Active DAS Tray, DCC500-B01

Broadband DAS RF Control and Diagnostic Unit
Rev. B

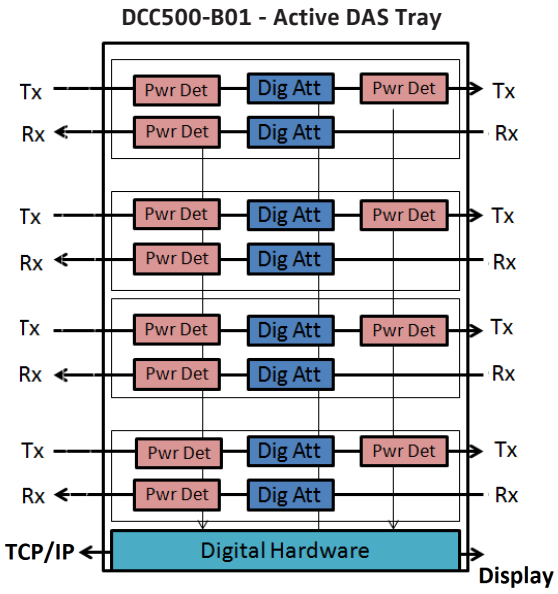
Description

The DCC500-B01 Active DAS tray provides local and remote power control and monitoring functions to optimize DAS system performance. The DAS Control Rack (DCR) front panel display provides complete DAS system performance at a glance. This unit can be used with existing DAS trays or combined with Microlab's High Power Point of Interface (HPOI) modules to provide a complete local/remote signal conditioning and monitoring solution. Includes internal battery backup to maintain attenuator settings for up to one week in the event of power failure. AC version available as **DCC500-A01**. (04/15)

Features

- Uplink and downlink signal level control and monitoring for individual channels
- 8 simplex channels – 4 uplink, 4 downlink
- 19" rack mount, 1RU
- Broadband, 698-2700MHz
- 24/7 power monitoring with alarm
- Extended dynamic range to -90dBm for uplink channels
- Automatic Level Control automatically (ALC) adjusts attenuation to maintain optimal Tx and Rx signal levels.
- Web server with Ethernet interface accessible via PC or mobile browser
- Front panel display with control
- Supports SNMP V3 and IPv6
- Includes Battery Backup
- User configured alarms
- 3 External Alarm Contacts
- Air interface independent
- -48/+24 VDC supply

Figure 1 - DCC500-B01 Block Diagram



REVB - Microlab, A Wireless Telecom Group Company, 25 Eastmans Road, Parsippany, NJ 07054
Tel: (973) 386-9696 • sales@microlab.fxr.com • www.microlab.fxr.com • Fax: (973) 386-9191

Table 1 - Electrical Specifications

PARAMETER	TEST CONDITIONS	FREQUENCY	MINIMUM	TYPICAL	MAXIMUM
Operating Frequency (MHz)*	-	-	698	-	2700
Input Return Loss (dB)	-	-	14	17	-
Insertion Loss (dB)	Uplink, 0dB attenuation	698 - 2200 MHz	-	-	7.0
		2200 -2700 MHz	-	-	8.5
	Downlink, 0dB attenuation	698 -2200 MHz	-	-	4
		2200 - 2700 MHz	-	-	4.5
Downlink Attenuation Adjustment (dB in 1dB Steps)	-	698 - 2700 MHz	0	-	31
Uplink Attenuation Adjustment (dB in 1dB Steps)	-	698 - 2700 MHz	0	-	62
Attenuator Accuracy (dB)	-	698 - 1000 MHz	-	-	±(0.1+3% of setting)
	-	1000 - 2200 MHz	-	-	±(0.15+5% of setting)
	-	2200 - 2700 MHz	-	-	±(10% of setting)
Isolation (dB)	Channel to Channel	-	60	70	-
	Uplink to Downlink	-	100	-	-
Power Monitor Range (dBm)	Uplink, RMS	698 - 2200 MHz	-90	-	0
		2200 - 2700 MHz	-85	-	0
	Downlink, RMS	698 - 2700 MHz	-40	-	+18
Power Measurement Accuracy (dB)	Uplink: -75 to 0dBm	-	-	-	±1
	Uplink: -90 to -75dBm	-			±2
	Downlink	698 - 2700 MHz	-	-	±1
Automatic Level Control (ALC) Accuracy	Uplink: -75 to 0dBm	-	-	-	±1
	Uplink: -90 to -75dBm	-	-	-	+2
	Downlink	-	-	-	±1
Measurement Bandwidth (MHz)*	-	-	-	50	-
Power Consumption (W)†	-48VDC Fans running	-	-	10.5	-
	+24VDC Fans running	-	-	12	-

*Device will work outside specified limits but with degraded accuracy and/or performance †DC in-rush current = 2 A for 50 ms

Table 2 - Absolute Maximum Ratings

Parameter	Specification
Downlink RF Input Power	+18dBm average
	+30dBm peak (1ns)
Uplink RF Input Power	+10dBm average
	+22dBm peak (1ns)
Temperature	0°C to +50°C operational
	-25°C to +70°C storage
DC Power	-48/+24 VDC

Table 3 - Mechanical Specifications

Parameter	Specification
Dimensions	1RU 19" EIA rack-mount module 1.75"(h) x 19"(d) x 17.5" (w)
Weight	16lbs
RF interface	SMA female
Ethernet Ports	RJ-45 Ethernet ports (2), IP-based, 10Base-T
USB Port	Type B (firmware updates only, no control access)
Dry Contacts	#6 screws (8)
Ground Lugs	1/4-20 screws (2)
Fans	1 input, 1 output

Figure 2 - DCC500-B01 with 4 Channel HPOI (DCC520-A43)

Figure 3 - DCC500-B01 Downlink Input Power Error

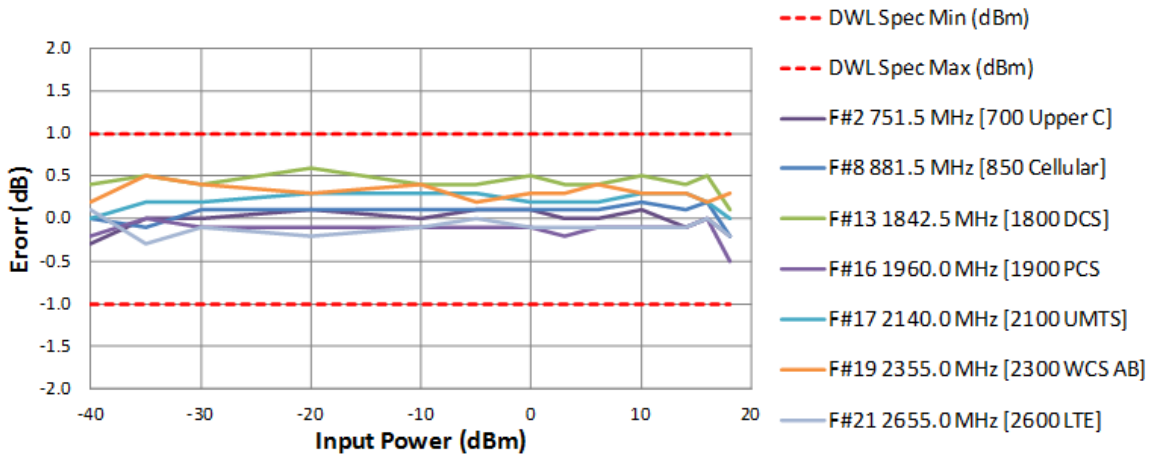


Figure 4 - DCC500-B01 Downlink Ouput Power Error

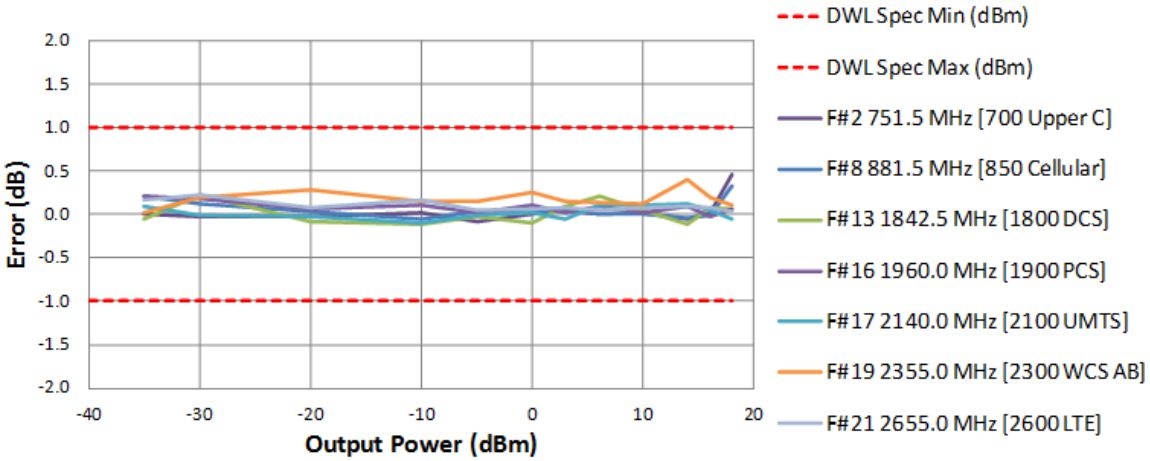


Figure 5 - DCC500-B01 Uplink Output Power Error

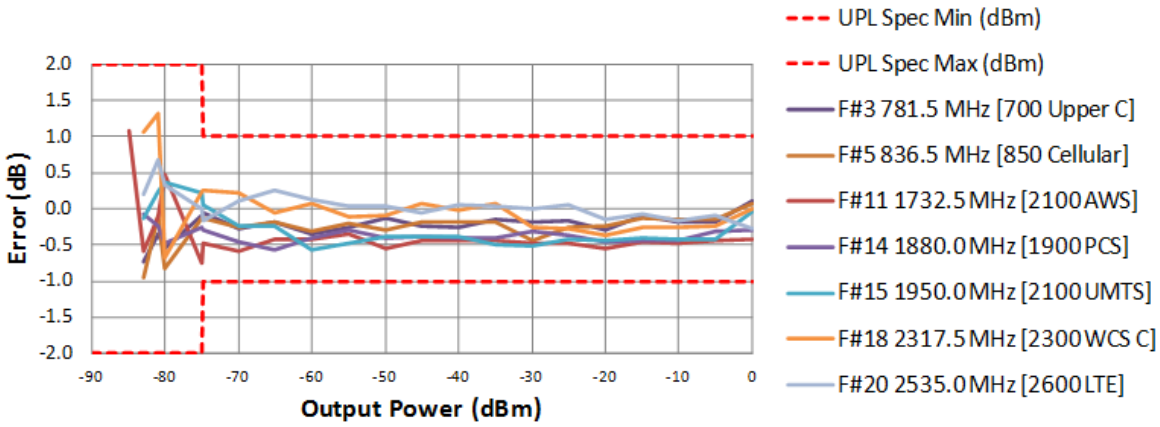


Figure 6 - DCC500-B01 Downlink (Tx) Insertion Loss @ 25°C

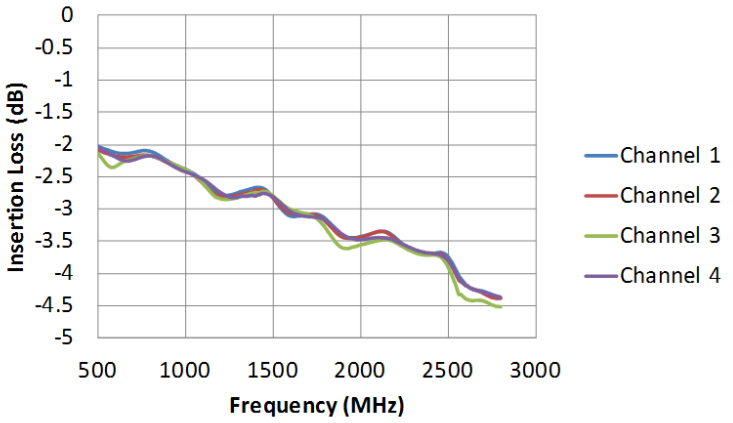


Figure 7 - DCC500-B01 Uplink (Rx) Insertion Loss @ 25°C

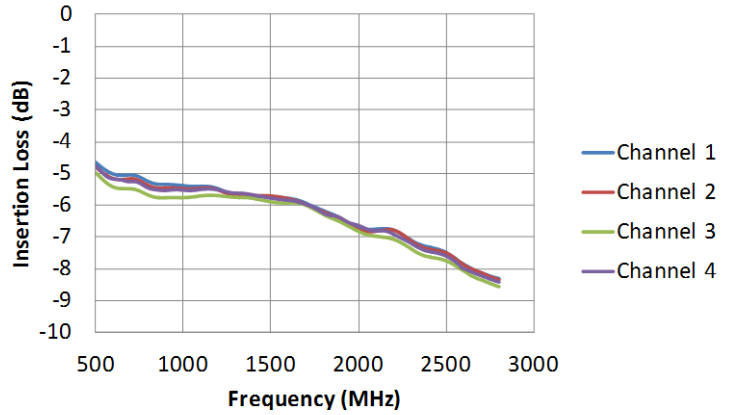


Figure 8 - DCC500-B01 Channel to Channel Isolation @ 25°C

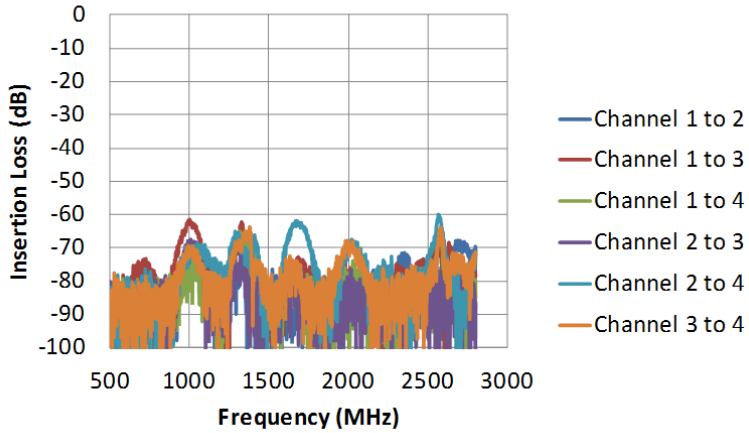


Figure 9 - DCC500-B01 Application Example Block Diagram

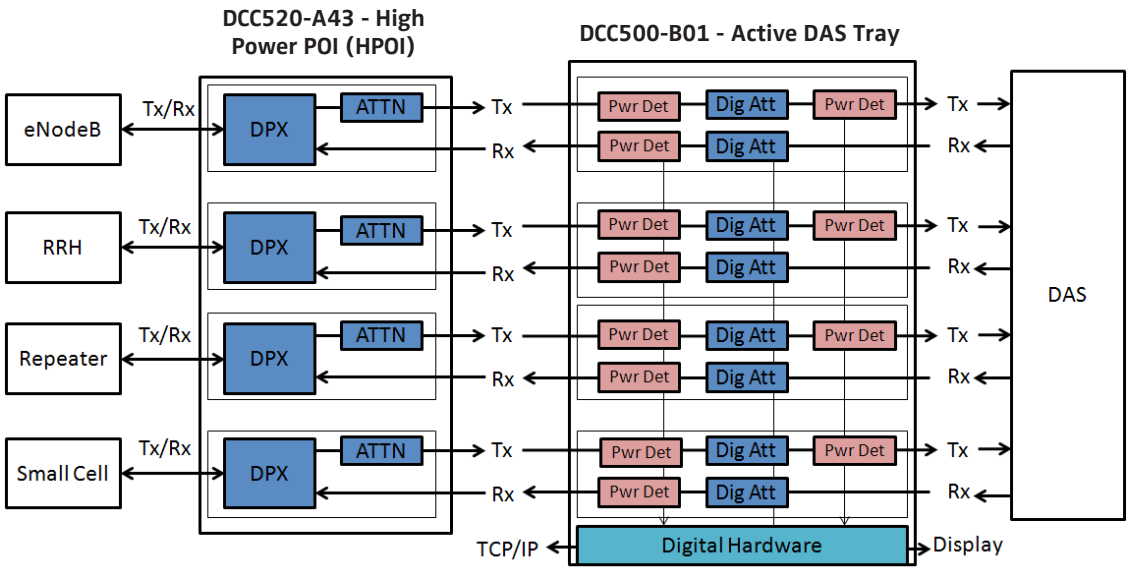


Table 4 - Available Models

Model #	Description
DCC500-B01	4 channel low power Active DAS tray with power monitoring and attenuation control (+18dBm maximum average input); -48/+24 VDC
DCC500-A01	4 channel low power Active DAS tray with power monitoring and attenuation control (+18dBm maximum average input); 115/220 VAC
DCC550-B01	4 channel power monitoring only DAS Tray
DCC560-B01	4 channel attenuation control only DAS Tray (+18dBm maximum input)
DCC520-A48*	Passive High Power Interface, 60W 700 + 2100 AWS, 2RU
DCC520-A43*	Passive High Power Interface, 20W 700 + 2100 AWS, 1RU
DCC520-A37*	Passive High Power Interface, 5W 700 + 2100 AWS, 1RU
DCC520-A27*	Passive High Power Interface, 0.5W 700 + 2100 AWS, 1RU

*Other HPOI Band and Band Combinations are available

Table 5 - Included Accessories

Part Number	Description
0034.2516	1A DC Power Fuse
DCC-401	Rack Mid-mount kit
DCC-15	Rack Screw Kit