GENERAL DESCRIPTION OF MODELS DPLS0401-412 AND DPLL0401-412

TECHNICAL NOTE

March 14, 2007

1.0 PURPOSE

This document describes the electrical and mechanical interfaces of the DPL audio handset models DPLS0401-412 (2.0-meter cable) and DPLL0401-412 (4.0-meter cable). Both of these models are designed to work with the A3LA-D series shown in Figure 1. Through a DPL handset, any of the A3LA-D series can operate as an Iridium 9505A phone and, at the same time, can fully function as standard modems. The DPL handset has most of the features of a standard 9505/9505A Iridium phone. An electronic copy of the DPL Handset User's Guide is included on the CD-ROM shipped along with the DPL handset. It can also be downloaded from NAL Research's website www.nalresearch.com/AnonymousFTPSite.html.

WARNING: The DPL handset should ONLY be connected to the A3LA-D series. Connecting the DPL handset to the A3LA-I series may result in permanent damage to the DPL handset and/or the modem. Furthermore, the SCN4052A handset is designed specifically for the A3LA-I series and CANNOT be used on the A3LA-D series.

CAUTION: NAL Research's DPL handsets models DPLS0401-412 and DPLL0401-412 are designed to accept DC input voltage ranging from 3.0VDC to +12.5VDC. Standard Iridium DPL handsets models DPLS0401 and DPLL0401 accept DC input voltage only at +12.0VDC. These handsets MAY APPEAR to operate properly at 4.0VDC to 4.8VDC including successful network registration and placing a voice call. However, some hardware and software functions will not work including LCD and keyboard backlights. Dropout might even occur when volume is adjusted during a call.

Figure 1. A3LA-D Modem with DPL Handset.

2.0 SPECIFICATIONS

General Specifications

Dimensions:	6.34" L x 2.17" W x 1.02" D
	(16.1 cm x 5.5 cm x 2.6 cm)

Weight for DPLS0401-412: 0.44 pounds (200g)

Input Voltage Range: +3.0VDC to +12.5VDC

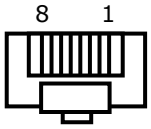
Maximum Current: 340mA at 12VDC

Physical Connector

Connector: RJ-45

3.0 INTERFACE CONNECTOR

The DPL handset has a single RJ-45 connector with a standard pin nomenclature shown in figure below. Tables 1 and 2 have the description of electrical connections between the DPL handset and the A3LA-D series.



Front view of an RJ-45
(looking into the connector)

PIN #	DESCRIPTION
1	MIC audio (output to A3LA-D series)
2	Signal Ground
3	ON/OFF
4	SPEAKER audio (input from A3LA-D series)
5	UART Data input (input from A3LA-D series)
6	UART Data output (output to A3LA-D series)
7	External ground input
8	External power input (3.0VDC to 12.5VDC)

Table 1. Pin assignments of the DPL handset RJ-45 connector.

DPL Handset RJ-45 Pins	A3LA-D Series DB25 Pins
1	15
2	23
3	1
4	5
5	18
6	20
7	3 and 17
8	4 and 16

Table 2. Connection between the DPL handset and A3LA-D series.

4.0 INSTALLATION INSTRUCTIONS

As shown in Table 2, pins 1 through 6 on the DPL handset are connected directly to the A3LA-D series DB25 connector. The same DC input to the A3LA-D series (pins 3 and 4) can be used to power up the DPL handset (pins 7 and 8). In this case, the DC power source must be capable of providing a minimum current of 2.6A at 4.4VDC. If the DPL handset has its own power input, the handset must be powered up within 1.0 second after the A3LA-D series modem is powered up.

As a separate product, NAL Research offers a DB25 data kit model HRC-24-8 which comprises of an RJ-45 for the DPL handset I/O, a DB25 for the A3LA-D series I/O, a DC input power jack for both the handset and the modem and a DB9 for RS-232 interface for a DTE (data terminal equipment). Model HRC-24-8 is shown in Figure 2.

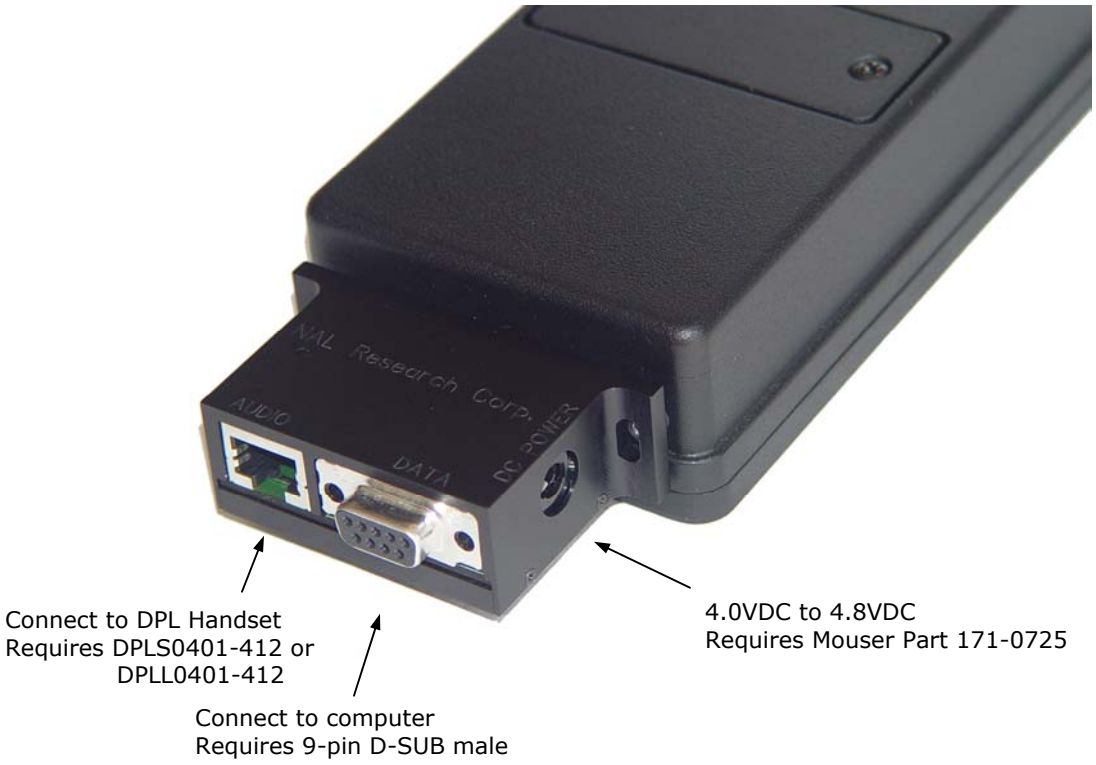


Figure 2. DB25 data kit model HRC-24-8.