Application Note

4 Wire Audio NIB Connection to RFL 63 Series Modem

Description

This Application note describes how to use a RFL 63 series modem with the MiMOMax radio and NIB. Figure 1 shows a system diagram of the various components in the system.

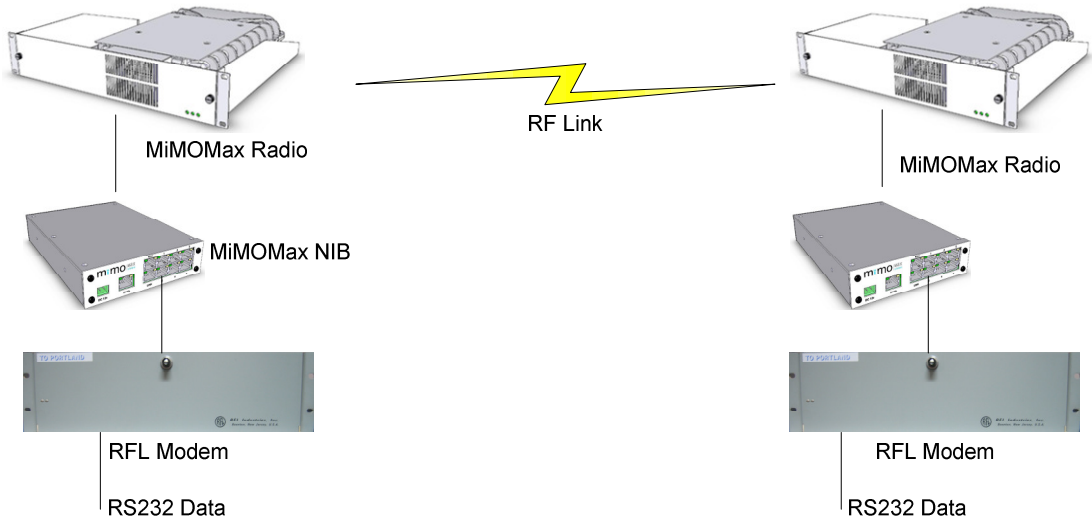

Figure 1: MiMOMax - RFL modem system diagram

Connections on MiMOMax Radio

The MiMOMax radio is connected to the MiMOMax NIB via a shielded HSSI cable (provided). The shield of the HSSI cable is connected to the shield of the RJ-45 connectors and provides a ground connection between the two units. This cable is connected to the left hand side RJ-45 connector on the DIF (Digital Interface) module, see Figure 2.

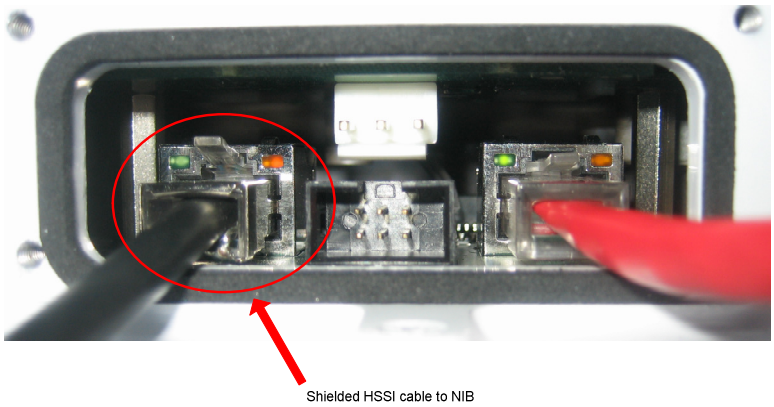

Figure 2: MiMOMax Radio DIF connections

Connections on MiMOMax NIB

The MiMOMax NIB is connected to the MiMOMax radio via a shielded HSSI cable mentioned in the previous section. The HSSI cable is plugged in to the port labelled "HSSI-A". The 4 wire audio connection to the RFL modem is via Cat-5 cable on port 5, see Figure 4. The NIB was configured in single channel fixed mode (Rotary switch position 1), see Figure 3.

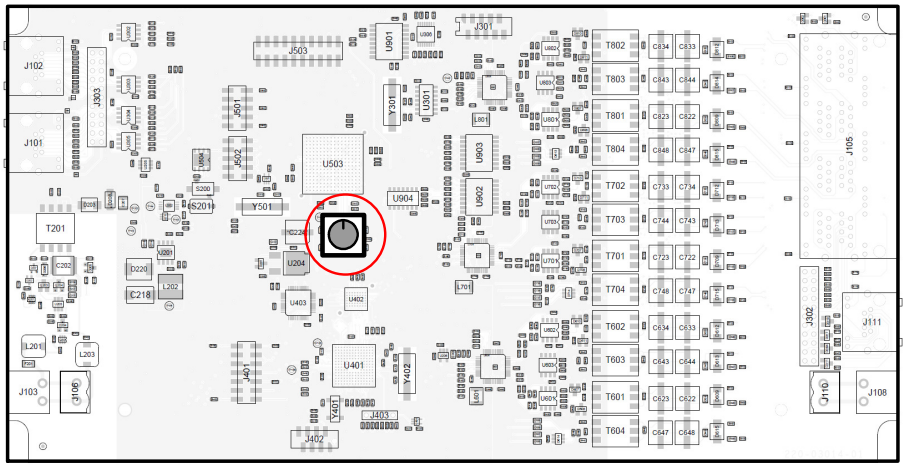

Figure 3: Position of rotary switch mode selector

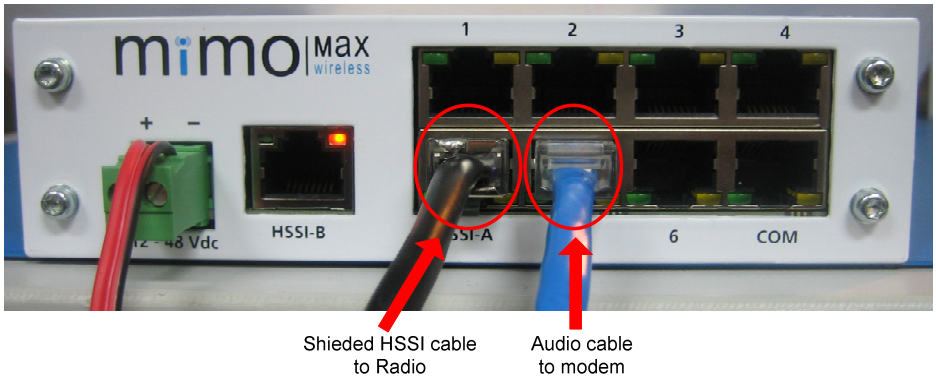

Figure 4: MiMOMax NIB Connections

Connections on RFL Modem

The 4 wire audio connections on the RFL modem are on port TB2, pins 1 and 2 are audio output (Tx) and pins 3 and 4 are audio input (Rx), see Figure 5. Standard CAT-5 cable was used between the NIB and RFL Modem. The Tx and Rx signals are each on a differential pair of the cable. A wiring diagram can be seen in Table 1.

The modem was measured to transmit audio at a level of -5.5dBm (Approx 410mVpp).

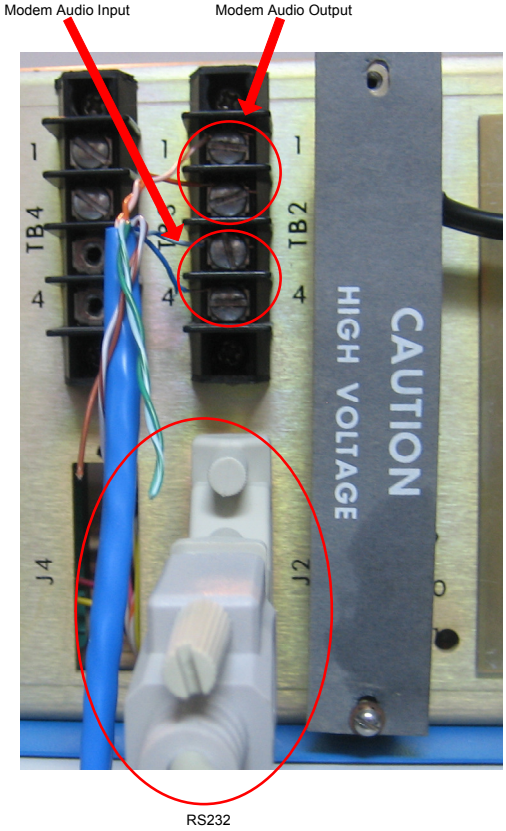

Figure 5: RFL Modem Connections

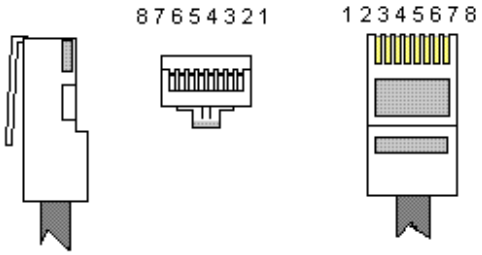

Figure 6: RJ-45 Plug

NIB – Port 5		**RFL – TB2**	
Pin	**Signal Name**		**Signal Name**
1	E-Lead (SIGNAL)		
2	E-Lead (GND)		
3	Audio Input A	1	Audio Output
4	Audio Output A	3	Audio Input
5	Audio Output B	4	Audio Input
6	Audio Input B	2	Audio Output
7	M-Lead (SIGNAL)		
8	M-Lead (GND)		

Table 1: NIB to Modem Wiring

CCMS Settings

The NIB requires a High Speed Serial Interconnect (HSSI) connection to the MiMOMax radio. HSSI is offered on the DIF2 module. For correct operation, DIF2 must be selected on the System Page of the CCMS, see Figure 7.

Secondly, the HSSI protocol must be selected on the Serial Interfaces CCMS page, see Figure 8.

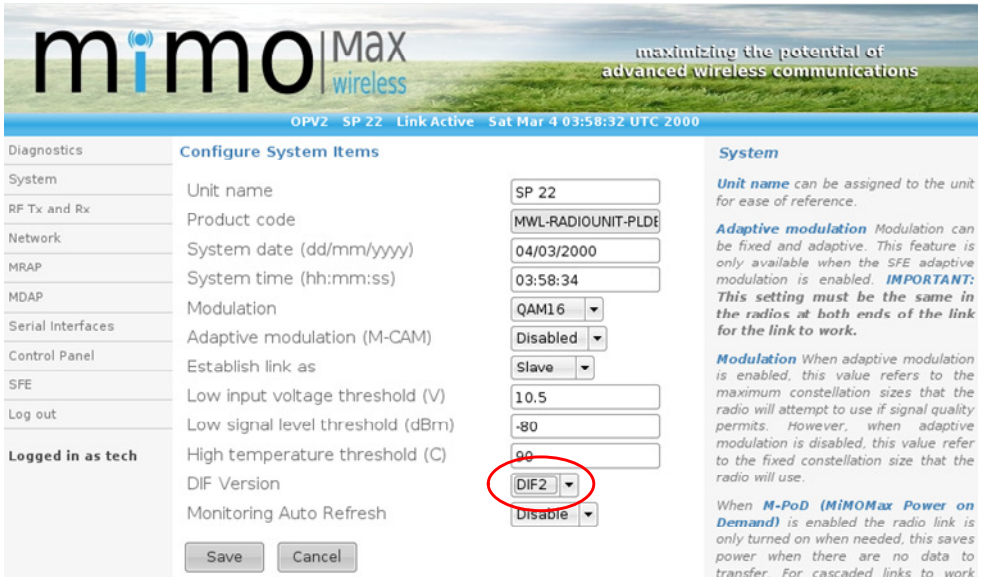

Figure 7: CCMS System page

Figure 8: Serial Interfaces Page

Power supplies and grounding

It is recommended that all units are grounded via appropriate ground connections.
The MiMOMax Radio and NIB can be powered from the same supply (10.5V – 32V DC) via appropriately rated cables.

