) Output Level Range (from nominal) ilot Frequency Band (Recommended) Gain Control	± 0.5dB +2/–6dB 439.25MHz (Single Channel)	1590/1435 - - - -	- - -
evel Control Plange, dB @ 862MHz Accuracy (–40°C to 60°C) Putput Level Range (from nominal) Pilot Frequency Band (Recommended) Gain Control Plug-in PAD Equalization to Compensate for Cable Loss	± 0.5dB +2/–6dB 439.25MHz (Single Channel)	1590/1435 - - - -	- - - -
evel Control Plange, dB @ 862MHz Accuracy (-40°C to 60°C) Putput Level Range (from nominal) Pilot Frequency Band (Recommended) Fain Control Plug-in PAD Equalization to Compensate for Cable Loss Plug-in Equalizers for Additional Equalization	± 0.5dB +2/–6dB 439.25MHz (Single Channel) SPB-xx	1590/1435 SPB	- - - -
Range, dB @ 862MHz Raccuracy (-40°C to 60°C) Putput Level Range (from nominal) Pilot Frequency Band (Recommended) Gain Control Plug-in PAD Equalization to Compensate for Cable Loss Plug-in Equalizers for Additional Equalization Chrominance/Luminance Delay, Maximum Channel 5, ns/3.58MHz	± 0.5dB +2/–6dB 439.25MHz (Single Channel) SPB-xx	1590/1435 SPB	

FlexNet Bridger Amplifier with TL Technology (RF Specifications) FNB97DQTxx6(G/N)6xx 55/70 Split

	FORWARD	REVERSE
	Bridger (ea)	Bridger (ea)
Reverse Group Delay, Maximum		
5.5 - 7MHz, ns	_	45
10 - 11.5MHz, ns	_	6
52 - 53.5MHz, ns	_	16
53.5 - 55MHz, ns	_	33
Hum Modulation (Time Domain @ 15A)		
5 - 750MHz, –dBc	60	60
751 - 862MHz, –dBc	55	_

Preliminary Specifications

NOTES:

- 1. FNB97DQTxx6(G/N)6xx bridger amplifiers provide two bridger outputs user-configurable to four outputs. Ports 2 and 5 provide the additional bridger outputs, and if used, have reduced AC current passing capability.
- 2. Spacing is at highest frequency with SEQ-862-xx installed. Reverse spacing includes losses due to housing, diplex filters, and MEQ-55-xx.
- 3. The specifications are based on the node configured (with two SPB-0s) as a 2-Output Bridger with distribution outputs on Ports 3 and 6. When using distribution plug-ins, SS-1000-2, SDC-1000-8, or SDC-1000-12, levels should be derated accordingly based on the accessory specification.
- 4. NTSC video channels occupying the appropriate frequency spectrum per specified number of channels.
- 5. Recommended minimum forward input level at 862 MHz including loss due to equalizer.
- 6. Recommended maximum reverse output level at 55MHz including loss due to equalizer.
- 7. Distortion performance is derated accordingly to take into account the influence of the digitally compressed channels operating at levels 6dB below equivalent video channels.
- 8. Cross modulation specification number indicates typical cascade performance.
- 9. Systems operating with digitally compressed channels or equivalent broadband noise from 550 to 862MHz at levels 6 dB below equivalent video channels will experience a composite distortion (CIN) appearing as noise in the 70 to 550MHz frequency spectrum.
- 10. The Noise Figure and C/N specifications are "Typical" within specified passband.
- 11. Powering requirements indicated are with the power supply 122027-05. See Power Curves 333995-17 for typical performance under various operating conditions.
- 12. For the "G" output configuration option, –20dB internal forward and reverse directional testpoints. For the "N" output configuration option, –20dB external forward directional testpoints and –20dB internal reverse directional testpoints. Testpoint accuracy is ± 0.5dB except the Port 1 forward input is ± 0.75dB.

FlexNet Trunk Amplifier (RF Specifications) FNT95DQ-xx6(H/P)6xx 55/70 Split

	•			
	FORV	VARD	REV	ERSE
	Trunk	2 O/P Bridger	Trunk & 2 (O/P Bridger
General				
Passband, MHz	70-	862	5-55	
Housing, MHz	10	000	_	_
AC Current Passing, A				
Ports 1, 3, 4, 6	1	5	1	5
Ports 2, 5 (Note 1)	1	3	1	3
Typical Operating Conditions				
Operational Gain, dB (Notes 2, 3, and 4)	30	39	1	8
Channels, Number of NTSC (Note 5)	109/93/76	109/93/76	6	5
Operating Levels (Recommended)				
Frequency, MHz	862/750/650/550/70	862/750/650/550/70	55	5/5
Input, dBmV Minimum (Note 6)	10.5/10/9.5/9/9.5	10.5/10/9.5/9/9.5	17	/17
Output, dBmV (Note 7)	40.5/38.5/37/35/26.5	49.5/47.5/46/44/35.5	35,	/35
Performance Specifications @ Recommended Levels (Temperature Range: -40°C to +60°C)				
Carrier-to-Interference Ratio, dB (Note 8)				
Composite Triple Beat	71/75/81	57/61/69	8	9
Second Order Beat (F1 \pm F2)	_	_	_	_
Cross Modulation (per NCTA std.) (Note 9)	68/72/76	57/60/66	7	8
Third Order Beat (F1 \pm F2 \pm F3)	_	_	-	_
Composite 2IM	70/75/79	67/70/73	8	2
Composite Intermodulation Noise CIN (Note 10)	82	65	_	_
Noise, 4MHz, 75Ohms (Note 3)	60/60/59.5/59/58.5	60/60/59.5/59/58.5	6	4
Noise Figure, dB (without EQ) (Note 11)	8.5/8/8/8/9	8.5/8/8/8/9	1	2
Full Gain, dB (without EQ and ALC)	35	44	19	
Factory Alignment (with ALC Reserve, without EQ)				
Cable Loss, dB @ 862MHz	18	18	_	_
Flat Loss, dB	13	22	1	9
Gain Slope, dB	-0.25 to 1.0	–1.0 to 1.0	_	_
Flatness (@ Gain Slope), ±dB	0.5	0.75	0.	.5
Return Loss, dB Minimum, All Entry Ports	16	16	16	5.5
Powering Requirements, Maximum/Typical (Note 12)			With Activ	ve Reverse
AC Voltage, 60Hz		_	@ 90 <i>V</i>	@ 60 <i>V</i>
AC Power, Watts		•	56.5/52	55.5/51
AC Current, mA			760/720	1015/935
OC Current, mA @ 24V ± 0.5V			2055/1885	2055/1885
Level Control				
Range, dB @ 862MHz	± 4	.0dB	_	_
Accuracy (–40°C to 60°C)	± 0	.5dB	_	_
Output Level Range (from nominal)	+2/-	-6dB	_	_
Pilot Frequency Band (Recommended)	439.25MHz (S	ingle Channel)		
Gain Control				
Plug-in PAD	SPL	3- <i>xx</i>	SPE	3-xx
Equalization to Compensate for Cable Loss				
Plug-in Equalizers for Additional Equalization	SEQ-8	362-xx	MEQ	-55-x
Chrominance/Luminance Delay, Maximum				
Channel 5, ns/3.58MHz	1	1	_	_
Channel 6, ns/3.58MHz		6	_	_

FlexNet Trunk Amplifier (RF Specifications) FNT95DQ-xx6(H/P)6xx 55/70 Split

	FORWARD		REVERSE
	Trunk	2 O/P Bridger	Trunk & 2 O/P Bridger
Reverse Group Delay, Maximum			
5.5 - 7MHz, ns		_	45
10 - 11.5MHz, ns		_	6
52 - 53.5MHz, ns		_	16
53.5 - 55MHz, ns		_	33
Hum Modulation (Time Domain @ 15A)			
5 - 10MHz, –dBc		_	55
11 - 750MHz, –dВс		60	60
751 - 862MHz, –dBc		55	_

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NOTES:

- 1. FNT95DQ-xx6(H/P)6xx trunk amplifiers provide one trunk output and two bridger outputs user-configurable to four outputs. Ports 2 and 5 provide the additional bridger outputs, and if used, have reduced AC current passing capability.
- 2. Spacing is at highest frequency with SEQ-862-xx installed. Reverse spacing includes losses due to housing, diplex filters, and MEQ-55-xx.
- 3. The specifications are based on the node configured (with two SPB-0s) as a 2-Output Bridger with distribution outputs on Ports 3 and 6. When using distribution plug-ins, SS-1000-2, SDC-1000-8, or SDC-1000-12, levels should be derated accordingly based on the accessory specification.
- 4. Bridger Port gain is 9 to 9.75dB above the Trunk Port.
- 5. NTSC video channels occupying the appropriate frequency spectrum per specified number of channels.
- 6. Recommended minimum forward input level at 862 MHz including loss due to equalizer.
- 7. Recommended maximum reverse output level at 55MHz including loss due to equalizer.
- 8. Distortion performance is derated accordingly to take into account the influence of the digitally compressed channels operating at levels 6dB below equivalent video channels.
- 9. Cross modulation specification number indicates typical cascade performance.
- 10. Systems operating with digitally compressed channels or equivalent broadband noise from 550 to 862 MHz at levels 6 dB below equivalent video channels will experience a composite distortion (CIN) appearing as noise in the 70 to 550 MHz frequency spectrum.
- 11. The Noise Figure and C/N specifications are "Typical" within specified passband.
- 12. Powering requirements indicated are with the power supply 122027-05. See Power Curves 333995-17 for typical performance under various operating conditions.
- For the "H" output configuration option, -20dB internal forward and reverse directional testpoints. For the "P" output configuration option, -20dB external forward directional testpoints and -20dB internal reverse directional testpoints. Testpoint accuracy is ± 0.5dB except the Port 1 forward input is ± 0.75dB.

FlexNet Bridger Amplifier (RF Specifications) FNB97DQ-xx6(G/N)6xx 55/70 Split

	FORWARD	REVERSE			
	Bridger (ea)	Bridge			
General					
Passband, MHz	70-862	5	55		
Housing, MHz	1000	_	_		
AC Current Passing, A					
Ports 1, 3, 6	15	1	5		
Ports 2, 5 (Note 1)	13	1	3		
Typical Operating Conditions					
Operational Gain, dB (Notes 2 and 3)	40	1	8		
Channels, Number of NTSC (Note 4)	109/93/76	6	5		
Operating Levels (Recommended)					
Frequency, MHz	862/750/650/550/70	55	7/5		
Input, dBmV Minimum (Note 5)	9.5/9/8.5/8/8.5	17	17		
Output, dBmV (Note 6)	49.5/47.5/46/44/35.5	35/	<i>'</i> 35		
Performance Specifications @ Recommended Levels Temperature Range: -40°C to +60°C					
Carrier-to-Interference Ratio, dB (Note 7)					
Composite Triple Beat	58/63/70	8	9		
Second Order Beat (F1 \pm F2)	_	_	_		
Cross Modulation (per NCTA std.) (Note 8)	58/62/69	7	8		
Third Order Beat (F1 \pm F2 \pm F3)	_	_	_		
Composite 2IM	65/67/70	8	2		
Composite Intermodulation Noise CIN (Note 9)	65	_	_		
Noise, 4MHz, 75Ohms	58.5/59/58/58/57	65	.5		
Noise Figure, dB (without EQ) (Note 10)	9/8.5/8/8/9.5	10	0.5		
Full Gain, dB (without EQ and ALC)	45	1	9		
Factory Alignment (with ALC Reserve, without EQ)					
Cable Loss, dB @ 862MHz	18	-	_		
Flat Loss, dB	23	1	9		
Gain Slope, dB	-1.0 to +1.0	-	_		
Flatness (@ Gain Slope), ±dB	0.75	0.	5		
Return Loss, dB Minimum, All Entry Ports	16	16	5.5		
Powering Requirements, Maximum/Typical (Note 11)		With Activ	e Reverse		
AC Voltage, 60Hz		@ 90 <i>V</i>	@ 60V		
AC Power, Watts		48/44	47.5/43		
AC Current, mA		690/650	870/790		
DC Current, mA @ 24V ± 0.5V		1750/1585	1750/1585		
Level Control					
Range, dB @ 862MHz	± 4.0dB	_		_	
Accuracy (–40°C to 60°C)	± 0.5dB	_			
Output Level Range (from nominal)	+2/-6dB	_			
Pilot Frequency Band (Recommended)	439.25MHz (Single Channel)	_			
Gain Control					
Plug-in PAD	SPB-xx	SPE	?-xx		
Equalization to Compensate for Cable Loss					
Plug-in Equalizers for Additional Equalization	SEQ-862-xx	MEQ	-55-x		
Chrominance/Luminance Delay, Maximum					
Channel 5, ns/3.58MHz	11	_	_		
Channel 6, ns/3.58MHz	6	_	_		

FlexNet Bridger Amplifier (RF Specifications) FNB97DQ-xx6(G/N)6xx 55/70 Split

	FORWARD	REVERSE
	Bridger (ea)	Bridger (ea)
Reverse Group Delay, Maximum		
5.5 - 7MHz, ns	_	45
10 - 11.5MHz, ns	_	6
52 - 53.5MHz, ns	_	16
53.5 - 55MHz, ns	_	33
Hum Modulation (Time Domain @ 15A)		
5 - 10MHz, –dBc	_	55
11 - 750MHz, –dВс	60	60
751 - 862MHz, –dBc	55	_

Specification Document Number 601040 Rev B

NOTES:

- 1. FNB97DQ-xx6(G/N)6xx bridger amplifiers provide two bridger outputs user-configurable to four outputs. Ports 2 and 5 provide the additional bridger outputs, and if used, have reduced AC current passing capability.
- 2. Spacing is at highest frequency with SEQ-862-xx installed. Reverse spacing includes losses due to housing, diplex filters, and MEQ-55-xx.
- 3. The specifications are based on the node configured (with two SPB-0s) as a 2-Output Bridger with distribution outputs on Ports 3 and 6. When using distribution plug-ins, SS-1000-2, SDC-1000-8, or SDC-1000-12, levels should be derated accordingly based on the accessory specification.
- 4. NTSC video channels occupying the appropriate frequency spectrum per specified number of channels.
- 5. Recommended minimum forward input level at 862 MHz including loss due to equalizer.
- 6. Recommended maximum reverse output level at 55MHz including loss due to equalizer.
- 7. Distortion performance is derated accordingly to take into account the influence of the digitally compressed channels operating at levels 6dB below equivalent video channels.
- 8. Cross modulation specification number indicates typical cascade performance.
- Systems operating with digitally compressed channels or equivalent broadband noise from 550 to 862MHz at levels 6 dB below equivalent video channels will experience a composite distortion (CIN) appearing as noise in the 70 to 550MHz frequency spectrum.
- 10. The Noise Figure and C/N specifications are "Typical" within specified passband.
- 11. Powering requirements indicated are with the power supply 122027-05. See Power Curves 333995-17 for typical performance under various operating conditions.
- 12. For the "G" output configuration option, –20dB internal forward and reverse directional testpoints. For the "N" output configuration option, –20dB external forward directional testpoints and –20dB internal reverse directional testpoints. Testpoint accuracy is ± 0.5dB except the Port 1 forward input is ± 0.75dB.

FlexNet Trunk Amplifier with TL Technology (RF Specifications) FNT95DNTxx6(H/P)6xx 862MHz, 65/80 Split, NTSC Channel Loading

	FORV	VARD	REVE	ERSE
	Trunk	2 O/P Bridger	Trunk & 2 (D/P Bridger
General				
Passband, MHz	80-	862	5-65	
Housing, MHz	10	000	_	-
AC Current Passing, A				
Ports 1, 3, 4, 6	1	5	1.	5
Ports 2, 5 (Note 1)	1	3	1.	3
Typical Operating Conditions				
Operational Gain, dB (Notes 2, 3, and 4)	30	39	1	8
Channels, Number of NTSC (Note 5)	106/90/73	106/90/73	6	õ
Operating Levels (Recommended)				
Frequency, MHz	862/750/650/550/80	862/750/650/550/80	65	/5
Input, dBmV min. (Note 6)	12.5/12/11.5/11/11.5	12.5/12/11.5/11/11.5	17/	17
Output, dBmV (Note 7)	42.5/40.5/39/37/28.5	51.5/49.5/48/46/37.5	35/	35
Performance Specifications @ Recommended Levels Temperature Range: -40°C to +60°C)				
Carrier-to-Interference Ratio, dB (Note 8)				
Composite Triple Beat	71/76/80	62/70/75	8:	9
Second Order Beat (F1 \pm F2)	_	_	_	-
Cross Modulation (per NCTA std.) (Note 9)	66/72/75	60/66/71	7	8
Third Order Beat (F1 \pm F2 \pm F3)	_	_	_	_
Composite 2IM	64/68/72	56/60/65	8.	2
Composite Intermodulation Noise CIN (Note 10)	82	65	_	_
Noise, 4MHz, 75Ohms (Note 3)	62/62/61.5/61/60	62/62/61.5/61/60	6-	4
Noise Figure, dB (without EQ) (Note 11)	8.5/8/8/8/9.5	8.5/8/8/8/9.5	10	
ull Gain, dB (without EQ and ALC)	35	44	1:	9
actory Alignment (with ALC Reserve, without EQ)				
Cable Loss, dB @ 862MHz	18	18	_	_
lat Loss, dB	13	22	1:	9
Gain Slope, dB	-0.25 to 1.0	-1.0 to 1.0	_	_
latness (@ Gain Slope), ±dB	0.5	0.75	0.	5
Peturn Loss, dB min., All Entry Ports	16	16	16	.5
owering Requirements, Maximum/Typical (Note 12)			With Activ	e Reverse
NC Voltage, 60Hz			@ 90V	@ 60V
AC Power, Watts		-	53/49	52.5/48
AC Current, mA			730/700	960/880
OC Current, mA @ 24V ± 0.5V			1940/1780	1940/1780
evel Control				
ange, dB @ 862MHz	± 4	.0dB	_	_
Accuracy (–40°C to 60°C)	± 0	.5dB	_	_
Output Level Range (from nominal)	+2/-	-6dB	_	_
ilot Frequency Band (Recommended)	439.25MHz (S	ingle Channel)	_	_
Gain Control				
Plug-in PAD	SPE	3- <i>xx</i>	SPB	-xx
qualization to Compensate for Cable Loss				
· Plug-in Equalizers for Additional Equalization	SFO-8	362-xx	MEQ-	-65-x

FlexNet Trunk Amplifier with TL Technology (RF Specifications) FNT95DNTxx6(H/P)6xx 862MHz, 65/80 Split, NTSC Channel Loading

	FORWARD		REVERSE
	Trunk	2 O/P Bridger	Trunk & 2 O/P Bridger
Group Delay, Maximum			
5.5 - 7MHz, ns		_	35
10 - 11.5MHz, ns		_	6
62 - 63.5MHz, ns		_	18
63.5 - 65MHz, ns		_	30
80 - 81.5MHz, ns		25	_
81.5 - 83MHz, ns		15	_
Hum Modulation (Time Domain @ 15A)			
5 - 750MHz, –dBc		60	60
751 - 862MHz, –dBc		55	_

Specification Document Number 601218 Rev B

NOTES:

- 1. FNT95DNTxx6(H/P)6xx trunk amplifiers provide one trunk output and two bridger outputs user-configurable to four outputs. Ports 2 and 5 provide the additional bridger outputs.
- 2. Spacing is at highest frequency with SEQ-862-xx installed. Reverse spacing includes losses due to housing, diplex filters, and MEQ-65-xx.
- 3. The specifications are based on the amplifier configured (with two SPB-0s) as a 2-Output Bridger with distribution outputs on Ports 3 and 6. When using distribution plug-ins, SS-1000-2, SDC-1000-8, or SDC-1000-12, levels should be derated accordingly based on the accessory specification.
- 4. Bridger port gain and flatness is 9 ± 0.75 dB as referenced to the Trunk.
- 5. NTSC video channels occupying the appropriate frequency spectrum per specified number of channels.
- 6. Recommended minimum forward input level at 862 MHz including loss due to equalizer.
- 7. Recommended maximum reverse output level at 65MHz including loss due to equalizer.
- 8. Distortion performance is derated accordingly to take into account the influence of the digitally compressed channels operating at levels 6dB below equivalent video channels.
- 9. Cross modulation specification number indicates typical cascade performance.
- 10. Systems operating with digitally compressed channels or equivalent broadband noise from 550 to 862MHz at levels 6dB below equivalent video channels will experience a composite distortion (CIN) appearing as noise in the 80 to 550MHz frequency spectrum.
- 11. The Noise Figure and C/N specifications are "Typical" within specified passband.
- 12. Powering requirements indicated are with the power supply 122027-05. See Power Curves 333995-17 for typical performance under various operating conditions.
- 13. For the "H" output configuration option, –20dB internal forward and reverse directional testpoints. For the "P" output configuration option, –20dB external forward directional testpoints and –20dB internal reverse directional testpoints. Testpoint accuracy is ± 0.5 dB except the Port 1 forward input is ± 0.75 dB.

FlexNet Bridger Amplifier with TL Technology (RF Specifications) FNB97DNTxx6(G/N)6xx 862MHz, 65/80 Split, NTSC Channel Loading

	FORWARD	REVERSE	
	Bridger (ea)	Bridge	er (ea)
General			
assband, MHz	80-862	5-65	
lousing, MHz	1000	_	_
C Current Passing, A			
Ports 1, 3, 6	15	1	5
Ports 2, 5 (Note 1)	13	1	3
ypical Operating Conditions			
perational Gain, dB (–0, +0.5) (Notes 2 and 3)	40	1	8
hannels, Number of NTSC (Note 4)	106/90/73	6	5
perating Levels (Recommended)			
Frequency, MHz	862/750/650/550/80	65	7/5
Input, dBmV min. (Note 5)	11.5/11/10.5/10/10.5	17	17
Output, dBmV (Note 6)	51.5/49.5/48/46/37.5	35/	['] 35
erformance Specifications @ Recommended Levels emperature Range: -40°C to +60°C			
Carrier-to-Interference Ratio, dB (Note 7)			
Composite Triple Beat	59/69/73	8	9
Second Order Beat (F1 \pm F2)	_	_	_
Cross Modulation (per NCTA std.) (Note 8)	57/65/69	7	8
Third Order Beat (F1 \pm F2 \pm F3)	_	_	_
Composite 2IM	59/62/67	8	2
Composite Intermodulation Noise CIN (Note 9)	65	_	_
Noise, 4MHz, 75Ohms (Note 3)	60.5/60.5/60.5/60/59.5	67.5	
loise Figure, dB (without EQ) (Note 10)	9/8.5/8/8/9	8.5	
ull Gain, dB (without EQ and ALC)	45	1	9
actory Alignment (with ALC Reserve, without EQ)			
able Loss, dB @ 862MHz	18	_	_
lat Loss, dB	23	1	9
Sain Slope, dB	-1.0 to +1.0	-0.5 to	+0.5
latness (@ Gain Slope), ±dB	0.75	0.	5
eturn Loss, dB min., All Entry Ports	16	16	5.5
owering Requirements, Maximum/Typical (Note 11)		With Activ	e Reverse
IC Voltage, 60Hz		@ 90 <i>V</i>	@ 60V
C Power, Watts		45/41	44/40.5
IC Current, mA		660/630	810/745
OC Current, mA @ 24V ± 0.5V		1630/1485	1630/1485
evel Control			
ange, dB @ 862MHz	± 4.0dB	_	_
ccuracy (–40°C to 60°C)	± 0.5dB	_	
Output Level Range (from nominal)	+2/-6dB	_	
ilot Frequency Band (Recommended)	439.25MHz (Single Channel)	_	
iain Control			
lug-in PAD	SPB-xx	SPE	?-xx
qualization to Compensate for Cable Loss			

FlexNet Bridger Amplifier with TL Technology (RF Specifications) FNB97DNTxx6(G/N)6xx 862MHz, 65/80 Split, NTSC Channel Loading

	FORWARD	REVERSE
	Bridger (ea)	Bridger (ea)
Group Delay, Maximum		
5.5 - 7MHz, ns	_	35
10 - 11.5MHz, ns	_	6
62 - 63.5MHz, ns	_	18
63.5 - 65MHz, ns	_	30
80 - 81.5MHz, ns	25	_
81.5 - 83 MHz, ns	15	_
Hum Modulation (Time Domain @ 15A)		
5 - 750MHz, –dBc	60	60
751 - 862MHz, –dBc	55	_

Specification Document Number 601216 Rev B

NOTES:

- 1. FNB97DNTxx6(G/N)6xx bridger amplifiers provide two bridger outputs user-configurable to four outputs. Ports 2 and 5 provide the additional bridger outputs.
- 2. Spacing is at highest frequency with SEQ-862-xx installed. Reverse spacing includes losses due to housing, diplex filters, and MEQ-65-xx.
- 3. The specifications are based on the amplifier configured (with two SPB-0s) as a 2-Output Bridger with distribution outputs on Ports 3 and 6. When using distribution plug-ins, SS-1000-2, SDC-1000-8, or SDC-1000-12, levels should be derated accordingly based on the accessory specification.
- 4. NTSC video channels occupying the appropriate frequency spectrum per specified number of channels.
- 5. Recommended minimum forward input level at 862 MHz including loss due to equalizer.
- 6. Recommended maximum reverse output level at 65 MHz including loss due to equalizer.
- 7. Distortion performance is derated accordingly to take into account the influence of the digitally compressed channels operating at levels 6dB below equivalent video channels.
- 8. Cross modulation specification number indicates typical cascade performance.
- 9. Systems operating with digitally compressed channels or equivalent broadband noise from 550 to 862MHz at levels 6dB below equivalent video channels will experience a composite distortion (CIN) appearing as noise in the 80 to 550MHz frequency spectrum.
- 10. The Noise Figure and C/N specifications are "Typical" within specified passband.
- 11. Powering requirements indicated are with the power supply 122027-05. See Power Curves 333995-17 for typical performance under various operating conditions.
- 12. For the "G" output configuration option, –20dB internal forward and reverse directional testpoints. For the "N" output configuration option, –20dB external forward directional testpoints and –20dB internal reverse directional testpoints. Testpoint accuracy is ± 0.5dB except the Port 1 forward input is +0.75dB

FlexNet Trunk Amplifier with TL Technology (RF Specifications) FNT95DNTxx6(H/P)6xx 862MHz, 65/80 Split, CENELEC/PAL Channel Loading

	FORV	VARD	REVI	ERSE
	Trunk	2 O/P Bridger	Trunk & 2 (D/P Bridger
General				
Passband, MHz	80-862		5-65	
Housing, MHz	10	000	_	_
AC Current Passing, A				
Ports 1, 3, 4, 6	1	5	1	5
Ports 2, 5 (Note 1)	1	3	1.	3
Typical Operating Conditions				
Operational Gain, dB (Notes 2, 3, and 4)	30	39	1	8
Channels, Number of CENELEC/PAL (Note 5)	41/60	41/60	ϵ	5
Operating Levels (Recommended)				
Frequency, MHz	862/600/80	862/600/80	65	5/5
Input, dBmV min. (Note 6)	12.5/10.5/11.5	12.5/10.5/11.5	17/	17
Output, dBmV (Note 7)	42.5/38/28.5	51.5/47/37.5	35/	<i>'35</i>
Performance Specifications @ Recommended Levels (Temperature Range: -40°C to +60°C)				
Carrier-to-Interference Ratio, dB (Note 8)				
Composite Triple Beat	77/81	67/73	8	9
Second Order Beat (F1 \pm F2)	_	_	-	_
Cross Modulation (per NCTA std.) (Note 9)	_	_	-	_
Third Order Beat (F1 \pm F2 \pm F3)	_	_	_	_
Composite 2IM	71/76	66/72	8	2
Composite Intermodulation Noise CIN (Note 10)	82	65	_	
Noise, 5MHz, 75Ohms (Note 3)	61/59.5/59	61/59.5/59	6	5
Noise Figure, dB (without EQ) (Note 11)	8.5/8/9.5	8.5/8/9.5	1	0
Full Gain, dB (without EQ and ALC)	35	44	1	9
Factory Alignment (with ALC Reserve, without EQ)				
Cable Loss, dB @ 862MHz	18	18	_	_
Flat Loss, dB	13	22	1	9
Gain Slope, dB	-0.25 to 1.0	-1.0 to 1.0	_	_
Flatness (@ Gain Slope), ±dB	0.5	0.75	0.	5
Return Loss, dB min., All Entry Ports	16	16	16	5.5
Powering Requirements, Maximum/Typical (Note 12)			With Activ	e Reverse
AC Voltage, 60Hz			@ 90 <i>V</i>	@ 60V
AC Power, Watts			53/49	52.5/48
AC Current, mA			730/700	960/880
DC Current, mA @ $24V \pm 0.5V$			1940/1780	1940/1780
Level Control				
Range, dB @ 862MHz	± 4	.0dB	-	_
Accuracy (–40°C to 60°C)	± 0	.5dB	-	_
Output Level Range (from nominal)	+2/-	-6 <i>dB</i>	-	_
Pilot Frequency Band (Recommended)	439.25MHz (S	ingle Channel)	_	_
Gain Control				
Plug-in PAD	SPL	3- <i>xx</i>	SPB	?-xx
Equalization to Compensate for Cable Loss				
Plug-in Equalizers for Additional Equalization	SEQ-8	362-xx	MEQ-	-65-x

FlexNet Trunk Amplifier with TL Technology (RF Specifications) FNT95DNTxx6(H/P)6xx 862MHz, 65/80 Split, CENELEC/PAL Channel Loading

	FORWARD		REVERSE
	Trunk	2 O/P Bridger	Trunk & 2 O/P Bridger
Group Delay, Maximum			
5.5 - 7MHz, ns		_	35
10 - 11.5MHz, ns		_	6
62 - 63.5MHz, ns		_	18
63.5 - 65MHz, ns		_	30
80 - 81.5MHz, ns		25	_
81.5 - 83MHz, ns		15	_
Hum Modulation (Time Domain @ 15A)			
5 - 750MHz, –dBc		60	60
751 - 862MHz, –dBc		55	_

Specification Document Number 601217 Rev B

NOTES:

- 1. FNT95DNTxx6(H/P)6xx trunk amplifiers provide one trunk output and two bridger outputs user-configurable to four outputs. Ports 2 and 5 provide the additional bridger outputs.
- 2. Spacing is at highest frequency with SEQ-862-xx installed. Reverse spacing includes losses due to housing, diplex filters, and MEQ-65-xx.
- 3. The specifications are based on the amplifier configured (with two SPB-0s) as a 2-Output Bridger with distribution outputs on Ports 3 and 6. When using distribution plug-ins, SS-1000-2, SDC-1000-8, or SDC-1000-12, levels should be derated accordingly based on the accessory specification.
- 4. Bridger Port gain and flatness is 9 ± 0.75 dB as referenced to the Trunk.
- CENELEC channel plan occupying the 80 to 862MHz frequency spectrum and PAL B/G video channels occupying the 80 to 600MHz (based on Spanish Law Channel Plan). Standard PAL B/G video channels in the reverse 5 to 65MHz frequency spectrum.
- 6. Recommended minimum forward input level at 862 MHz including loss due to equalizer.
- 7. Recommended maximum reverse output level at 65 MHz including loss due to equalizer.
- 8. Distortion performance is derated accordingly to take into account the influence of the digitally compressed channels operating at levels 6dB below equivalent video channels.
- 9. Cross modulation specification number indicates typical cascade performance.
- 10. Systems operating with digitally compressed channels or equivalent broadband noise from 600 to 862MHz at levels 6dB below equivalent video channels will experience a composite distortion (CIN) appearing as noise in the 80 to 600MHz frequency spectrum.
- 11. The Noise Figure and C/N specifications are "Typical" within specified passband.
- 12. Powering requirements indicated are with the power supply 122027-05. See Power Curves 333995-17 for typical performance under various operating conditions.
- 13. For the "H" output configuration option, -20dB internal forward and reverse directional testpoints. For the "P" output configuration option, -20dB external forward directional testpoints and -20dB internal reverse directional testpoints. Testpoint accuracy is ± 0.5dB except the Port 1 forward input is ± 0.75dB.

FlexNet Bridger Amplifier with TL Technology (RF Specifications) FNB97DNTxx6(G/N)6xx 862MHz, 65/80 Split, CENELEC/PAL Channel Loading

	FORWARD	REVERSE	
	Bridger (ea)	Bridger (ea) Bridger (ea	
General			
Passband, MHz	80-862	5-65	
Housing, MHz	1000	_	_
AC Current Passing, A			
Ports 1, 3, 6	15	1	5
Ports 2, 5 (Note 1)	13	1	3
Typical Operating Conditions			
Operational Gain, dB (–0, +0.5) (Notes 2 and 3)	40	1	8
Channels, Number of CENELEC/PAL (Note 4)	41/60	6	5
Operating Levels (Recommended)			
Frequency, MHz	862/600/80	65	/5
Input, dBmV min. (Note 5)	11.5/10.5/10.5	17/	17
Output, dBmV (Note 6)	51.5/47/37.5	35/	35
Performance Specifications @ Recommended Levels Femperature Range: -40°C to +60°C			
Carrier-to-Interference Ratio, dB (Note 7)			
Composite Triple Beat	68/74	8	9
Second Order Beat (F1 \pm F2)	_	_	_
Cross Modulation (per NCTA std.) (Note 8)	_	_	-
Third Order Beat (F1 \pm F2 \pm F3)	_	_	-
Composite 2IM	59/66	8	2
Composite Intermodulation Noise CIN (Note 9)	65	_	
Noise, 5MHz, 75Ohms (Note 3)	59.5/59.5/58.5	64.5	
Noise Figure, dB (without EQ) (Note 10)	9/8/9	8.5	
Full Gain, dB (without EQ and ALC)	45	19	
Factory Alignment (with ALC Reserve, without EQ)			
Cable Loss, dB @ 862MHz	18	_	_
Flat Loss, dB	23	1	9
Gain Slope, dB	-1.0 to +1.0	-0.5 to	+0.5
Flatness (@ Gain Slope), ±dB	0.75	0.	5
Return Loss, dB min., All Entry Ports	16	16	.5
Powering Requirements, Maximum/Typical (Note 11)		With Activ	e Reverse
AC Voltage, 60Hz		@ 90 <i>V</i>	@ 60 <i>V</i>
AC Power, Watts		45/41	44/40.5
AC Current, mA		660/630	810/745
DC Current, mA @ 24V ± 0.5V		1630/1485 1630/14	
Level Control			
Range, dB @ 862MHz	± 4.0dB	_	_
Accuracy (–40°C to 60°C)	± 0.5dB	_	_
Output Level Range (from nominal)	+2/-6dB	_	
Pilot Frequency Band (Recommended)	439.25MHz (Single Channel)	_	_
Gain Control	. 3		
Plug-in PAD	SPB-xx	SPB	-xx
Equalization to Compensate for Cable Loss		MEQ-65-x	

FlexNet Bridger Amplifier with TL Technology (RF Specifications) FNB97DNTxx6(G/N)6xx 862MHz, 65/80 Split, CENELEC/PAL Channel Loading

	FORWARD	REVERSE	
	Bridger (ea)	Bridger (ea)	
Group Delay, Maximum			
5.5 - 7MHz, ns	_	35	
10 - 11.5MHz, ns	_	6	
62 - 63.5MHz, ns	_	18	
63.5 - 65MHz, ns	_	30	
80 - 81.5MHz, ns	25	_	
81.5 - 83MHz, ns	15	_	
Hum Modulation (Time Domain @ 15A)			
5 - 750MHz, –dBc	60	60	
751 - 862MHz, –dBc	55	_	

Specification Document Number 601215 Rev B

NOTES:

- 1. FNB97DNTxx6(G/N)6xx bridger amplifiers provide two bridger outputs user-configurable to four outputs. Ports 2 and 5 provide the additional bridger outputs.
- 2. Spacing is at highest frequency with SEQ-862-xx installed. Reverse spacing includes losses due to housing, diplex filters, and MEQ-65-xx.
- 3. The specifications are based on the amplifier configured (with two SPB-0s) as a 2-Output Bridger with distribution outputs on Ports 3 and 6. When using distribution plug-ins, SS-1000-2, SDC-1000-8, or SDC-1000-12, levels should be derated accordingly based on the accessory specification.
- 4. CENELEC channel plan occupying the 80 to 862MHz frequency spectrum and PAL B/G video channels occupying the 80 to 600MHz (based on Spanish Law Channel Plan). Standard PAL B/G video channels in the reverse 5 to 65MHz frequency spectrum.
- 5. Recommended minimum forward input level at 862 MHz including loss due to equalizer.
- 6. Recommended maximum reverse output level at 65MHz including loss due to equalizer.
- 7. Distortion performance is derated accordingly to take into account the influence of the digitally compressed channels operating at levels 6dB below equivalent video channels.
- 8. Cross modulation specification number indicates typical cascade performance.
- 9. Systems operating with digitally compressed channels or equivalent broadband noise from 600 to 862MHz at levels 6dB below equivalent video channels will experience a composite distortion (CIN) appearing as noise in the 80 to 600MHz frequency spectrum.
- 10. The Noise Figure and C/N specifications are "Typical" within specified passband.
- 11. Powering requirements indicated are with the power supply 122027-05. See Power Curves 333995-17 for typical performance under various operating conditions.
- 12. For the "G" output configuration option, –20dB internal forward and reverse directional testpoints. For the "N" output configuration option, –20dB external forward directional testpoints and –20dB internal reverse directional testpoints. Testpoint accuracy is ± 0.5dB except the Port 1 forward input is ± 0.75dB.

FlexNet Trunk Amplifier (RF Specifications) FNT95DN-xx6(H/P)6xx 65/80 Split, NTSC Channel Loading

	FORWARD		REVERSE	
	Trunk	2 O/P Bridger	Trunk & 2	O/P Bridger
General				
Passband, MHz	80-	862	5-	65
Housing, MHz	10	00	-	_
AC Current Passing, A				
Ports 1, 3, 4, 6	15		1	5
Ports 2, 5 (Note 1)	13		13	
ypical Operating Conditions				
perational Gain, dB (Notes 2 and 3)	30	39	18	
Channels, Number of NTSC (Note 4)	73	<i>73</i>	6	5
perating Levels (Recommended)				
Frequency, MHz	862/550/80	862/550/80	65	5/5
Input, dBmV Minimum (Note 5)	11.5/10/10.5	11.5/10/10.5	17.	17
Output, dBmV (Note 6)	41.5/36/27.5	50.5/45/36.5	35/35	
Performance Specifications @ Recommended Levels Temperature Range: -40°C to +60°C)				
arrier-to-Interference Ratio, dB				
Composite Triple Beat	<i>7</i> 9	67	8	9
Second Order Beat (F1 ± F2)	_	_	_	_
Cross Modulation (per NCTA std.) (Note 7)	78	66	78	
Third Order Beat (F1 \pm F2 \pm F3)	_	_	_	
Composite 2IM	74	67	82	
Composite Intermodulation Noise CIN (Note 8)	70.5	58	_	
Noise, 4MHz, 75Ohms (Note 3)	61.5/60/60.5	61.5/60/60.5	63	
loise Figure, dB (without EQ) (Note 9)	8/8/8	8/8/8	13	
ull Gain, dB (without EQ and ALC)	35	44	19	
actory Alignment (with ALC Reserve, without EQ)				
Cable Loss, dB @ 862MHz	18	18	_	
lat Loss, dB	13	22	19	
Gain Slope, dB	-0.25 to 1.0	-1.0 to 1.0	_	
latness (@ Gain Slope), P/V dB	1.0	1.5	1.0	
Peturn Loss, dB Minimum, All Entry Ports (Note 10)	17	17	17	
owering Requirements, Maximum/Typical (Note 11)			With Activ	e Reverse
AC Voltage, 60Hz			@ 90V	@ 60 <i>V</i>
C Power, Watts			56.5/50	55.5/49.5
AC Current, mA			760/710	1015/900
OC Current, mA @ 24V ± 0.5V			2055/1825	2055/1825
evel Control				
lange, dB @ 862MHz	± 4.	0dB	_	_
Accuracy (–40°C to 60°C)	± 0.5dB		_	_
Output Level Range (from nominal)	+2/-6dB		_	_
Pilot Frequency Band (Recommended)	439.25MHz (Single Channel)		-	_
Gain Control				
Plug-in PAD	SPB-xx		SPE	3-xx
Equalization to Compensate for Cable Loss	SEO 5		1450	
Plug-in Equalizers for Additional Equalization	SEQ-862-xx		n Document Numb	-65-x

Specification Document Number 600863 Rev C

NOTES:

- 1. FNT95DN-xx6(H/P)6xx trunk amplifiers provide one trunk output and two bridger outputs user-configurable to four outputs. Ports 2 and 5 provide the additional bridger outputs, and if used, have reduced AC current passing capability.
- 2. Spacing is at highest frequency with SEQ-862-xx installed. Reverse spacing includes losses due to housing, diplex filters, and MEQ-65-xx.
- 3. The specifications are based on the node configured (with two SPB-0s) as a 2-Output Bridger with distribution outputs on Ports 3 and 6. When using distribution plug-ins, SS-1000-2, SDC-1000-8, or SDC-1000-12, levels should be derated accordingly based on the accessory specification.
- 4. NTSC video channels occupying the 80 to 550 MHz frequency spectrum.
- 5. Recommended minimum forward input level at 862 MHz including loss due to equalizer.
- 6. Recommended maximum reverse output level at 65MHz including loss due to equalizer.
- 7. Cross modulation specification number indicates typical cascade performance.
- 8. Systems operating with digitally compressed channels or equivalent broadband noise from 550 to 862 MHz at levels 6 dB below equivalent video channels will experience a composite distortion (CIN) appearing as noise in the 80 to 550 MHz frequency spectrum.
- 9. The Noise Figure and C/N specifications are "Typical" within specified passband.
- 10. Forward input return loss is 16dB min and forward output return loss is 16dB from 750 to 862MHz.
- 11. Powering requirements indicated are with the power supply 122027-05. See Power Curves 333995-17 for typical performance under various operating conditions.
- 12. For the "H" output configuration option, –20dB internal forward and reverse directional testpoints. For the "P" output configuration option, –20dB external forward directional testpoints and –20dB internal reverse directional testpoints. Testpoint accuracy is ± 0.5dB except the Port 1 forward input is ± 0.75dB.
- 13. The Chrominance/Luminance delay per amplifier at channel 6 (NTSC) is typically 28ns and Group Delay at 65MHz is typically 28ns/1.5MHz.

FlexNet Bridger Amplifier (RF Specifications) FNB97DN-xx6(G/N)6xx 65/80 Split, NTSC Channel Loading

	FORWARD	REVERSE Bridger (ea)	
	Bridger (ea)		
General			
Passband, MHz	80-862	5-65	
Housing, MHz	1000	_	
AC Current Passing, A			
Ports 1, 3, 6	15	1	5
Ports 2, 5 (Note 1)	13	1	3
Typical Operating Conditions			
Operational Gain, dB (Notes 2, 3)	40	18	
Channels, Number of NTSC (Note 4)	73	e	5
Operating Levels (Recommended)			
Frequency, MHz	862/550/80	65	5/5
Input, dBmV Minimum (Note 5)	10.5/9/9.5	17/17	
Output, dBmV (Note 6)	50.5/45/36.5	35/	′3 <i>5</i>
Performance Specifications @ Recommended Levels Temperature Range: -40°C to +60°C			
Carrier-to-Interference Ratio, dB			
Composite Triple Beat	68	8	9
Second Order Beat (F1 \pm F2)	_	_	_
Cross Modulation (per NCTA std.) (Note 7)	67	78	
Third Order Beat (F1 \pm F2 \pm F3)	_	_	
Composite 2IM	67	82	
Composite Intermodulation Noise CIN (Note 8)	<i>57</i>	_	
Noise, 4MHz, 75Ohms (Note 3)	58/56.5/57	64.5	
Noise Figure, dB (without EQ) (Note 9)	10.5/10.5/10.5	11.5	
Full Gain, dB (without EQ and ALC)	45	19	
Factory Alignment (with ALC Reserve, without EQ)			
Cable Loss, dB @ 862MHz	18	_	
Flat Loss, dB	23	19	
Gain Slope, dB	-1.0 to 1.0	_	
Flatness (@ Gain Slope), P/V dB	1.5	1	
Return Loss, dB Minimum, All Entry Ports (Note 10)	17	17	
Powering Requirements, Maximum/Typical (Note 11)		With Active Reverse	
AC Voltage, 60Hz		@ 90 <i>V</i>	@ 60V
AC Power, Watts		48/43.5	47.5/43
AC Current, mA		700/650	870/785
DC Current, mA @ 24V ± 0.5V		1750/1575	1750/157
Level Control			
Range, dB @ 862MHz	± 4.0dB	_	_
Accuracy (–40°C to 60°C)	± 0.5dB	_	
Output Level Range (from nominal)	+2/-6dB	_	
Pilot Frequency Band (Recommended)	439.25MHz (Single Channel)	_	
Gain Control	(g.c c		
Plug-in PAD	SPB-xx	SPB-xx	
Equalization to Compensate for Cable Loss		3, 5	**
Plug-in Equalizers for Additional Equalization	SEQ-862-xx	MEQ	-65-x

Specification Document Number 600864 Rev B

NOTES:

- 1. FNB97DN-xx6(G/N)6xx bridger amplifiers provide two bridger outputs user-configurable to four outputs. Ports 2 and 5 provide the additional bridger outputs, and if used, have reduced AC current passing capability.
- 2. Spacing is at highest frequency with SEQ-862-xx installed. Reverse spacing includes losses due to housing, diplex filters, and MEQ-65-xx.
- 3. The specifications are based on the node configured (with two SPB-0s) as a 2-Output Bridger with distribution outputs on Ports 3 and 6. When using distribution plug-ins, SS-1000-2, SDC-1000-8, or SDC-1000-12, levels should be derated accordingly based on the accessory specification.
- 4. NTSC video channels occupying the 80 to 550MHz frequency spectrum.
- 5. Recommended minimum forward input level at 862 MHz including loss due to equalizer.
- 6. Recommended maximum reverse output level at 65MHz including loss due to equalizer.
- 7. Cross modulation specification number indicates typical cascade performance.
- 8. Systems operating with digitally compressed channels or equivalent broadband noise from 550 to 862 MHz at levels 6 dB below equivalent video channels will experience a composite distortion (CIN) appearing as noise in the 80 to 550 MHz frequency spectrum.
- 9. The Noise Figure and C/N specifications are "Typical" within specified passband.
- 10. Forward input return loss is 16dB min. and forward output return loss is 16dB from 750 to 862 MHz.
- 11. Powering requirements indicated are with the power supply 122027-05. See Power Curves 333995-17 for typical performance under various operating conditions.
- 12. For the "G" output configuration option, –20dB internal forward and reverse directional testpoints. For the "N" output configuration option, –20dB external forward directional testpoints and –20dB internal reverse directional testpoints. Testpoint accuracy is ± 0.5dB except the Port 1 forward input is ± 0.75dB.
- 13. The Chrominance/Luminance delay per amplifier at channel 6 (NTSC) is typically 28ns and Group Delay at 65MHz is typically 28ns/1.5MHz.

FlexNet Trunk Amplifier (RF Specifications) FNT95DN-xx6(H/P)6xx 65/80 Split, CENELEC/PAL Channel Loading

	FORWARD		REVERSE	
	Trunk	2 O/P Bridger	Trunk & 2	O/P Bridger
General		_		
Passband, MHz	80-862		5-65	
Housing, MHz	1000		_	
AC Current Passing, A				
Ports 1, 3, 4, 6	15		1	5
Ports 2, 5 (Note 1)	13		1	3
Typical Operating Conditions				
Operational Gain, dB (Notes 2, 3, 4)	30	39	1	8
Channels, Number of CENELEC/PAL (Note 5)	41/60	41/60	(5
Operating Levels (Recommended)				
Frequency, MHz	862/600/80	862/600/80	65	5/5
Input, dBmV Minimum (Note 6)	10.5/9.5/9.5	10.5/9.5/9.5	17.	17
Output, dBmV (Note 7)	40.5/36/26.5	49.5/45/35.5	35	/35
Performance Specifications @ Recommended Levels (Temperature Range: -40°C to +60°C)				
Carrier-to-Interference Ratio, dB (Note 8)				
Composite Triple Beat	74/80	58/68	8	9
Second Order Beat (F1 \pm F2)	_	_	_	_
Cross Modulation (per NCTA std.) (Note 9)	74/77	62/67	78	
Third Order Beat (F1 \pm F2 \pm F3)	_	_	_	
Composite 2IM	<i>73</i> /78	68/74	82	
Composite Intermodulation Noise CIN (Note 10)	70.5	58	_	
Noise, 5MHz, 75Ohms (Note 2)	59.5/58.5/58.5	59.5/58.5/58.5	62	
Noise Figure, dB (without EQ) (Note 11)	8/8/8	8/8/8	13	
Full Gain, dB (without EQ and ALC)	35	44	19	
Factory Alignment (with ALC Reserve, without EQ)				
Cable Loss, dB @ 862MHz	18	18	_	
Flat Loss, dB	13	22	19	
Gain Slope, dB	-0.25 to 1.0	-1.0 to 1.0	_	
Flatness (@ Gain Slope), ±dB	0.5	0.75	0.5	
Return Loss, dB Minimum, All Entry Ports (Note 12)	16	16	16	5.5
Powering Requirements, Maximum/Typical (Note 13)			With Activ	e Reverse
AC Voltage, 60Hz			@ 90 <i>V</i>	@ 60 <i>V</i>
AC Power, Watts			56.5/50	55.5/49.5
AC Current, mA			760/710	1015/900
DC Current, mA @ $24V \pm 0.5V$			2055/1825	2055/1825
Level Control				
Range, dB @ 862MHz	± 4.0dB		_	_
Accuracy (–40°C to 60°C)	± 0.5dB		-	_
Output Level Range (from nominal)	+2/-6dB		_	_
Pilot Frequency Band (Recommended)	439.25MHz (Single Channel)		_	_
Gain Control				
Plug-in PAD	SPE	3- <i>xx</i>	SPE	3- <i>xx</i>
Equalization to Compensate for Cable Loss				
Plug-in Equalizers for Additional Equalization	SEQ-862-xx		MEQ	-65-x

FlexNet Trunk Amplifier (RF Specifications) FNT95DN-xx6(H/P)6xx 65/80 Split, CENELEC/PAL Channel Loading

	FORWARD		REVERSE	
	Trunk	2 O/P Bridger	Trunk & 2 O/P Bridger	
Reverse Group Delay, Maximum				
5.5 - 7MHz, ns		_	45	
10 - 11.5MHz, ns	<u> </u>		8	
62 - 63.5MHz, ns	_		20	
63.5 - 65MHz, ns	_		33	
80 - 81.5MHz, ns	25		_	
81.5 - 83 MHz, ns	15		_	
Hum Modulation (Time Domain @ 15A)				
5 - 10MHz, –dBc	_		55	
11 - 750MHz, –dBc	60		60	
751 - 862MHz, –dBc	50		_	

Specification Document Number 601046 Rev C

NOTES:

- 1. FNT95DN-xx6(H/P)6xx trunk amplifiers provide one trunk output and two bridger outputs that are user-configurable to four outputs. Ports 2 and 5 provide the additional bridger outputs, and if used, have reduced AC current passing capability.
- 2. Spacing is at highest frequency with SEQ-862-xx installed. Reverse spacing includes losses due to housing, diplex filters, and MEQ-65-xx.
- 3. The specifications are based on the node configured (with two SPB-0s) as a 2-Output Bridger with distribution outputs on Ports 3 and 6. When using distribution plug-ins, SS-1000-2, SDC-1000-8, or SDC-1000-12, levels should be derated accordingly based on the accessory specification.
- 4. Bridger Port gain and flatness is 9 ± 0.75 dB as referenced to the Trunk Port.
- 5. CENELEC channel plan occupying the 80 to 862 MHz frequency spectrum and PAL B/G video channels occupying the 80 to 600 MHz forward spectrum (based on the Spanish Law channel plan). Standard PAL B/G video channels in the 5 to 65 MHz frequency spectrum.
- 6. Recommended minimum forward input level at 862 MHz including loss due to equalizer.
- 7. Recommended maximum reverse output level at 65MHz including loss due to equalizer.
- 8. Distortion performance is derated accordingly to take into account the influence of the digitally compressed channels operating at levels 6dB below equivalent video channels.
- 9. Cross modulation specification number indicates typical cascade performance.
- 10. Systems operating with digitally compressed channels or equivalent broadband noise from 600 to 862 MHz at levels 6 dB below equivalent video channels will experience a composite distortion (CIN) appearing as noise in the 80 to 600 MHz frequency spectrum.
- 11. The Noise Figure and C/N specifications are "Typical" within specified passband.
- 12. Forward input return loss is 16dB min. and forward output return loss is 16dB from 750 to 862MHz.
- 13. Powering requirements indicated are with the power supply 122027-05. See Power Curves 333995-17 for typical performance under various operating conditions.
- 14. For the "H" output configuration option, –20dB internal forward and reverse directional testpoints. For the "P" output configuration option, –20dB external forward directional testpoints and –20dB internal reverse directional testpoints. Testpoint accuracy is ± 0.5dB except the Port 1 forward input is ± 0.75dB

FlexNet Bridger Amplifier (RF Specifications) FNB97DN-xx6(G/N)6xx 65/80 Split, CENELEC/PAL Channel Loading

Bridger (c) Passband, MHz 80-86. Housing, MHz 1000 AC Current Passing, A Ports 1, 3, 6 15 Ports 1, 3, 6 15 15 Ports 2, 5 (Note 1) 13 13 Typical Operating Conditions Operational Gain, dB (Notes 2, 3) 40 Channels, Number of CENELEC(PAL (Note 4) 41/60 Operating Levels (Recommended) Frequency, MHz 862/600 Input, dBmV Minimum (Note 5) 9.5/8.5/6 Output, dBmV (Note 6) 49.5/45/2 Performance Specifications @ Recommended Levels Temperature Range: -40°C to +60°C 49.5/45/2 Carrier-to-Interference Ratio, dB (Note 7) Composite Triple Beat 59/65 Second Order Beat (F1 ± F2) — — Cross Modulation (per NCTA std.) (Note 8) 65/68 Third Order Beat (F1 ± F2 ± F3) — — Composite Intermodulation Noise CIN (Note 9) 57 Noise, 5MHz, 750hms (Note 3) 56/55/5 Noise Figure, dB (without EQ) (Note 10) 10.5/10.5 18 Falt Loss, dB (without EQ) (Note 10) 10.5/10.5<	ARD	REVERSE	
Passband, MHz 80-86. Housing, MHz 1000 AC Current Passing, A Ports 1, 3, 6 Ports 2, 5 (Note 1) 13 Typical Operating Conditions Operational Gain, dB (Notes 2, 3) 40 Channels, Number of CENELEC(PAL (Note 4) 41/60 Operating Levels (Recommended) Frequency, MHz 862/600 Input, dBmV Minimum (Note 5) 9.5/8.5/8. Output, dBmV (Mote 6) 49.5/45/3 Performance Specifications @ Recommended Levels Temperature Range: −40°C to +60°C Carrier-to-Interference Ratio, dB (Note 7) Composite Triple Beat 59/68 Second Order Beat (F1 ± F2) − C Cross Modulation (per NCTA std.) (Note 8) 65/68 Third Order Beat (F1 ± F2 ± F3) − C Composite Intermodulation Noise CIN (Note 9) 57 Noise, 5MHz, 750hms (Note 3) 56/55/8 Noise Figure, dB (without EQ) (Note 10) 10.5/10.5 Full Gain, dB (without EQ and ALC) 45 Factory Alignment (with ALC Reserve, without EQ) Cable Loss, dB @ 862MHz 18 Flat Loss, dB @ 362MHz 18 Flat Loss, dB Minimum, All Entry Ports (Note 11) 17 Powering Requirements, Maximum/Typical (Note 12) AC Voltage, 60Hz AC Courrent, mA DC Current, mA @ 24V ± 0.5V Level Control Gain Control Gain Control	Bridger (ea)		(ea)
### Housing, MHz AC Current Passing, A Ports 1, 3, 6 Ports 2, 5 (Note 1) Typical Operating Conditions Operational Gain, dB (Notes 2, 3) Channels, Number of CENELEC/PAL (Note 4) Operating Levels (Recommended) Frequency, MHz Input, dBmV Minimum (Note 5) Output, dBmV (Note 6) Performance Specifications @ Recommended Levels Temperature Range: -40°C to +60°C Carrier-to-Interference Ratio, dB (Note 7) Composite Triple Beat Second Order Beat (F1 ± F2) Cross Modulation (per NCTA std.) (Note 8) Third Order Beat (F1 ± F2 ± F3) Composite Intermodulation Noise CIN (Note 9) Noise, 5MHz, 75 Ohms (Note 3) Noise Figure, dB (without EQ) (Note 10) Factory Alignment (with ALC Reserve, without EQ) Cable Loss, dB @ 862MHz Return Loss, dB Minimum, All Entry Ports (Note 11) Powering Requirements, Maximum/Typical (Note 12) AC Voltage, 60 Hz AC Current, mA DC Current, mA @ 24V ± 0.5V Level Control Gain Control			
AC Current Passing, A Ports 1, 3, 6 Ports 2, 5 (Note 1) Typical Operating Conditions Operational Gain, dB (Notes 2, 3) Channels, Number of CENELEC/PAL (Note 4) Operating Levels (Recommended) Frequency, MHz Input, $dBmV$ Minimum (Note 5) Output, $dBmV$ (Note 6) Performance Specifications @ Recommended Levels Temperature Range: -40°C to $+60^{\circ}\text{C}$ Carrier-to-Interference Ratio, dB (Note 7) Composite Triple Beat Second Order Beat ($F1 \pm F2$) Composite 1IM Composite Intermodulation Noise CIN (Note 8) Third Order Beat ($F1 \pm F2 \pm F3$) Composite Intermodulation Noise CIN (Note 9) Noise, $5MHz$, $75Ohms$ (Note 3) Noise, $5MHz$, $75Ohms$ (Note 3) Noise Figure, dB (without EQ) (Note 10) 10.5/10.5 Factory Alignment (with ALC Reserve, without EQ) Cable Loss, dB @ $862MHz$ $F1at$ Loss, dB Minimum, All Entry Ports (Note 11) Powering Requirements, Maximum/Typical (Note 12) AC Voltage, $60Hz$ AC Current, mA DC Current, mA DC Cu	62	5-65	
Ports 1, 3, 6	00	_	
## Ports 2, 5 (Note 1) Typical Operating Conditions			
Page Composite	;	15	
### Apperational Gain, dB (Notes 2, 3) ### Channels, Number of CENELEC/PAL (Note 4) ### Channels, Number of CENELEC/PAL (Note 5) ### Channels, Number of CENELEC/PAL (Note 5) ### Channels, Number of CENELEC/PAL (Note 5) ### Course, MHz ### Composite (Note 6) ### Composite Triple Beat	!	13	
Channels, Number of CENELEC/PAL (Note 4) A 1/60 Deparating Levels (Recommended) Frequency, MHz Input, dBmV Minimum (Note 5) Output, dBmV (Note 6) Performance Specifications @ Recommended Levels Deparature Range: -40°C to +60°C Carrier-to-Interference Ratio, dB (Note 7) Composite Triple Beat Second Order Beat (F1 ± F2) Cross Modulation (per NCTA std.) (Note 8) Third Order Beat (F1 ± F2 ± F3) Composite Intermodulation Noise CIN (Note 9) Third Order Beat (F1 ± F2 ± F3) Composite Intermodulation Noise CIN (Note 9) Tolial Gain, dB (without EQ) (Note 10) Disciple Gain, dB (without EQ) and ALC) Teactory Alignment (with ALC Reserve, without EQ) Table Loss, dB @ 862MHz Talat Loss, dB @ 862MHz Talat Loss, dB Minimum, All Entry Ports (Note 11) Tolial Gain, Slope, dB Toliatness (@ Gain Slope), ±dB Toliat			
## Sperating Levels (Recommended) Frequency, MHz)	18	
Frequency, MHz	50	6	
Input, dBmV Minimum (Note 5) Output, dBmV (Note 6) Performance Specifications @ Recommended Levels Performance Specification Performance Performance Specification Performance Performance Specification Performance Perform			
Output, dBmV (Note 6) Performance Specifications @ Recommended Levels emperature Range: -40°C to +60°C Carrier-to-Interference Ratio, dB (Note 7) Composite Triple Beat 59/69 Second Order Beat (F1 ± F2) — Cross Modulation (per NCTA std.) (Note 8) 65/68 Third Order Beat (F1 ± F2 ± F3) — Composite 2IM 69/74 Composite Intermodulation Noise CIN (Note 9) 57 Noise, 5MHz, 75Ohms (Note 3) 56/55/5 Ioise Figure, dB (without EQ) (Note 10) 10.5/10.5, and Gain, dB (without EQ) and ALC) 45 Factory Alignment (with ALC Reserve, without EQ) Fable Loss, dB @ 862MHz 18 Failat Loss, dB @ 862MHz 18 Failat Loss, dB Minimum, All Entry Ports (Note 11) 17 Fowering Requirements, Maximum/Typical (Note 12) Factory Current, mA Factory Courrent, mA Factory Current, mA Factory Courrent, mA Factory Current, mA Factory Curre	00/80	65/5	
Output, dBmV (Note 6) Performance Specifications @ Recommended Levels emperature Range: -40°C to +60°C farrier-to-Interference Ratio, dB (Note 7) Composite Triple Beat 59/69 Second Order Beat (F1 ± F2)	5/8.5	17/17	7
The perature Range: -40° C to $+60^{\circ}$ C Carrier-to-Interference Ratio, dB (Note 7) Composite Triple Beat Second Order Beat (F1 \pm F2) Cross Modulation (per NCTA std.) (Note 8) Third Order Beat (F1 \pm F2 \pm F3) Composite 2IM Composite Intermodulation Noise CIN (Note 9) Noise, 5MHz, 75Ohms (Note 3) Solition of Eigure, dB (without EQ) (Note 10) Final Gain, dB (without EQ and ALC) Factory Alignment (with ALC Reserve, without EQ) Final Loss, dB @ 862MHz Final Slope, dB Final Slope, dB Final Slope, dB Final Slope, dB Final Covering Requirements, Maximum/Typical (Note 12) Final Covering Requirements, Maximum/Typical (Note 12) Final Covering Requirements, Maximum/Typical (Note 13) Final Covering Requirements, Maximum/Typical (Note 14) Final Covering Requirements, Maximum/Typical (Note 15) Final Covering Requirements, Maximum/Typical (Note 16) Final Range, dB @ 862MHz Final Covering Requirements, Maximum/Typical (Note 17) Final Range, dB @ 862MHz Final Range, dB @ 86	5/35.5	35/35	5
Composite Triple Beat 59/68 Second Order Beat (F1 \pm F2) — Cross Modulation (per NCTA std.) (Note 8) 65/68 Third Order Beat (F1 \pm F2 \pm F3) — Composite 2IM 69/74 Composite Intermodulation Noise CIN (Note 9) 57 Noise, 5MHz, 75Ohms (Note 3) 56/55/8 Noise Figure, dB (without EQ) (Note 10) 10.5/10.5/ Full Gain, dB (without EQ and ALC) 45 Factory Alignment (with ALC Reserve, without EQ) Falst Loss, dB 862MHz 18 Falst Loss, dB 9862MHz 18 Falst Loss, dB 1975 Falst Loss, dB 1975 Falst Loss, dB 1975 Falst Loss, dB Minimum, All Entry Ports (Note 11) 17 Fowering Requirements, Maximum/Typical (Note 12) Falst Courrent, mA 1975 Falst Courrent, mA 24V \pm 0.5V Falst Courrent, mA 24V \pm 0.5V Falst Courrent, mA 250 Courre			
Second Order Beat (F1 \pm F2) — Cross Modulation (per NCTA std.) (Note 8) 65/68 Third Order Beat (F1 \pm F2 \pm F3) — Composite 2IM 69/74 Composite Intermodulation Noise CIN (Note 9) 57 Noise, 5MHz, 75Ohms (Note 3) 56/55/5 Ioise Figure, dB (without EQ) (Note 10) 10.5/10.5 Iull Gain, dB (without EQ and ALC) 45 Iactory Alignment (with ALC Reserve, without EQ) Iactory Alignment (
Cross Modulation (per NCTA std.) (Note 8) Third Order Beat (F1 \pm F2 \pm F3) Composite 2IM Composite Intermodulation Noise CIN (Note 9) Noise, 5MHz, 75Ohms (Note 3) Solise Figure, dB (without EQ) (Note 10) 10.5/10.5/ Ull Gain, dB (without EQ and ALC) actory Alignment (with ALC Reserve, without EQ) Sable Loss, dB @ 862MHz Salat Loss, dB Sain Slope, dB -1.0 to blatness (@ Gain Slope), \pm dB Soliton Loss, dB Minimum, All Entry Ports (Note 11) Towering Requirements, Maximum/Typical (Note 12) AC Voltage, 60 Hz CC Vorrent, mA CC Current, mA CC Current, mA @ 24 V \pm 0.5V Evel Control Sange, dB @ 862 MHz \pm 4.0c Courpout Level Range (from nominal) \pm 4.0c Courpout Level Range (from nominal) \pm 4.0c Solitot Frequency Band (Recommended) 439.25MHz (Singlain Control)	59	89	
Third Order Beat (F1 \pm F2 \pm F3) Composite 2IM Composite Intermodulation Noise CIN (Note 9) Noise, 5MHz, 75Ohms (Note 3) Solise Figure, dB (without EQ) (Note 10) Italian, dB (without EQ and ALC) Cactory Alignment (with ALC Reserve, without EQ) Cable Loss, dB @ 862MHz Solian Slope, dB Cain Slope, dB Caturn Loss, dB Minimum, All Entry Ports (Note 11) Cowering Requirements, Maximum/Typical (Note 12) AC Voltage, 60Hz AC Current, mA Co Current, mA @ 24V \pm 0.5V Revel Control Cange, dB @ 862MHz Cature Range (from nominal) Control Caterony Band (Recommended) A39.25MHz (Singlain Control) Control Caterony Band (Recommended) Control Caterony Band (Recommended)		_	
Composite 2IM Composite Intermodulation Noise CIN (Note 9) 57 Noise, $5MHz$, $75Ohms$ (Note 3) $56/55/5$ loise Figure, dB (without EQ) (Note 10) $10.5/10.5$ ull Gain, dB (without EQ and ALC) 45 actory Alignment (with ALC Reserve, without EQ) Sable Loss, dB $@ 862MHz$ 18 Sain Slope, dB -1.0 to latness (@ Gain Slope), $\pm dB$ 0.75 Seturn Loss, dB Minimum, All Entry Ports (Note 11) 17 Sowering Requirements, Maximum/Typical (Note 12) 18 19 19 19 19 19 19 19 19	58	78	
Composite Intermodulation Noise CIN (Note 9) Noise, $5MHz$, $75Ohms$ (Note 3) Soloise Figure, dB (without EQ) (Note 10) Soloise Figure, dB (without EQ and ALC) Factory Alignment (with ALC Reserve, without EQ) Soloise Soloise Figure, dB (without EQ and ALC) Factory Alignment (with ALC Reserve, without EQ) Soloise Figure, dB (without EQ and ALC) Factory Alignment (with ALC Reserve, without EQ) Soloise Figure, dB (without EQ and ALC) Factory Alignment (with ALC Reserve, without EQ) Soloise Figure, dB (without EQ and ALC) Factory Alignment (with ALC Reserve, without EQ) Soloise Figure, dB (without EQ and ALC) Factory Alignment (with ALC Reserve, without EQ) Factory Alignment (with ALC) Factory Alignment (with		_	
Noise, $5MHz$, $75Ohms$ (Note 3) Noise Figure, dB (without EQ) (Note 10) 10.5/10.5/ Idl Gain, dB (without EQ and ALC) Sactory Alignment (with ALC Reserve, without EQ) Sable Loss, dB @ $862MHz$	74	82	
Noise Figure, dB (without EQ) (Note 10) 10.5/10.5/ Italia Gain, dB (without EQ and ALC) Factory Alignment (with ALC Reserve, without EQ) Fable Loss, dB @ 862MHz Fain Slope, dB	,	_	
Full Gain, dB (without EQ and ALC) Factory Alignment (with ALC Reserve, without EQ) Fable Loss, dB @ 862MHz Fain Slope, dB	5/55	63.5	
Factory Alignment (with ALC Reserve, without EQ) Cable Loss, dB @ 862MHz 18 Flat Loss, dB	5/10.5	11.5	
Table Loss, dB @ 862MHz 18 Flat Loss, dB 23 Gain Slope, dB -1.0 to felatness (@ Gain Slope), \pm dB 0.75 Return Loss, dB Minimum, All Entry Ports (Note 11) 17 Powering Requirements, Maximum/Typical (Note 12) AC Voltage, 60Hz AC Power, Watts AC Current, mA DC Current, mA DC Current, mA @ 24V \pm 0.5V Level Control Range, dB @ 862MHz \pm 4.0c Accuracy (-40° C to 60°C) \pm 0.5c Dutput Level Range (from nominal) \pm 2/ \pm 6c Gain Control	i	19	
Flat Loss, dB 23 Fain Slope, dB -1.0 to foliatness (@ Gain Slope), $\pm dB$ 0.75 Return Loss, dB Minimum, All Entry Ports (Note 11) 17 Powering Requirements, Maximum/Typical (Note 12) AC Voltage, $60Hz$ AC Power, Watts AC Current, mA DC Current, mA DC Current, mA @ $24V \pm 0.5V$ Level Control Range, dB @ $862MHz$ $\pm 4.0c$ Accuracy (-40° C to 60° C) $\pm 0.5c$ Dutput Level Range (from nominal) $+2/-6c$ Fain Control			
Fain Slope, dB —1.0 to Slatness (@ Gain Slope), $\pm dB$ 0.75 Return Loss, dB Minimum, All Entry Ports (Note 11) 17 Rowering Requirements, Maximum/Typical (Note 12) AC Voltage, $60Hz$ AC Power, Watts AC Current, mA DC Current, mA DC Current, mA 24 $V \pm 0.5V$ Level Control Range, dB @ $862MHz$ $\pm 4.0c$ Accuracy (-40° C to 60° C) $\pm 0.5c$ Dutput Level Range (from nominal) $+2/-6c$ Foliot Frequency Band (Recommended) 439.25MHz (Sing Gain Control	}	_	
Elatness (@ Gain Slope), $\pm dB$ 0.75 Return Loss, dB Minimum, All Entry Ports (Note 11) 17 Rowering Requirements, Maximum/Typical (Note 12) RC Voltage, $60Hz$ RC Power, Watts RC Current, mA RC Current,	?	19	
Return Loss, dB Minimum, All Entry Ports (Note 11) 17 Powering Requirements, Maximum/Typical (Note 12) AC Voltage, 60Hz AC Power, Watts AC Current, mA DC Current, mA DC Current, mA @ 24V ± 0.5V Level Control Range, dB @ 862MHz ± 4.0c Accuracy (-40°C to 60°C) ± 0.5c Dutput Level Range (from nominal) +2/-6c Poilot Frequency Band (Recommended) 439.25MHz (Singlesian Control)	1.0		
Powering Requirements, Maximum/Typical (Note 12) AC Voltage, $60Hz$ AC Power, Watts AC Current, mA DC Current, $mA \otimes 24V \pm 0.5V$ Level Control Range, $dB \otimes 862MHz \pm 4.0c$ Accuracy (-40° C to 60° C) Dutput Level Range (from nominal) Poliot Frequency Band (Recommended) 439.25MHz (Singlesian Control	5	0.5	
Powering Requirements, Maximum/Typical (Note 12) AC Voltage, $60Hz$ AC Power, Watts AC Current, mA DC Current, $mA @ 24V \pm 0.5V$ Level Control Range, $dB @ 862MHz & \pm 4.0c$ Accuracy (-40° C to 60° C) $\pm 0.5c$ Dutput Level Range (from nominal) $+2/-6c$ Filot Frequency Band (Recommended) 439.25MHz (Sing Gain Control	,	17	
AC Voltage, 60Hz AC Power, Watts AC Current, mA DC Current, mA @ 24V ± 0.5V Level Control Range, dB @ 862MHz		With Active	Reverse
AC Power, Watts AC Current, mA DC Current, mA @ 24V ± 0.5V Level Control Range, dB @ 862MHz ± 4.0c Accuracy (-40°C to 60°C) ± 0.5c Dutput Level Range (from nominal) +2/-6c Pilot Frequency Band (Recommended) 439.25MHz (Single Gain Control	(@ 90 <i>V</i>	@ 60 <i>V</i>
AC Current, mA OC Current, mA @ $24V \pm 0.5V$ Level Control Range, dB @ $862MHz$ $\pm 4.0c$ Accuracy (-40° C to 60° C) $\pm 0.5c$ Output Level Range (from nominal) $+2/-6c$ Pilot Frequency Band (Recommended) 439.25MHz (Single Gain Control		48/43.5	47.5/43
Accuracy (-40°C to 60°C) ± 0.5c Dutput Level Range (from nominal) +2/-6c Dilot Frequency Band (Recommended) 439.25MHz (Single Gain Control	7	700/650	870/785
Range, dB @ 862MHz ± 4.0c Accuracy (-40°C to 60°C) ± 0.5c Dutput Level Range (from nominal) +2/-6c Pilot Frequency Band (Recommended) 439.25MHz (Sing	17	750/1575	1750/1575
Accuracy (-40°C to 60°C) ± 0.5cc Output Level Range (from nominal) +2/-6cc Pilot Frequency Band (Recommended) 439.25MHz (Single Gain Control			
Output Level Range (from nominal) +2/-60 Pilot Frequency Band (Recommended) 439.25MHz (Single Gain Control)dB	_	
Output Level Range (from nominal) +2/-60 Pilot Frequency Band (Recommended) 439.25MHz (Single Gain Control	5dB	_	
Pilot Frequency Band (Recommended) 439.25MHz (Sing Gain Control		_	
Gain Control		_	
	xx	SPB-xx	
Equalization to Compensate for Cable Loss Plug-in Equalizers for Additional Equalization SEQ-862	52-vv	MEQ-6.	5-v

FlexNet Bridger Amplifier (RF Specifications) FNB97DN-xx6(G/N)6xx 65/80 Split, CENELEC/PAL Channel Loading

	FORWARD	REVERSE
	Bridger (ea)	Bridger (ea)
Reverse Group Delay, Maximum		
5.5 - 7MHz, ns	_	45
10 - 11.5MHz, ns	_	8
62 - 63.5MHz, ns	_	20
63.5 - 65MHz, ns	_	33
80 - 81.5MHz, ns	25	_
81.5 - 83MHz, ns	15	_
Hum Modulation (Time Domain @ 15A)		
5 - 10MHz, –dBc	_	55
11 - 750MHz, –dBc	60	60
751 - 862MHz, –dBc	55	_

Specification Document Number 601047 Rev B

NOTES:

- 1. FNB97DN-xx6(G/N)6xx bridger amplifiers provide two bridger outputs that are user-configurable to four outputs. Ports 2 and 5 provide the additional bridger outputs, and if used, have reduced AC current passing capability.
- 2. Spacing is at highest frequency with SEQ-862-xx installed. Reverse spacing includes losses due to housing, diplex filters, and MEQ-65-xx.
- 3. The specifications are based on the node configured (with two SPB-0s) as a 2-Output Bridger with distribution outputs on Ports 3 and 6. When using distribution plug-ins, SS-1000-2, SDC-1000-8, or SDC-1000-12, levels should be derated accordingly based on the accessory specification.
- CENELEC channel plan occupying the 80 to 862MHz frequency spectrum and PAL B/G video channels occupying the 80 to 600MHz forward spectrum (based on the Spanish Law channel plan). Standard PAL B/G video channels in the 5 to 65MHz frequency spectrum.
- 5. Recommended minimum forward input level at 862 MHz including loss due to equalizer.
- 6. Recommended maximum reverse output level at 65 MHz including loss due to equalizer.
- 7. Distortion performance is derated accordingly to take into account the influence of the digitally compressed channels operating at levels 6dB below equivalent video channels.
- 8. Cross modulation specification number indicates typical cascade performance.
- Systems operating with digitally compressed channels or equivalent broadband noise from 600 to 862MHz at levels 6 dB below equivalent video channels will experience a composite distortion (CIN) appearing as noise in the 80 to 600MHz frequency spectrum.
- 10. The Noise Figure and C/N specifications are "Typical" within specified passband.
- 11. Forward input return loss is 16dB min. and forward output return loss is 16dB from 750 to 862MHz.
- 12. Powering requirements indicated are with the power supply 122027-05. See Power Curves 333995-17 for typical performance under various operating conditions.
- 13. For the "G" output configuration option, –20dB internal forward and reverse directional testpoints. For the "N" output configuration option, –20dB external forward directional testpoints and –20dB internal reverse directional testpoints. Testpoint accuracy is ± 0.5dB except the Port 1 forward input is ± 0.75dB.

FlexNet Trunk Amplifier FNT97CJ-xx6(H/P)6xx 750MHz, 42/54 Split

Seeman		FORWARD		REVERSE	
Passband, MM1z 54-750 5-42					
### Rousing, MHz ### AC Current Passing, A Ports 1, 3, 4, 6 Ports 2, 5 (Note 1) Ports 2, 5 (Note 1) Ports 3, 4, 6 Ports 2, 5 (Note 1) Ports 3, 4, 6 Ports 2, 5 (Note 1) Ports 3, 4, 6 Ports 2, 5 (Note 1) Ports 3, 4, 6 Ports 2, 5 (Note 1) Ports 4, 6 Ports 2, 5 (Note 1) Ports 6, 6 Ports 6, 7 Ports 1, 1, 4, 6 Ports 2, 5 (Note 1) Ports 6, 7 Ports 1, 1, 4, 6 Ports 2, 5 (Note 1) Ports 6, 7 Ports 1, 1, 4, 6 Ports 2, 5 (Note 1) Ports 6, 7 Ports 7, 1, 4, 6 Ports 7, 1, 4 Por	General				
AC Current Passing, A Ports 1, 3, 4, 6 Ports 2, 5 (Note 1) 13 13 17pical Operating Conditions Operational Gain, 4B (Notes 2, 3) 18 Channels, Number of NTSC (Note 4) 0-perating Levels (Recommended) Frequency, MHz Input, 4BmV min. (Note 5) 0-ulput, 4BmV min. (Note 5) 10.5/9/6.5 10.5/9/6	Passband, MHz	54-	750	5-42	
Ports 1, 3, 4, 6 Ports 2, 5 (Note 1) Ports 1, 3, 4, 6 Ports 2, 5 (Note 1) Ports 1, 3, 4, 6 Ports 2, 5 (Note 1) Ports 1, 3, 4, 6 Ports 2, 5 (Note 1) Ports 1, 5 (Note	Housing, MHz	10	00	_	
Ports 2, 5 (Note 1) 13	AC Current Passing, A				
Typical Operating Conditions 28 37 18 Channels, Number of NTSC (Note 4) 79 79 79 79 79 79 79 7	Ports 1, 3, 4, 6	1	5	1	5
Channels, Number of NTSC (Note 4)	Ports 2, 5 (Note 1)	1	3	13	
Channels, Number of NTSC (Note 4) 79 79 79 6 Departing Levels (Recommended) Frequency, MHz	Typical Operating Conditions				
### Page Page	Operational Gain, dB (Notes 2, 3)	28	<i>37</i>	1	8
Frequency, MHz	Channels, Number of NTSC (Note 4)	79	<i>7</i> 9	6	5
Input, dbm/ min. (Note 5) 10.5i9(6.5 10.5i9(6.5 17/17) Output, dbm/ (Note 6) 38.5i35/26 47.5i44/35 35/35 Performance Specifications @ Recommended Levels Temperature Range: -40°C to +60°C) Carrier-to-Interference Ratio, dB Composite Triple Beat 83 70 — Second Order Beat (F1 ± F2) ———————————————————————————————————	Operating Levels (Recommended)				
Output, dBmV (Note 6) 38.5/35/26 47.5/44/35 35/35 Performance Specifications @ Recommended Levels Temperature Range: -40°C to +60°C) Carrier-to-Interference Ratio, dB Composite Triple Beat 83 70 — Second Order Beat (F1 ± F2) — — 82 Cross Modulation (per NCTA std.) (Note 7) 79 67 78 Third Order Beat (F1 ± F2 ± F3) — — 89 Composite 2IM 73 71 — Composite Intermodulation Noise CIN (Note 8) 85 68 — Noise, 4MHz, 75 Ohms (Note 3) 60.5/59/57 60.5/59/57 63 Voise Figure, dB (without EQ) (Note 9) 8/8/7.5 8/8/7.5 13 Factory Alignment (with ALC Reserve, without EQ) 33 42 19 Factory Alignment (with ALC Reserve, without EQ) 11 11 — Fallat Loss, dB @ 862MHz 11 11 1 — Fallat Loss, dB in Slope), ±dB 0.5 0.75 0.5 Fallatess (@ Gain Slope), ±dB 0.5 0.75 0.5	Frequency, MHz	750/550/54	750/550/54	42	2/5
Performance Specifications @ Recommended Levels Perpenditure Range: -40°C to +60°C	Input, dBmV min. (Note 5)	10.5/9/6.5	10.5/9/6.5	17	/17
Temperature Range: -40°C to +60°C	Output, dBmV (Note 6)	38.5/35/26	47.5/44/35	35	/35
Composite Triple Beat 83 70 —	Performance Specifications @ Recommended Levels Temperature Range: -40°C to +60°C)				
Second Order Beat (F1 ± F2)	Carrier-to-Interference Ratio, dB				
Cross Modulation (per NCTA std.) (Note 7) 79 67 78 Third Order Beat (F1 ± F2 ± F3) — — — — — — — — — — — — — — — — — — —	Composite Triple Beat	83	70	_	_
Third Order Beat (F1 ± F2 ± F3)	Second Order Beat (F1 \pm F2)	_	_	8	2
Composite 2 M 73 71 —	Cross Modulation (per NCTA std.) (Note 7)	<i>7</i> 9	67	7	8
Composite Intermodulation Noise CIN (Note 8) 85 68	Third Order Beat (F1 \pm F2 \pm F3)	_	_	89	
Noise, 4MHz, 750hms (Note 3) Noise Figure, dB (without EQ) (Note 9) 8/8/7.5 8/8/7.5 8/8/7.5 8/8/7.5 8/8/7.5 8/8/7.5 13 Full Gain, dB (without EQ and ALC) 33 42 19 Factory Alignment (with ALC Reserve, without EQ) Factory Alignment (with ALC Reserve, 10 10 10 10 10 10 10 10 10 10 10 10 10	Composite 2IM	73	71	_	
Noise Figure, dB (without EQ) (Note 9)	Composite Intermodulation Noise CIN (Note 8)	85	68	_	
Full Gain, dB (without EQ and ALC) Factory Alignment (with ALC Reserve, without EQ) Cable Loss, dB @ 862MHz Flat Loss, dB 18 27 19 Factory Alignment (with ALC Reserve, without EQ) Factory Alignment (with ALC Reserve, without EQ) Flat Loss, dB @ 862MHz Flat Loss, dB 18 27 19 Flat Loss, dB 18 27 19 Flatness (@ Gain Slope), ± dB 0.5 Flowering Requirements, Maximum/Typical (Note 10) 17 17 16.5 Flowering Requirements, Maximum/Typical (Note 11) AC Voltage, 60Hz AC Courrent, mA CC Current, mA @ 24V ± 0.5V Level Control Range, dB @ 862MHz Accuracy (-40°C to 60°C) Dutput Level Range (from nominal) + 2/-6dB Current, Band (Recommended) 499.25MHz (Single Channel) Flat Frequency Band (Recommended) SPB-xx SPB-xx Equalization to Compensate for Cable Loss	Noise, 4MHz, 75Ohms (Note 3)	60.5/59/57	60.5/59/57	63	
Factory Alignment (with ALC Reserve, without EQ) Cable Loss, dB @ 862MHz 11 11 11 — Flat Loss, dB @ 862MHz 18 27 19 Gain Slope, dB -0.25 to 1.0 -1.0 to 1.0 — Flatness (@ Gain Slope), ±dB 0.5 0.75 0.5 Return Loss, dB min., All Entry Ports (Note 10) 17 17 16.5 Powering Requirements, Maximum/Typical (Note 11) AC Voltage, 60Hz AC Courrent, mA CC Current, mA CC Current, mA CC Current, mA CC Current, mA @ 24V ±0.5V 1960/1785 Level Control Range, dB @ 862MHz ±4.0dB — Accuracy (-40°C to 60°C) ±0.5dB — Coutput Level Range (from nominal) +2/-6dB — Coutput Level Range (from nominal) +2/-6dB — Coutput Level Range (from nominal) 499.25MHz (Single Channel) — Gain Control Flug-in PAD SPB-xx SPB-xx Equalization to Compensate for Cable Loss	Noise Figure, dB (without EQ) (Note 9)	8/8/7.5	8/8/7.5	13	
Cable Loss, dB @ 862MHz 11 11 — Flat Loss, dB 18 27 19 Gain Slope, dB −0.25 to 1.0 −1.0 to 1.0 — Flatness (@ Gain Slope), ±dB 0.5 0.75 0.5 Return Loss, dB min., All Entry Ports (Note 10) 17 17 16.5 Powering Requirements, Maximum/Typical (Note 11) With Active Reverse AC Voltage, 60Hz @ 90V @ 60V AC Power, Watts 54/49 53/48 AC Current, mA 740/680 985/890 DC Current, mA @ 24V ± 0.5V 1960/1785 1960/1785 Level Control 2 ± 4.0dB — Range, dB @ 862MHz ± 4.0dB — Accuracy (−40°C to 60°C) ± 0.5dB — Output Level Range (from nominal) + 2/−6dB — Poliot Frequency Band (Recommended) 499.25MHz (Single Channel) — Gain Control SPB-xx SPB-xx	Full Gain, dB (without EQ and ALC)	33	42	19	
18 27 19 19 19 19 19 19 19 1	actory Alignment (with ALC Reserve, without EQ)				
Company Comp	Cable Loss, dB @ 862MHz	11	11	_	_
### Action of the compensate for Cable Loss 10.5 10.75 10.5	Flat Loss, dB	18	27	1	9
Return Loss, dB min., All Entry Ports (Note 10) 17 17 16.5 Powering Requirements, Maximum/Typical (Note 11) With Active Reverse AC Voltage, 60Hz @ 90V @ 60V AC Power, Watts 54/49 53/48 AC Current, mA 740/680 985/890 AC Current, mA @ 24V ± 0.5V 1960/1785 1960/1785 Accuracy (-40°C to 60°C) ± 0.5dB — Accuracy (-4	Gain Slope, dB	-0.25 to 1.0	-1.0 to 1.0	-	_
With Active Reverse	Flatness (@ Gain Slope), ±dB	0.5	0.75	0.	.5
AC Voltage, 60Hz AC Power, Watts AC Current, mA AC	Return Loss, dB min., All Entry Ports (Note 10)	17	17	16	5.5
AC Power, Watts AC Current, mA AC Current, mA CC Current, mA @ 24V ± 0.5V Level Control Range, dB @ 862MHz Accuracy (-40°C to 60°C) Dutput Level Range (from nominal) Pilot Frequency Band (Recommended) Plug-in PAD SPB-xx SPB-xx Equalization to Compensate for Cable Loss	Powering Requirements, Maximum/Typical (Note 11)			With Activ	e Reverse
AC Current, mA	AC Voltage, 60Hz			@ 90 <i>V</i>	@ 60 <i>V</i>
1960/1785 1960	AC Power, Watts			54/49	53/48
Level Control Range, dB @ 862MHz	AC Current, mA			740/680	985/890
Range, dB @ 862MHz ±4.0dB — Accuracy (-40°C to 60°C) ±0.5dB — Output Level Range (from nominal) +2/-6dB — Pilot Frequency Band (Recommended) 499.25MHz (Single Channel) — Gain Control Plug-in PAD SPB-xx SPB-xx Equalization to Compensate for Cable Loss	DC Current, mA @ 24V ±0.5V			1960/1785	1960/1785
Accuracy (-40°C to 60°C) ± 0.5dB — Output Level Range (from nominal) +2/-6dB — Pilot Frequency Band (Recommended) 499.25MHz (Single Channel) — Gain Control Plug-in PAD SPB-xx SPB-xx Equalization to Compensate for Cable Loss	evel Control				
Output Level Range (from nominal) +2/-6dB — Pilot Frequency Band (Recommended) 499.25MHz (Single Channel) — Gain Control Plug-in PAD SPB-xx SPB-xx Equalization to Compensate for Cable Loss	Range, dB @ 862MHz	± 4.	0 dB	-	_
Pilot Frequency Band (Recommended) 499.25MHz (Single Channel) Gain Control Plug-in PAD SPB-xx Equalization to Compensate for Cable Loss	Accuracy (–40°C to 60°C)	±0.5dB		-	_
Gain Control Plug-in PAD SPB-xx Equalization to Compensate for Cable Loss	Output Level Range (from nominal)	+2/-6dB		_	_
Plug-in PAD SPB-xx SPB-xx Equalization to Compensate for Cable Loss	Pilot Frequency Band (Recommended)			_	_
Equalization to Compensate for Cable Loss	Gain Control				
		SPE	?-xx	SPE	3- <i>xx</i>
riug-in Equalizers for Additional Equalization SEQ-750-XX MEQ-42-X		550.5		1450 40	
	riug-iii Equalizers for Additional Equalization	SEQ-750-xx 		MEQ-42-x	

FlexNet Trunk Amplifier FNT97CJ-xx6(H/P)6xx 750MHz, 42/54 Split

	FORWARD		REVERSE		
	Trunk	2 O/P Bridger	Trunk & 2 O/P Bridger		
Chrominance/Luminance Delay, Maximum					
Channel 2, ns/3.58MHz		32	_		
Channel 3, ns/3.58MHz		15	_		
Channel 4, ns/3.58MHz		8	_		
Channel 5, ns/3.58MHz		5	_		
Reverse Group Delay, Maximum					
5.5 - 7MHz, ns		_	45		
10 - 11.5MHz, ns		_	6		
35 - 36.5MHz, ns	_		9		
38.5 - 40MHz, ns		_	28		
Hum Modulation (Time Domain @ 15A)					
5 - 10MHz, –dBc	_		55		
11 - 750MHz, –dBc	60		60		60

Specification Document Number 600947 Rev A

NOTES:

- 1. FNT97CJ-xx6(H/P)6xx trunk amplifiers provide one trunk output and two bridger outputs user-configurable to four outputs. Ports 2 and 5 provide the additional bridger outputs.
- 2. Spacing is at highest frequency with SEQ-750-xx installed. Reverse spacing includes losses due to housing, diplex filters, and MEQ-42-xx.
- 3. The specifications are based on the amplifier configured (with two SPB-0s) as a 2-Output Bridger with distribution outputs on Ports 3 and 6. When using distribution plug-ins, SS-1000-2, SDC-1000-8, or SDC-1000-12, levels should be derated accordingly based on the accessory specification.
- 4. NTSC video channels occupying the 54 to 550MHz frequency spectrum.
- 5. Recommended minimum forward input level at 750 MHz including loss due to equalizer.
- 6. Recommended maximum reverse output level at 42 MHz including loss due to equalizer.
- 7. Cross modulation specification number indicates typical cascade performance.
- 8. Systems operating with digitally compressed channels or equivalent broadband noise from 550 to 750 MHz at levels 6dB below equivalent video channels will experience a composite distortion (CIN) appearing as noise in the 54 to 550 MHz frequency spectrum.
- 9. The Noise Figure and C/N specifications are "Typical" within specified passband.
- Forward input return loss is 16dB min.
- 11. Powering requirements indicated are with the power supply 122027-05. See Power Curves 333995-17 for typical performance under various operating conditions.
- 12. For the "H" output configuration option, –20dB internal forward and reverse directional testpoints. For the "P" output configuration option, –20dB external forward directional testpoints and –20dB internal reverse directional testpoints. Testpoint accuracy is ±0.5dB for all testpoints except the Port 1 forward input testpoint which is ±0.75dB.

FlexNet Bridger Amplifier FNB98CJ-xx6(G/N)6xx 750MHz, 42/54 Split

	FORWARD	REVERSE		
	Bridger (ea)	Bridge	Bridger (ea)	
General				
Passband, MHz	54-750	5-42		
Housing, MHz	1000	_	_	
AC Current Passing, A				
Ports 1, 3, 6	15	1	5	
Ports 2, 5 (Note 1)	13	1	3	
Typical Operating Conditions				
Operational Gain, dB (Notes 2, 3)	37	1	8	
Channels, Number of NTSC (Note 4)	79	e	5	
Operating Levels (Recommended)				
Frequency, MHz	750/550/54	42	2/5	
Input, dBmV min. (Note 5)	10.5/9/6.5	17	17	
Output, dBmV (Note 6)	47.5/44/35	35/	35	
Performance Specifications @ Recommended Levels Temperature Range: -40°C to +60°C				
Carrier-to-Interference Ratio, dB				
Composite Triple Beat	70	_	_	
Second Order Beat (F1 \pm F2)	_	8	2	
Cross Modulation (per NCTA std.) (Note 7)	67	7	8	
Third Order Beat (F1 \pm F2 \pm F3)	_	89		
Composite 2IM	71	_		
Composite Intermodulation Noise CIN (Note 8)	68	_		
Noise, 4MHz, 75Ohms (Note 3)	60/60/56	64.5		
Noise Figure, dB (without EQ) (Note 9)	8.5/8/8.5	11.5		
Full Gain, dB (without EQ and ALC)	42	19		
Factory Alignment (with ALC Reserve, without EQ)				
Cable Loss, dB @ 862MHz	11	_		
Flat Loss, dB	27	19		
Gain Slope, dB	-1.0 to 1.0	_		
Flatness (@ Gain Slope), ±dB	0.75	0.5		
Return Loss, dB min., All Entry Ports (Note 10)	17	16.5		
Powering Requirements, Maximum/Typical (Note 11)		With Activ	e Reverse	
AC Voltage, 60Hz		@ 90 <i>V</i>	@ 60V	
AC Power, Watts	48.5/44		47.5/43	
AC Current, mA	690/660		870/785	
DC Current, mA @ $24V \pm 0.5V$		1760/1585	1760/1585	
Level Control				
Range, dB @ 862MHz	± 4.0 dB	_	_	
Accuracy (–40°C to 60°C)	± 0.5 dB	_		
Output Level Range (from nominal)	+2/-6dB	_		
Pilot Frequency Band (Recommended)	499.25MHz (Single Channel)	_		
Gain Control				
Plug-in PAD	SPB-xx	SPB-xx		
Equalization to Compensate for Cable Loss				

FlexNet Bridger Amplifier FNB98CJ-xx6(G/N)6xx 750MHz, 42/54 Split

	FORWARD	REVERSE
	Bridger (ea)	Bridger (ea)
Chrominance/Luminance Delay, Maximum		
Channel 2, ns/3.58MHz	32	_
Channel 3, ns/3.58MHz	15	_
Channel 4, ns/3.58MHz	8	_
Channel 5, ns/3.58MHz	5	_
Reverse Group Delay, Maximum		
5.5 - 7MHz, ns	_	45
10 - 11.5MHz, ns	_	5
35 - 36.5MHz, ns	_	9
38.5 - 40MHz, ns	_	28
Hum Modulation (Time Domain @ 15A)		
5 - 10MHz, –dBc	_	55
11 - 750MHz, –dBc	60	60

Specification Document Number 600948 Rev A

NOTES:

- FNB98CJ-xx6(G/N)6xx bridger amplifiers provide two bridger outputs user-configurable to four outputs. Ports 2 and 5 provide the additional bridger outputs.
- 2. Spacing is at highest frequency with SEQ-750-xx installed. Reverse spacing includes losses due to housing, diplex filters, and MEQ-42-xx.
- 3. The specifications are based on the amplifier configured (with two SPB-0s) as a 2-Output Bridger with distribution outputs on Ports 3 and 6. When using distribution plug-ins, SS-1000-2, SDC-1000-8, or SDC-1000-12, levels should be derated accordingly based on the accessory specification.
- 4. NTSC video channels occupying the 54 to 550MHz frequency spectrum.
- 5. Recommended minimum forward input level at 750 MHz including loss due to equalizer.
- 6. Recommended maximum reverse output level at 42MHz including loss due to equalizer.
- 7. Cross modulation specification number indicates typical cascade performance.
- 8. Systems operating with digitally compressed channels or equivalent broadband noise from 550 to 750MHz at levels 6dB below equivalent video channels will experience a composite distortion (CIN) appearing as noise in the 54 to 550MHz frequency spectrum.
- 9. The Noise Figure and C/N specifications are "Typical" within specified passband.
- 10. Forward input return loss is 16dB min.
- 11. Powering requirements indicated are with the power supply 122027-05. See Power Curves 333995-17 for typical performance under various operating conditions.
- 12. For the "G" output configuration option, –20dB internal forward and reverse directional testpoints. For the "N" output configuration option, –20dB external forward directional testpoints and –20dB internal reverse directional testpoints. Testpoint accuracy is ± 0.5dB for all testpoints except the Port 1 forward input testpoint which is ± 0.75dB.

FlexNet Trunk Amplifier FNT94CL-xx6x6xx 750MHz, 40/54 Split

	•			
	FORWARD		REVERSE	
	Trunk	2 O/P Bridger	Trunk & 2 (D/P Bridger
General				
Passband, MHz	54-	750	5-40	
Housing, MHz	10	00	_	
AC Current Passing, A				
Ports 1, 3, 4, 6	1	5	15	
Ports 2, 5 ("H" and "P" output options only) (Note 1)	1	3	1	3
Typical Operating Conditions				
Operational Gain, dB (Notes 2, 3)	28	37	1	8
Channels, Number of NTSC (Note 4)	77	77	6	5
Operating Levels (Recommended)				
Frequency, MHz	750/550/54	750/550/54	40)/5
Input, dBmV min. (Note 5)	10.5/9.5/10.5	10.5/9.5/10.5	17/	17
Output, dBmV (Note 6)	38.5/35/26	47.5/44/35	35/	′3 <i>5</i>
Performance Specifications @ Recommended Levels (Temperature Range: -40°C to +60°C)				
Carrier-to-Interference Ratio, dB				
Composite Triple Beat	82	70	_	_
Second Order Beat (F1 \pm F2)	_	_	8	2
Cross Modulation (per NCTA std.) (Note 7)	79	67	7	8
Third Order Beat (F1 \pm F2 \pm F3)	_	_	89	
Composite 2IM	<i>73</i>	66	_	
Composite Intermodulation Noise CIN (Note 8)	85	68	_	
Noise, 4MHz, 75Ohms (Note 3)	60.5/59.5/60	60.5/59.5/60	63	
Noise Figure, dB (without EQ) (Note 9)	8/8/8.5	8/8/8.5	13	
Full Gain, dB (without EQ and ALC)	33	42	19	
Factory Alignment (with ALC Reserve, without EQ)				
Cable Loss, dB @ 862MHz	17	17	_	
Flat Loss, dB	12	21	19	
Gain Slope, dB	-0.25 to 1.0	-1.0 to 1.0	_	
Flatness (@ Gain Slope), ±dB	1.0	1.5	1.0	
Return Loss, dB min., All Entry Ports (Note 10)	17	17	16	5.5
Powering Requirements, Maximum/Typical (Note 11)			With Activ	e Reverse
AC Voltage, 60Hz			@ 90V	@ 60V
AC Power, Watts			54/49	53/48
AC Current, mA			740/680	985/890
DC Current, mA @ $24V \pm 0.5V$			1960/1785	1960/178
Level Control				
Range, dB @ 862MHz	± 4.	0dB	_	_
Accuracy (–40°C to 60°C)	± 0.5dB		_	_
Output Level Range (from nominal)	+2/-6dB		_	_
Pilot Frequency Band (Recommended)	439.25MHz (Single Channel)		_	_
Gain Control				
Plug-in PAD	SPE	3-xx	SPE	?-xx
Equalization to Compensate for Cable Loss				
Plug-in Equalizers for Additional Equalization	SEQ-8	862-xx	MEQ	-42-x

Specification Document Numbers 600845 Rev D and 600846 Rev C

NOTES:

- 1. FNT94CL-xx6(K/M)6xx ("K" and "M" option) trunk amplifiers provide one trunk output and two bridger outputs. Ports 2 and 5 are not available. FNT94CL-xx6(H/P)6xx ("H" and "P" options) trunk amplifiers provide one trunk output and two bridger outputs user-configurable to four outputs.
- 2. Spacing is at highest frequency with SEQ-750-xx installed. Reverse spacing includes losses due to housing, diplex filters, and MEQ-42-xx.
- 3. The specifications are based on the amplifier configured (with two SPB-0s) as a 2-Output Bridger with distribution outputs on Ports 3 and 6. When using distribution plug-ins, SS-1000-2, SDC-1000-8, or SDC-1000-12, levels should be derated accordingly based on the accessory specification.
- 4. NTSC video channels occupying the 54 to 550MHz frequency spectrum.
- 5. Recommended minimum forward input level at 750 MHz including loss due to equalizer.
- 6. Recommended maximum reverse output level at 40MHz including loss due to equalizer.
- 7. Cross modulation specification number indicates typical cascade performance.
- 8. Systems operating with digitally compressed channels or equivalent broadband noise from 550 to 750 MHz at levels 6dB below equivalent video channels will experience a composite distortion (CIN) appearing as noise in the 54 to 550 MHz frequency spectrum.
- 9. The Noise Figure and C/N specifications are "Typical" within specified passband.
- 10. Forward input return loss is 16dB min.
- 11. Powering requirements indicated are with the power supply 122027-05. See Power Curves 333995-17 for typical performance under various operating conditions.
- 12. For the "K" and "H" output configuration options, –20dB internal forward and reverse directional testpoints. For the "P" and "M" output configuration options, –20dB external forward directional testpoints and –20dB internal reverse directional testpoints. Testpoint accuracy is ± 0.5dB except the Port 1 forward input is ±0.75dB.
- 13. The Chrominance/Luminance delay per amplifier at channel 2 (NTSC) is typically 28 ns and Group delay at 40 MHz is typically 28 ns/1.5 MHz.

FlexNet Trunk Amplifier FNT96CL-xx6x6xx 750MHz, 40/54 Split

	•			
	FORWARD Trunk 2 O/P Bridger		REVERSE Trunk & 2 O/P Bridger	
General				
Passband, MHz	54-	750	5	40
Housing, MHz	10	000	_	
AC Current Passing, A				
Ports 1, 3, 4, 6	1	5	1	5
Ports 2, 5 ("H", "P", "S", and "F" output options only) (Note 1)	1	3	1	3
Typical Operating Conditions				
Operational Gain, dB (Notes 2, 3)	31	37	1	8
Channels, Number of NTSC (Note 4)	77	77	6	5
Operating Levels (Recommended)				
Frequency, MHz	750/550/54	750/550/54	40)/5
Input, dBmV min. (Note 5)	10.5/9.5/10.5	10.5/9.5/10.5	17/	17
Output, dBmV (Note 6)	41.5/38/29	47.5/44/35	35/	35
Performance Specifications @ Recommended Levels (Temperature Range: -40°C to +60°C)				
Carrier-to-Interference Ratio, dB				
Composite Triple Beat	77	68	-	_
Second Order Beat (F1 \pm F2)	_	_	8	2
Cross Modulation (per NCTA std.) (Note 7)	<i>75</i>	66	7	8
Third Order Beat (F1 \pm F2 \pm F3)	_	_	89	
Composite 2IM	74	69	_	
Composite Intermodulation Noise CIN (Note 8)	<i>7</i> 9	66	_	
Noise, 4MHz, 75Ohms (Note 3)	60.5/59.5/60	60.5/59.5/60	63	
Noise Figure, dB (without EQ) (Note 9; for "K" or "M" option Note 3)	8/8/8.5	8/8/8.5	13	
Full Gain, dB (without EQ and ALC)	36	42	1	9
Factory Alignment (with ALC Reserve, without EQ)				
Cable Loss, dB @ 862MHz	17	17	_	
Flat Loss, dB	15	21	19	
Gain Slope, dB	-0.25 to 1.0	-1.0 to 1.0	_	
Flatness (@ Gain Slope), ±dB	1.0	1.5	1.0	
Return Loss, dB min., All Entry Ports (Note 10)	17	17	16	.5
Powering Requirements, Maximum/Typical (Note 11)			With Activ	e Reverse
AC Voltage, 60Hz			@ 90V	@ 60V
AC Power, Watts			56.5/52	55.5/51
AC Current, mA			760/720	1015/935
DC Current, mA @ 24V ± 0.5V			2055/1885	2055/188
Level Control				
Range, dB @ 862MHz	± 4.	.0dB	_	_
Accuracy (–40°C to 60°C)	± 0.5dB		_	_
Output Level Range (from nominal)	+2/-6dB		_	_
Pilot Frequency Band (Recommended)	439.25MHz (Single Channel)		_	_
Gain Control				
Plug-in PAD	SPE	3- <i>xx</i>	SPE	?-xx
Equalization to Compensate for Cable Loss				
Plug-in Equalizers for Additional Equalization	SEQ-8	362-xx	MEQ	-42-x

Specification Document Numbers 600912 Rev A, 600928 Rev B, and 600957 Rev A

NOTES:

- 1. FNT96CL-xx6(K/M)6xx ("K" and "M" output options) trunk amplifiers provide one trunk output and two bridger outputs. Ports 2 and 5 are not available. FNT96CL-xx6(H/P/S/F)6xx ("H", "P", "S", and "F" output options) trunk amplifiers provide one trunk output and two bridger outputs user-configurable to four outputs.
- 2. Spacing is at highest frequency with SEQ-750-xx installed. Reverse spacing includes losses due to housing, diplex filters, and MEQ-42-xx.
- 3. The specifications for the models configurable to four outputs (FNT96CL-xx6(H/P/S/F)6xx) are based on the amplifier configured (with two SPB-0s) as a 2-Output Bridger with distribution outputs on Ports 3 and 6. When using distribution plug-ins, SS-1000-2, SDC-1000-8, or SDC-1000-12, levels should be derated accordingly based on the accessory specification.
- 4. NTSC video channels occupying the 54 to 550 MHz frequency spectrum.
- 5. Recommended minimum forward input level at 750 MHz including loss due to equalizer.
- 6. Recommended maximum reverse output level at 40 MHz including loss due to equalizer.
- 7. Cross modulation specification number indicates typical cascade performance
- 8. Systems operating with digitally compressed channels or equivalent broadband noise from 550 to 750MHz at levels 6dB below equivalent video channels will experience a composite distortion (CIN) appearing as noise in the 54 to 550MHz frequency spectrum.
- 9. The Noise Figure and C/N specifications are "Typical" within specified passband.
- 10. Forward input return loss is 16dB min.
- 11. Powering requirements indicated are with the power supply 122027-05. See Power Curves 333995-17 for typical performance under various operating conditions.
- 12. Internal forward and reverse directional testpoints are –20dB for the "H" and "K" output configuration options and –25dB for the "S" option. External forward directional testpoint and internal reverse directional testpoints are –20dB for the "P" and "M" output configuration options, and –25dB for the "F" output option. For all options, testpoint accuracy is ±0.5dB except the Port 1 forward input accuracy is ±0.75dB.
- 13. The Chrominance/Luminance delay per amplifier at channel 2 (NTSC) is typically 28 ns and Group delay at 40 MHz is typically 28 ns/1.5 MHz.

FlexNet Bridger Amplifier FNB96CL-xx6x6xx 750MHz, 40/54 Split

	•			
	FORWARD F		REVERSE	
	Bridger (ea)	Bridger (ea)		
General	-			
Passband, MHz	54-750	5-40		
Housing, MHz	1000	_		
AC Current Passing, A				
Ports 1, 3, 6	15	1	5	
Ports 2, 5 (except "J" output option) (Note 1)	13	1	3	
Typical Operating Conditions				
Operational Gain, dB (Notes 2, 3)	37	1	8	
Channels, Number of NTSC (Note 4)	77	6	5	
Operating Levels (Recommended)				
Frequency, MHz	750/550/54	40	0/5	
Input, dBmV min. (Note 5)	10.5/9.5/10.5	17.	17	
Output, dBmV (Note 6)	47.5/44/35	35.	/35	
Performance Specifications @ Recommended Levels Temperature Range: -40°C to +60°C				
Carrier-to-Interference Ratio, dB				
Composite Triple Beat	70	-	_	
Second Order Beat (F1 \pm F2)	_	8	2	
Cross Modulation (per NCTA std.) (Note 7)	67	7	8	
Third Order Beat (F1 \pm F2 \pm F3)	_	89		
Composite 2IM	66	_		
Composite Intermodulation Noise CIN (Note 8)	68	_		
Noise, 4MHz, 750hms (Note 3, except Note 9 for "J" option)	60/60/58	64.5		
Noise Figure, dB (without EQ) (Note 9)	8.5/7.5/10.5	11.5		
Full Gain, dB (without EQ and ALC)	42	19		
Factory Alignment (with ALC Reserve, without EQ)				
Cable Loss, dB @ 862MHz	17	_		
Flat Loss, dB	21	19		
Gain Slope, dB	-1.0 to 1.0	_		
Flatness (@ Gain Slope), ±dB	1.5	1.0		
Return Loss, dB min., All Entry Ports (Note 10)	17	16.5		
Powering Requirements, Maximum/Typical (Note 11)		With Activ	e Reverse	
AC Voltage, 60Hz		@ 90 <i>V</i>	@ 60 V	
AC Power, Watts		48.5/44 47.5/43		
AC Current, mA		690/660 870/78		
DC Current, mA @ 24V ± 0.5V		1760/1585	1760/158	
Level Control				
Range, dB @ 862MHz	± 4.0 dB	-	_	
Accuracy (–40°C to 60°C)	± 0.5dB	_		
Output Level Range (from nominal)	+2/-6dB	_		
Pilot Frequency Band (Recommended)	439.25MHz (Single Channel)			
Gain Control				
Plug-in PAD	SPB-xx	SPB-xx		
Equalization to Compensate for Cable Loss				
Plug-in Equalizers for Additional Equalization	SEQ-750-xx	MEQ	-42-x	

Specification Document Numbers 600843 Rev C, 600844 Rev D, and 600958 Rev A

NOTES:

- 1. FNB96CL-xx6J6xx ("J" option) bridger amplifiers provide two bridger outputs. Ports 2 and 5 are not available. FNB96CL-xx6(G/N/R/E)6xx ("G", "N", "R", and "E" options) bridger amplifiers provide two bridger outputs user-configurable to four outputs.
- 2. Spacing is at highest frequency with SEQ-750-xx installed. Reverse spacing includes losses due to housing, diplex filters, and MEQ-42-xx.
- 3. The specifications for the "G", "N", "R", and "E" output configuration options are based on the amplifier configured (with two SPB-0s) as a 2-Output Bridger with distribution outputs on Ports 3 and 6. When using distribution plug-ins, SS-1000-2, SDC-1000-8, or SDC-1000-12, levels should be derated accordingly based on the accessory specification.
- 4. NTSC video channels occupying the 54 to 550MHz frequency spectrum. 79 channels for "R" and "E" output options.
- 5. Recommended minimum forward input level at 750MHz including loss due to equalizer.
- 6. Recommended maximum reverse output level at 40 MHz including loss due to equalizer.
- 7. Cross modulation specification number indicates typical cascade performance.
- 8. Systems operating with digitally compressed channels or equivalent broadband noise from 550 to 750MHz at levels 6dB below equivalent video channels will experience a composite distortion (CIN) appearing as noise in the 54 to 550MHz frequency spectrum.
- 9. The Noise Figure and C/N specifications are "Typical" within specified passband.
- 10. Forward input return loss is 16dB.
- 11. Powering requirements indicated are with the power supply 122027-05. See Power Curves 333995-17 for typical performance under various operating conditions.
- 12. Internal forward and reverse directional testpoints are –20dB for the "G" and "J" output configuration options and –25dB for the "R" option. External forward directional testpoint and internal reverse directional testpoints are –20dB for the "N" output configuration option, and –25dB for the "E" output option. For all options, testpoint accuracy is ±0.5dB except the Port 1 forward input accuracy is ±0.75dB.
- 13. The Chrominance/Luminance delay per amplifier at channel 2 (NTSC) is typically 28ns and Group delay at 40MHz is typically 28ns/1.5MHz.

122027-05 90V, 2.3A Power Supply

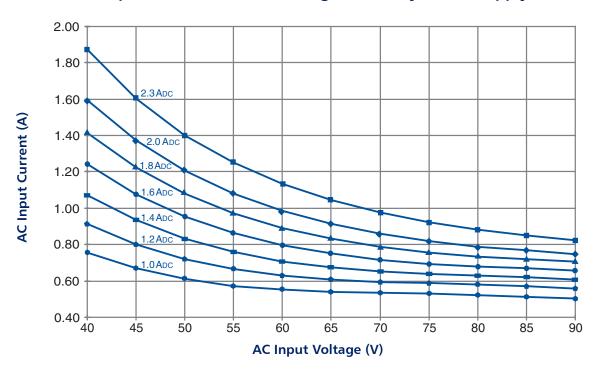
Input Voltage Range	40 to 90VAC	
	(Quasi-Squarewave)	
Input Frequency	50/60Hz	
Output Voltage	$24.0VDC \pm 0.5V$	
Output Voltage Ripple	15mV rms (max)	
Output Current	2.3ADC (max)	
Efficiency	87% (typ)	
Short Circuit Current	4.0ADC (max)	
Output Voltage Protection	31.5VDC	
Switching Frequency	25kHz	
Operating Temperature (Note 1)	−40°C to +60°C	
Hold-up Time @ max DC loading @ nomina	al DC loading	
40V	20 ms (typ)	
60V	45ms (typ)	
Cutoff Voltage	27Vrms (typ)	
Current Passing Capability (Note 2)	Ports 2 and 5: 13A, continuous	
	Ports 1, 3, 4, 6: 15A, continuous	
Time Delay @ Startup	0.25 to 1.00 sec	
Transponder Capable	Yes	
	Specification Document Number 601226 Rev A	

Specification Document Number 601226 Rev A

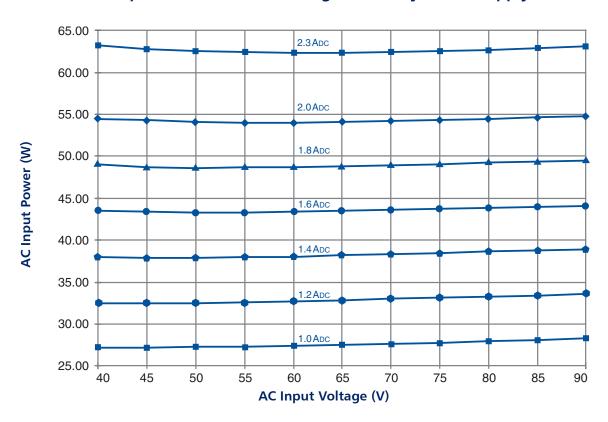
NOTES:

- 1. The operating temperature represents the outside ambient temperature of the die-cast housing in which power supply is installed (Housing Ambient Temp.).
- 2. Requires 12-pin to 12-pin power harness (P/N 174355-02) for 15A continuous, maximum current passing capability through ports 1, 3, 4, and 6.
- 3. See Power Curves 333995-17 for typical performance under various operating conditions.

Input Current—90V, 2.3A High Efficiency Power Supply



Input Power—90V, 2.3A High Efficiency Power Supply





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