



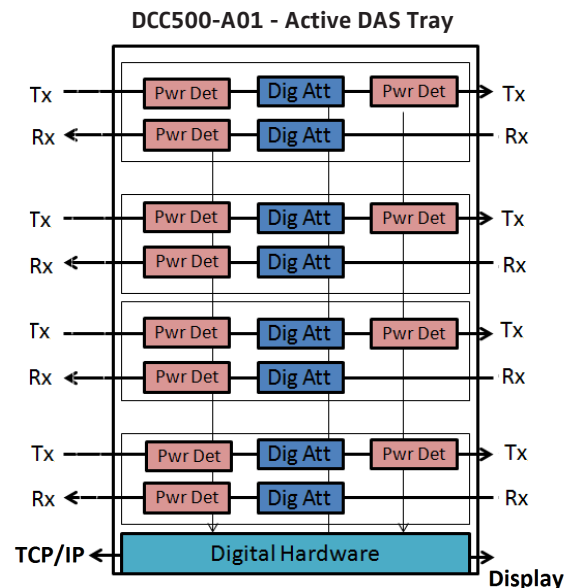
## Description

The DCC500-A01 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. DC version available as **DCC500-B01**. (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
- ◆ 115/220 VAC supply
- ◆ FCC Part 15, Class A

Figure 1 - DCC500-A01 Block Diagram



**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,<br>0dB attenuation   | 698 - 2200 MHz  | -       | -       | 7.0                   |
|   |                              | 2200 - 2700 MHz | -       | -       | 8.5                   |
|   | Downlink,<br>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)                             | 115 VAC<br>Fans running      | -               | -       | 12      | 13                    |

\*Device will work outside specified limits but with degraded accuracy and/or performance

**Table 2 - Absolute Maximum Ratings**

| Parameter                      | Specification            |
|--------------------------------|--------------------------|
| <b>Downlink RF Input Power</b> | +18dBm average           |
|                                | +30dBm peak (1ns)        |
| <b>Uplink RF Input Power</b>   | +10dBm average           |
|                                | +22dBm peak (1ns)        |
| <b>Temperature</b>             | 0°C to +50°C operational |
|                                | -25°C to +70°C storage   |
| <b>AC Power</b>                | 90-250VAC,<br>47-63Hz    |

**Table 3 - Mechanical Specifications**

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

**Figure 2 - DCC500-A01 with 4 Channel HPOI (DCC520-A43)**



Figure 3 - DCC500-A01 Downlink Input Power Error

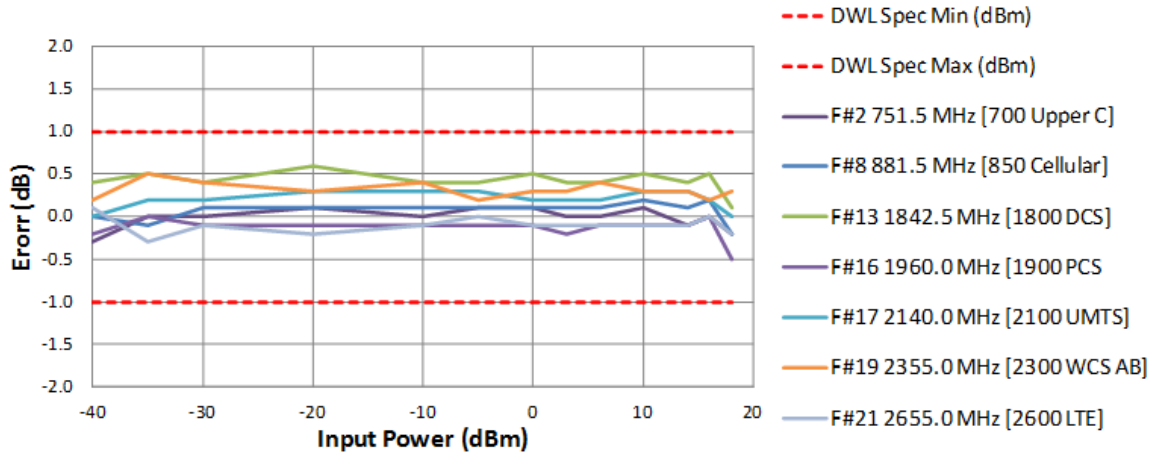


Figure 4 - DCC500-A01 Downlink Output Power Error

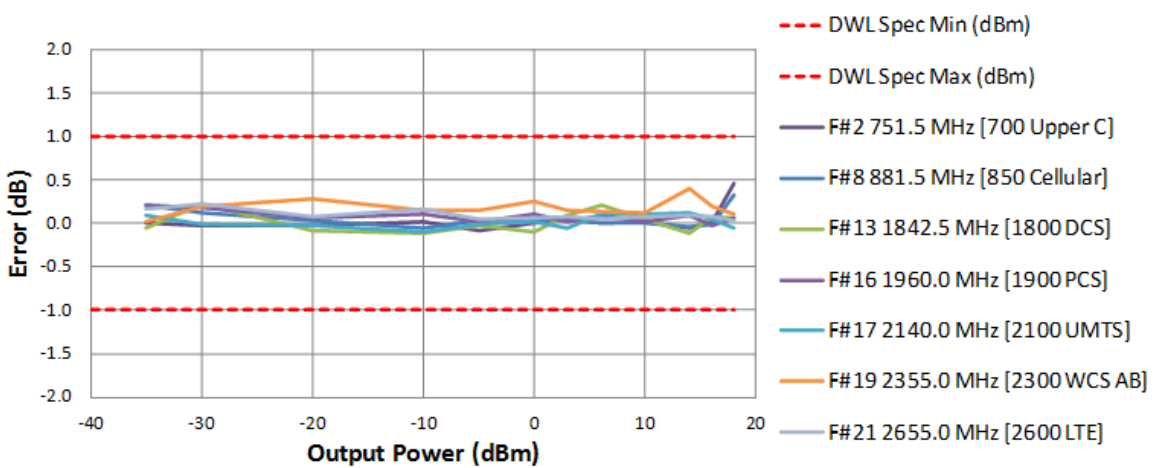


Figure 5 - DCC500-A01 Uplink Output Power Error

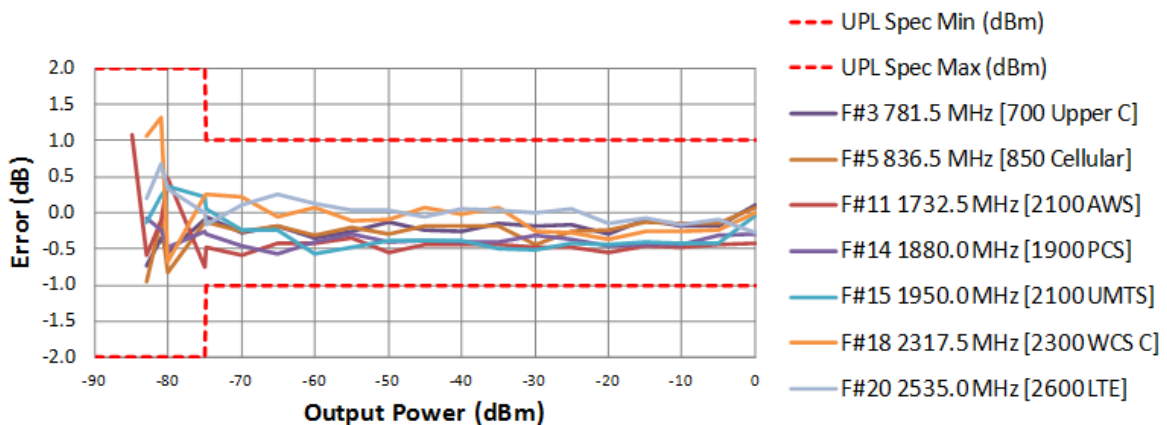


Figure 6 - DCC500-A01 Downlink (Tx) Insertion Loss @ 25°C

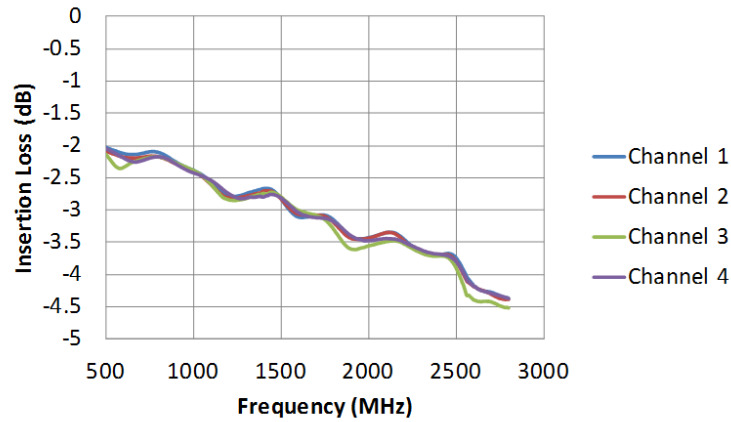


Figure 7 - DCC500-A01 Uplink (Rx) Insertion Loss @ 25°C

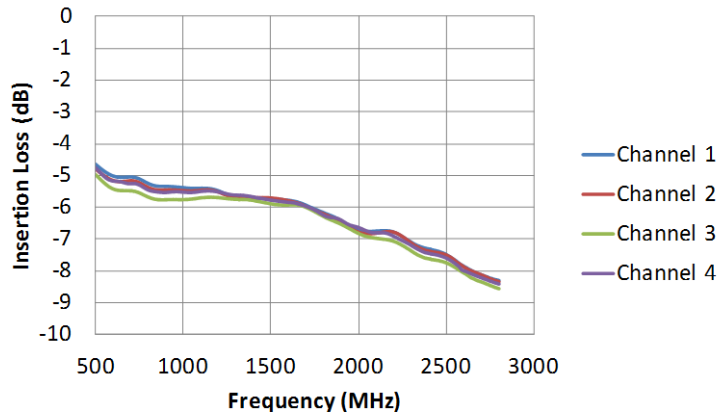
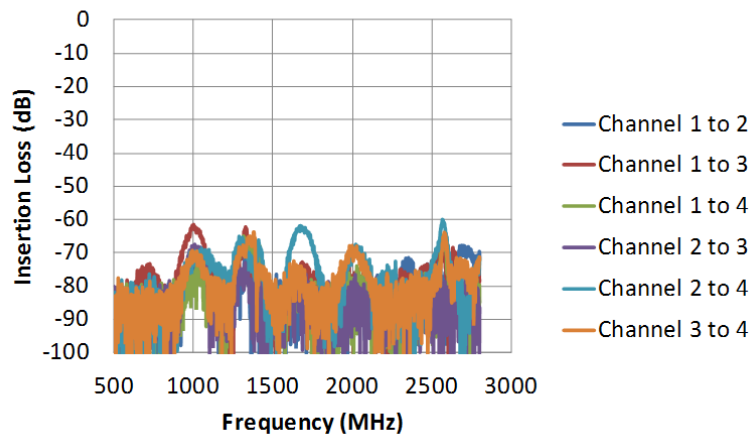
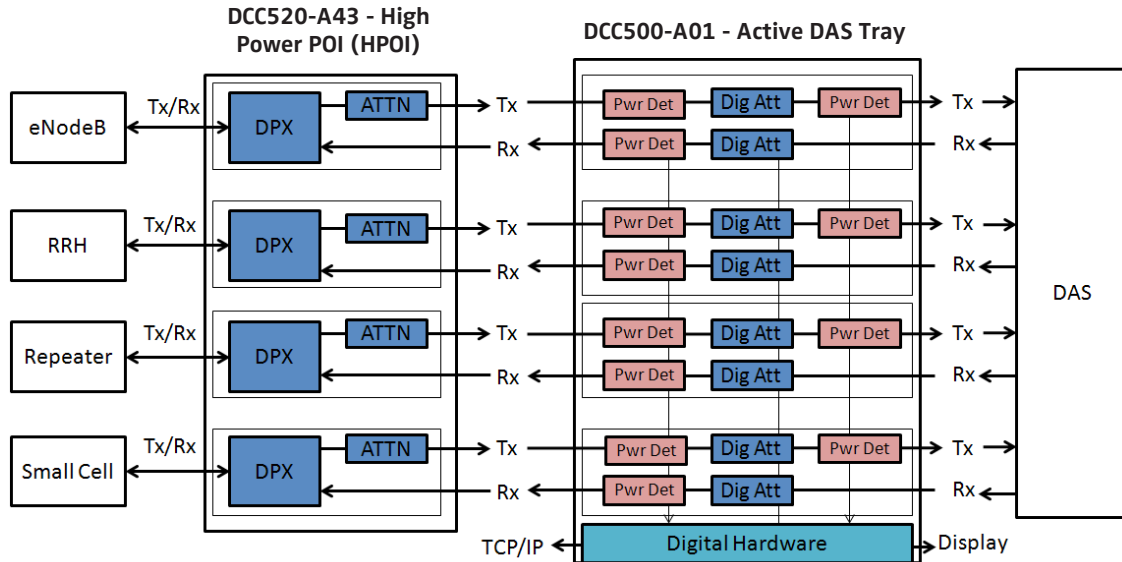


Figure 8 - DCC500-A01 Channel to Channel Isolation @ 25°C



**Figure 9 - DCC500-A01 Application Example Block Diagram**



**Table 4 - Available Models**

| Model #     | Description   |
|-------------|---|
| DCC500-A01  | 4 channel low power Active DAS tray with power monitoring and attenuation control (+18dBm maximum average input); 115/220 VAC |
| DCC500-B01  | 4 channel low power Active DAS tray with power monitoring and attenuation control (+18dBm maximum average input); -48/+24 VDC |
| DCC550-A01  | 4 channel power monitoring only DAS Tray  |
| DCC560-A01  | 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        |
|-------------|--------------------|
| 54554900A   | 0.5A AC Power Fuse |
| DCC-401     | Rack Mid-mount kit |
| DCC-15      | Rack Screw Kit     |