2.2 SDR Module

2.2.1 LEDs

SDR has LEDs on the front of the RF module as shown below in Figure 9.
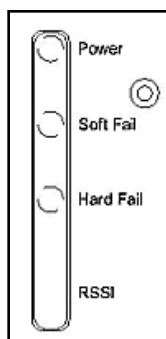

Figure 9   RF Module LED

Table 2-2   RF Module LED Specifications

SDR-Module		Specifications
Power	Solid Green	Module power is ON
	OFF	Module is powered OFF
Soft Fail	Solid Yellow	A Soft Fail alarm exists in the system
	OFF	No Soft Fail alarms are present in the system
Hard Fail	Solid Red	A Hard Fail alarm exists in the system
	OFF	No Hard Fail alarms are present in the system
RSSI	Input < -85dBm	Zero (0) bar On
	Input < -75dBm	One (1) bar On
	Input < -65dBm	Two (2) bars On
	Input < -55dBm	Three (3) bars On
	Input < -45dBm	Four (4) bars On
	Input >= -45dBm	Five (5) bars On

2.2.2 RF Ports

Donor and server antennas can be connected directly to the modules or the optional SDR-CHC (channel combiner) can be used to split or combine signals.

Figure 10   SDR RF ports

2.2.3 Power Switch

The AC Power ON/OFF switch is located at the back of each individual SDR module. Each module must be powered on separately. The switch should be powered on after the repeater has been installed properly.
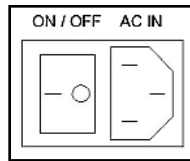

Figure 11   SDR Repeater Power Switch View

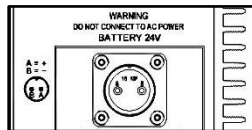### 2.2.4 Back Up Battery Port

Figure 12   Battery Backup Port

The SDR module can be connected to an ADRF-BBU (ADRF Battery Backup) to maintain uptime during a power failure. If an ADRF-BBU is utilized, connect the ADRF-BBU to the SDR via the external battery port as shown in Figure 12. Each SDR module will require its own ADRF-BBU or an ADRF splitter cable can be purchased to share a single battery backup.

(WARNING: The circuit switch on the ADRF-BBU must be set to OFF before connecting the ADRF-BBU to the SDR to prevent damage to the repeater or the ADRF-BBU and personal injury.)

Note: Please contact ADRF Technical Support for assistance if you are unfamiliar with the installation procedure of the ADRF Battery Backup.

2.2.5 Communication Port & Mode Select Switch

The communication port is used to interface with the SDR-NMS. Connect the included RJ-45 crossover cable from the SDR modules to the communication ports of the SDR-NMS.
The Master/Slave switch must be set to the slave position when the SDR modules are connected to an SDR-NMS. The Master/Save switch should be set to the Master when troubleshooting the repeater with ADRF Technical Support or if the SDR module is being used in conjunction with the SDR-Bracket or RMK-SDR (SDR Rack Mount Kit) in a stand-alone application (without SDR-NMS).
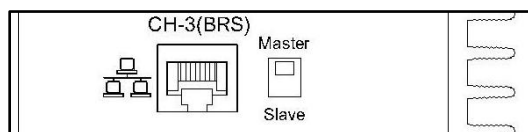

Figure 13   Master/Slave Switch

2.2.6 AC Select Switch

The AC SELECT switch allows the user to switch between 110~115V AC and 220~230V AC.
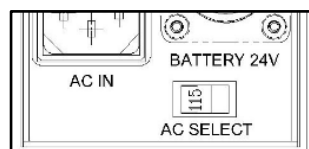

Figure 14   AC Select Switch

2.2.7 Communication Port & Mode Select Switch

The NMS-PWR-OUT provides DC power to the SDR-NMS. If multiple modules are being used in a system, the SDR-NMS only requires power from 1 module. This port connects to the NMS-PWN-IN on the SDR-NMS. The debug port is used for ADRF testing purposes only.
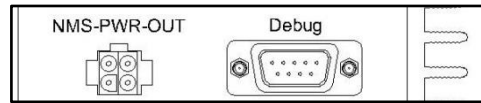

Figure 15   NMS Power Port & Debug Port

2.3 Channel Combiner (SDR-CHC)

2.3.1 RF Ports

An optional channel combiner can be mounted directly above the SDR. There are 2 versions of the SDR-CHC. The SDR-CHC-V supports 700 MHz, Cellular, PCS, and AWS. The SDR-CHC-S supports SMR, PCS, and BRS. The donor portion of the SDR-CHC can be used to split up a combined donor signal. The server portion of the SDR-CHC can be used to combine the server signals into the Server Sum port. Please contact sales@adrftech.com if you are interested in purchasing the SDR-CHC.
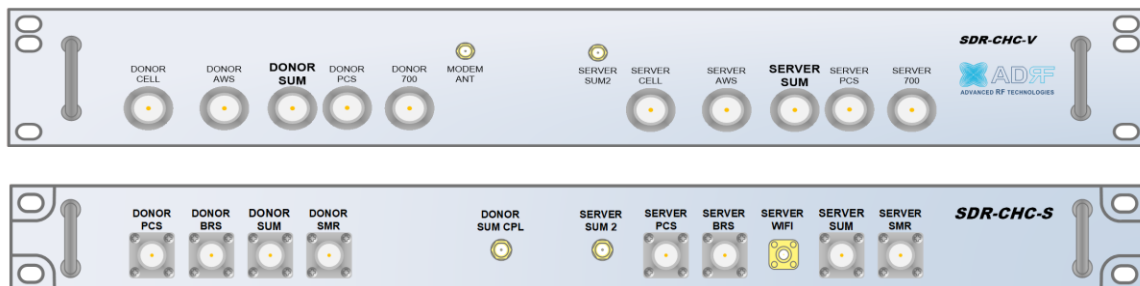

Figure 16   Channel Combiner RF ports

- Port Name Description
  - Donor 700: Connected to the SDR 700 MHz donor port
  - Donor SMR: Connects to the SDR SMR donor port
  - Donor Cell: Connects to the SDR Cell donor port
  - Donor PCS: Connects to the SDR PCS donor port
  - Donor AWS: Connects to the SDR AWS donor port
  - Donor BRS: Connects to the SDR BRS donor port
  - Donor Sum: Connects to the combined donor line
  - Donor Sum CPL: Expansion donor port with 18 dB ±3 coupling value [Connects to an external modem box]

  - Server 700: Connects to the SDR 700 MHz server port
  - Server SMR: Connects to the SDR SMR server port
  - Server Cell: Connects to the SDR Cell server port
  - Server PCS: Connects to the SDR PCS server port
  - Server AWS: Connects to the SDR AWS server port
  - Server BRS: Connects to the SDR BRS server port
  - Server WiFi: Input port for WiFi AP
  - Server Sum: Connects to the server antennas
  - Server Sum 2: Expansion server port with 20 dB coupling value