# COMPROD INC.

Customer Instruction Manual

# 700/800/900 MHz
# BIDIRECTIONAL AMPLIFIER

# Monitoring Set-Up Procedure

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**Hardware Setup:**

The BDA is delivered with software on a CD allowing for the control of several functions.

Connect the computer to the BDA using the serial port with a Male to Male DB9 cable.
If you do not have a serial port use a USB to RS232 adapter to connect to the BDA.

**Fig 1.**

**Software Setup:**

If you are using a USB adapter you may need to install the USB driver for this adapter first.
Insert the CD ROM that comes with the BDA into a Personal Computer equipped with the Windows Operating System.

The following 3 files will be seen on the CD ROM:

1. The BDA RF 1W GUI application used to monitor and control the BDA
2. The Tuning_proc document, identifies how to run the BDA and monitor key paramaters (this Document).
3. The UserMan  document is a User Manual that describes the functions of the BDA

| Name | Date modified | Type | Size |
|---|---|---|---|
| Files Currently on the Disc (3) | | | |
| BDA RF 1W GUI v1.02 | 9/17/2015 9:08 AM | Application | 1,026 KB |
| BDA806870_Tuning_proc | 7/15/2016 9:58 AM | Adobe Acrobat D... | 509 KB |
| BDA806870_UserMan | 4/29/2016 10:44 A... | Adobe Acrobat D... | 1,141 KB |

Click on BDA RF 1W GUI v1.02 icon, and RUN the program to perform Setup and Monitor functions, and to use the Graphical User Interface to control the BDA.

To establish the connection with the computer, click on Connect (see Fig. 1 and 2).

**Fig 2.**

**HPA Enable:**

Usually when the unit is shipped, the HPA (High Power Amplifier) Enable function is set to OFF. This is for security purposes, since it allows the user to set up the system before turning it on.

When HPA Enable is turned off, the entire amplification chain is turned off. In this case the Shutdown alarm will flash indicating that the system has been shut down by the user.

**Fig 3.**

After verifying all the Uplink and Downlink connections, click on HPA Enable to turn the DL and UL Amplifiers on; as indicated in Fig. 3.

**AGC Enable:**

When AGC is enabled or ON the attenuation in the AGC Atten window is determined automatically by the system. If the AGC is off, the user can decide on the attenuation by changing the value with arrows as indicated in Fig. 6

The AGC is enabled ON by the manufacturer. It is recommended to keep it on all of the time. If the AGC is not turned on is is possible for the the output signal level to be too high resulting in a system shutdown.

**Fig 6.**

**AGC level:**

**Fig 4.**

AGC level: Indicates the maximum level allowed to be delivered at the output of the UL and DL ports. The user can set this to the desired level by clicking on the up and down arrows. The 2dB window in ñAGC window (dB)ò means that the output level could be between 28 dBm and 30 dBm. When the output level exceeds 30 dBm the AGC will automatically increase the attenuation to maintain the level at 30 dBm. In this case the AGC should be set to ON.

Note that the AGC range is 30 dB. If more attenuation is needed, a set of manual attenuators ranging from 0 to 31 dB in steps of 1 dB is available on the panel inside the box as indicated in Fig. 5 The attenuators are adjusted manually by inserting and turning a small flat blade screwdriver

**Fig 5.**

**Balance Enable:**

**Fig 7.**

The balance between the Down Link and the Up Link gain can be Enabled and tuned as indicated. Offset is the difference in dB between the Uplink gain and the Downlink gain.

**ASD Level (dBm):**

**Fig 8.**

When ASD (Automatic Shut Down) is Enabled, the system will shut down as soon as the output level reaches the value indicated. This value is set at the factory to 33 dBm.

ASD Time: The time range for automatic shutdown. If it is set to 10 minutes, the system will shut down for 10 minutes before attempting recovery.

ASD Count: Number of times for automatic recovery after Shutdown (If it is set to 5 times then after 5 attempted recoveries, the system will be shutdown permanently).

**Temperature overheating:**

**Fig 9.**

When the internal temperature of the system exceeds the temperature limit Over Temp level (in degrees C) the system will shut down (Over temp SD) automatically. The ñOver Temp Levelò is determined by the user as indicated by the red arrow in Fig 9.

In Fig. 9 we show the overtemp limit at 23 degrees Celsius for this example. Usually the unit is shipped with this limit set to 60 degrees Celsius. This was changed to demonstrate what an overtemp shut down looks like. As you can see the HPA Enable is OFF and the Over Temp indicator is red.

Alarm Definitions:
DL Over Input ï The signal from the antenna is too strong, or feedback from internal to external antenna.
DL/UL Over Power ï The output power is exceeding 33 dB, turn on AGC or adjust the manual attenuators.
DL/UL AGC Range ï The signal is exceeding the AGC range, adjust the manual attenuators.
DL/UL Shutdown ï The HPA is shut down see HPA OFF Case for the reason why.
PSU Fail ï Power Supply Unit Failure.
Over Temp ï Insdie temperature exceeds the Over TEMP Level setting
Door ï The access door of the BDA is not properly closed.

**Environment:**

Clicking on Environment, opens up a smaller window, shown dragged to the right, that reveals the DL and UL Power levels (Input and output). 0 is shown in this example, as no BDA is connected.

**Download:**

This is used to upgrade the firmware in the BDA.

**Alarm History:**

This is used to access the list of events that the BDA has recorded.

By Clicking on TEST 2 Icon (top left) a Series of items are displayed on the screen:

Clicking on CLEAR SHEET, erases the entries.

**Maintenance:**

Clicking on Maintenance will open a new Window that can be dragged to the right:

By clicking on TEST2 you can generate testing scripts that are shown in the window.