

# User Manual-R7

**Marconi BDA**

**7700/800 Class A Model 2**

Basic functions and end-user guide.



| REV #: | DESCRIPTON:                                             | BY:       | DATE:      |
|--------|---------------------------------------------------------|-----------|------------|
| 7      | Corrected page numbering in Introduction for Section 2. | M. Jacobs | 12/15/2025 |

# User Manual for the Marconi 700/800 Class A BDA Model 2

From KDP 935210 DO5 Section 4.0

Date: 12.10.25

**Item 9: User's Manual/Installation Instructions** - A draft copy of the instructions may be submitted if the actual documentation is not available. The actual document shall be furnished to ACB when it becomes available. **Modules require specific verbiage – please inquire further if this applies to your device.**

Introduction:

Description of the BDA Manual:

This manual is a short form of the BDA and its user operation. User Manual provides the information on the Display plus what is behind the door. For purposes of FCC rules the unit can only be opened by FCC licensed technicians. Refer to the system Block Diagram on page 6 . As shown in the BD the BDA contains all of the modules to operate the BDA. As designed the BDA is complete with all channels programmed via the GUIs provided with the BDA. Alarms are programmed with the current or volatage limits of the various blocks called out. Detailed information is in the Marconi maintenance manuals. Included in this manual are the related documents that enable the user to know the pre-programmed alarm limits for both the two sections included. All the alarm limits can be programmed but they are delivered as is by the factory. The user manual is provided in two sections

Section one lists the alarms of the overall BDA. The alarms are programmed in the BDA at the factroy and can be accessed via the full manual. All the alarms are displayed on the front panel display.

Section two is the adjustments of the BDA for PS operation. Caution only some of the BDA channel information can be accesed by the user via GUI provided with the BDA.

**Note:** The BDA is shipped so that once you connect to AC power the unit will turn on. The Marconi display will turn on and the status of the BDA ( Section 1) will be indicated.

When Power is turned off the BDA will automatically return ot the state as turn on. If normal operation, no alarms, the Marconi logo will be displayed. Since the BDA is deliverd operationaly but in the case this is not the case notify Marconi for service.

#### Section one ( BDA alarms):

Alarm Icons are shown in the table and pages attached. There are 6 alarms and they are displayed on the screen located in the front panel of the BDA. Each alarm Icon is discribed in Table 1 and in Section 2.

Alarms are generated from the Hardware and Software (SW) which has been generated by Marconi. An Alarm is defined by the limits established in the Software and is explained fully in the SW manual. Alarms are for each block with min and max levels that exceeded the BDA is in alarm state.

#### Section 2 ( Elements of the BDA):

In this section the BD of the BDA and the text describe the blocks in the BDA where are alarms are developed. All levels are in windows and these windows are described in the Marconi Maintenance Manual.

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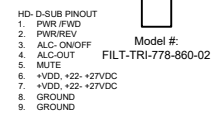
# SECTION 1

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## **Section 1** (Alarm and Control via the YC68P)

All operations of the BDA are enunciated via the touch screen, See Block Diagram attached.) As shipped from the factory all the operations are alarmed by using internal circuits that monitor the maximum and minimum levels in the various blocks of the BDA. If these levels are measured an alarm will be generated and an icon will appear on the touch screen. As shipped, once powered, the Marconi logo will appear on the touch screen. This will indicate that the BDA is operational and can be put into service. If there is a problem in the BDA an icon will appear and as stated, the correct personnel should be alerted to open the BDA cabinet and address the alarm. What follows are the alarm Icons and their meaning to the user.



**NOTE:** The BDA touch-screen has 3 color indicators on each of the statuses for easy monitoring

| Normal                                                                            | Needs Attention                                                                   | Fail                                                                                |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |

**Table 1: BDA Screen icon interfaces and uses**

| Reference | Symbol/Icon                                                                         | Icon Name                 | Description Use                                                              |
|-----------|-------------------------------------------------------------------------------------|---------------------------|------------------------------------------------------------------------------|
| 1         |                                                                                     | BDA Screen                | Touch screen interface with colored icons indicating statuses and activities |
| 2         |    | Main Power Status         | Indicates the AC power status                                                |
| 3         |    | DC Power Status           | Indicates the DC power status                                                |
| 4         |   | Backup Battery Status     | Indicates the battery status                                                 |
| 5         |  | Cabinet Tamper Status     | Indicates if the door is open (red) or closed (green)                        |
| 6         |  | System Temperature Status | Indicates if the temperature is normal                                       |
| 7         |  | Donor Antenna Status      | Indicates if there is a Donor Antenna failure                                |
| 8         |  | DAS System Status         | Indicates if there is a DAS Antenna/ System failure                          |
|           |                                                                                     |                           |                                                                              |

## BDA ALARM Monitoring



### Required Alarms:

BDAs should have the following alarms, which must be monitored:

- **AC Power:** Loss of normal power supply.
- **DC Power:** System battery charger failure.
- **Battery Charge:** Low-battery capacity at 70% reduction of operating capacity.
- **Critical System:** Failure of critical RF system components.
- **Cabinet Tamper:** Cabinet door opened.
- **Temperature:** Internal cabinet temperature exceeded TBD threshold.
- **Donor Antenna:** Malfunction of the donor antenna.
- **DAS System:** Failure of active RF device(s).

### ALARM

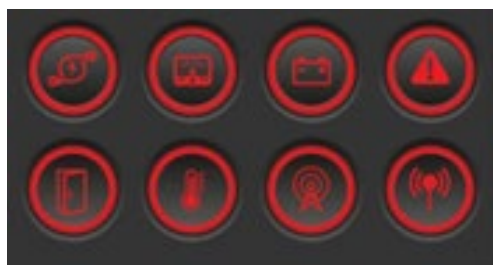
ALARMS RECIEVED BY  
DURACOMMPower SUPPLY

ALARMS RECIEVED BY  
RELCOMM BDA SYSTEM

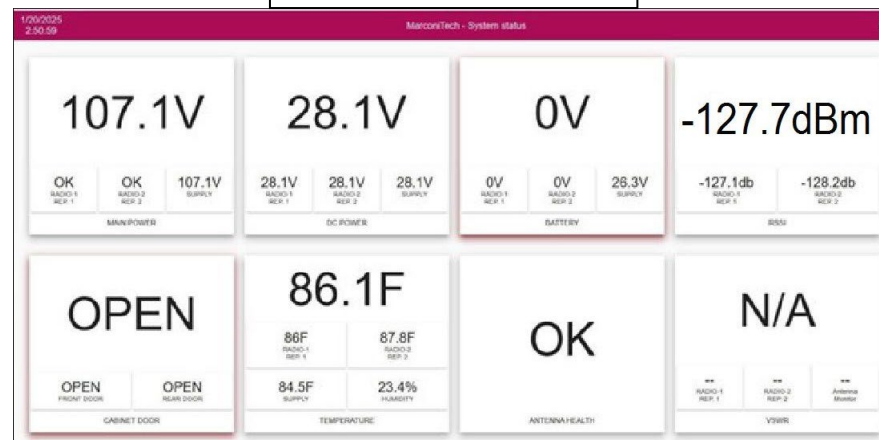
AC POWER  
DC POWER  
BATTERY CHARGE  
CABINET TAMPER  
TEMPERATURE

TEMPERATURE  
DONOR SYSTEM  
DAS SYSTEM  
CRITICAL RF SYSTEM

Sample ALARMS  
Active ICONS



### DATA PAGE



Clicking this icon should display a second page that shows critical RF diagnostic information: TBD

- Donor antenna dBm
- Service antenna dBm
- (Forward Power)
- (Reverse Power)
- System Temperature
- AC Power Voltage

Alarm Mute Button  
TBD location



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# SECTION 2

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## Section 2

### BDA 700/800 MHz Model 2:

For the following refer to the 3CH BDA Block Diagram. 3 Channel BDA is configured for two Down Links (DL) and one Up Link (UL) Pg. 11.

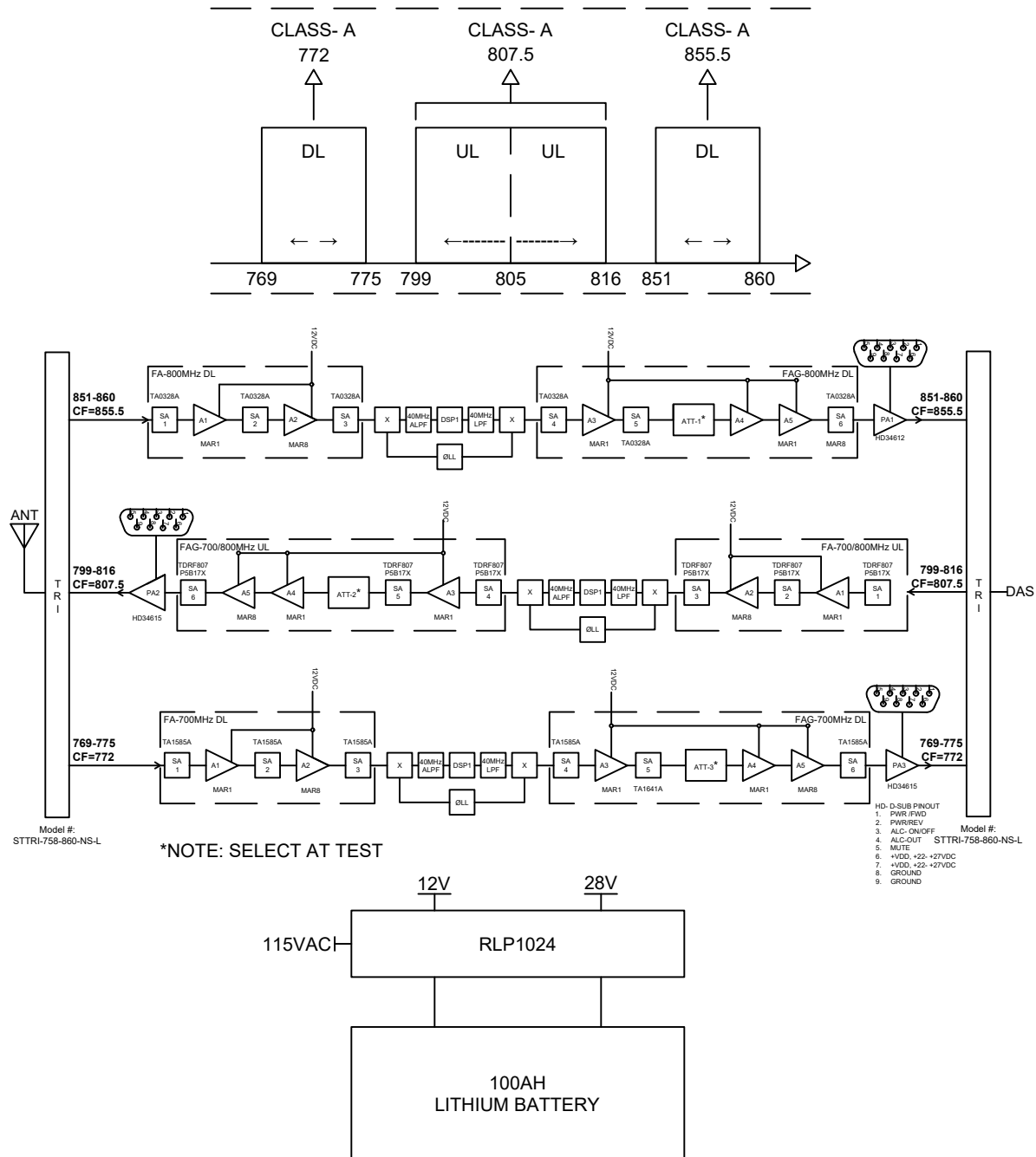
As stated in the Introduction the BDA is delivered fully programmed for the PS channels in all three bands. Each band is filtered and amplified in the blocks, labeled FA and FAG, to produce the overall Signal levels for PS operation, at the Antenna and DAS for 5X5 communications for first responders. Blocks of gain are shown in the block diagram, and they provide the gain and filtering for the DSPs threshold levels. When the RSSI reaches the threshold, the DSP turns on to process the signal for bandwidth, gain and output level. The output level is set in the DSP to a nominal -40 dBm. The following amplifiers produce the overall gain to produce the output level of <2 watts. BDA monitors the forward and reverse power of the amplifier that feeds the antenna/das. Either of these outputs are 50-ohm systems and can be antennas or other DAS or discrete 50-ohm systems, such as other networks that are alarmed separately.

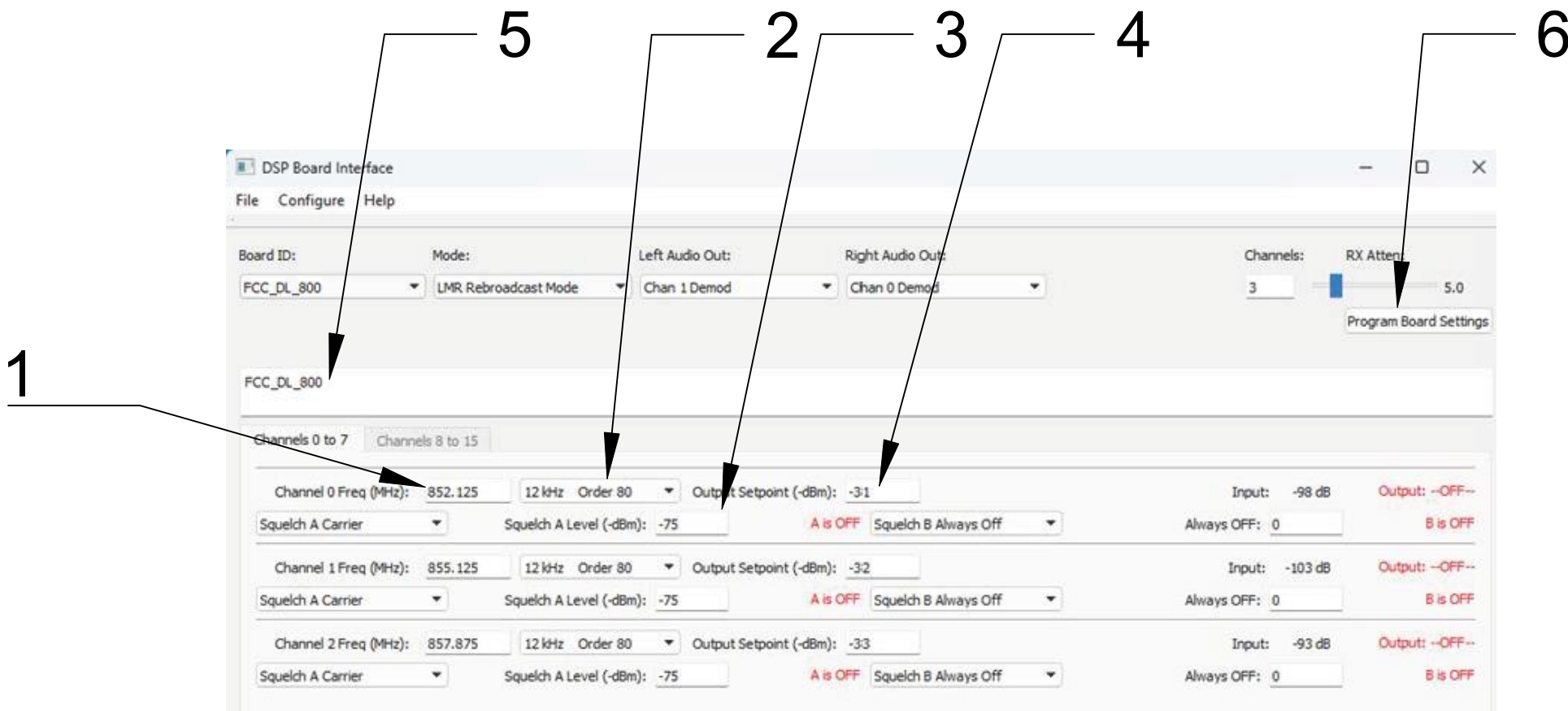
While the non-licensed user cannot access these adjustments, i.e. change channels, Band width, Power levels, we provide the GUI screens that define the channels, their frequency, BWs and shape factors (Order) are all set at the factory. A typical example of these screens is displayed on page 12. All the modules described are alarmed in the system. Any failure is enunciated on the screen located on the front panel. If any of the modules exceed the limits set in the alarm section an icon will provide the user with the status. Alarm screen provides for the Donor (Antenna input or output) or the DAS (input or output). All levels for DL and UL of these adjustments are available at the RS232 connectors at channel card I/O. These adjustments are available for UL (2 bands) and DL (2 bands)

Page 13 explains the settings for the DSP. These GUI windows are set in the factory and cannot be accessed as per FCC requirements. All channels are programmed on the DSP. These are the type accepted channels for the area of operation, and they cover all the UL and DL frequencies in operation for communications.

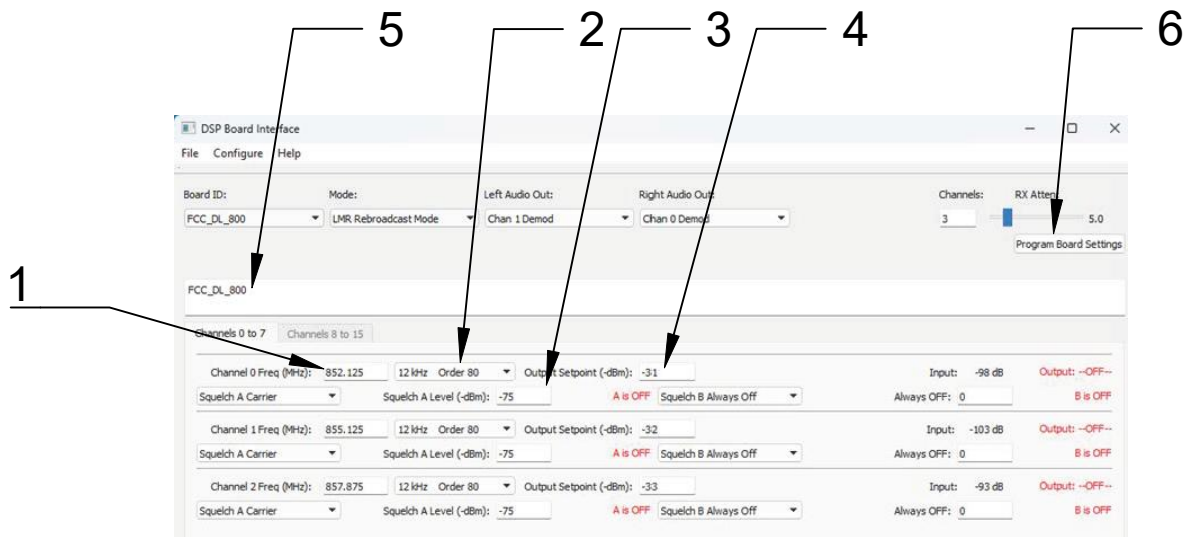
### Software:

Refer to the Alarm and Control BD that is included on page 15 of this user's manual. All GUI screen operation is shown in this BD to indicate the signal path for all the alarms. Note the Channel Card control is for the bands of operation as explained above. Note that Channel Cards are three separate processes broken down for the DLs and UL bands. Each band can be configured for 16 channels, and each are threshold for incoming RSSI to turn the channel on. DSP blocks are individually programmed for the Band width, Shape Factor (order). Channel frequency and output level.



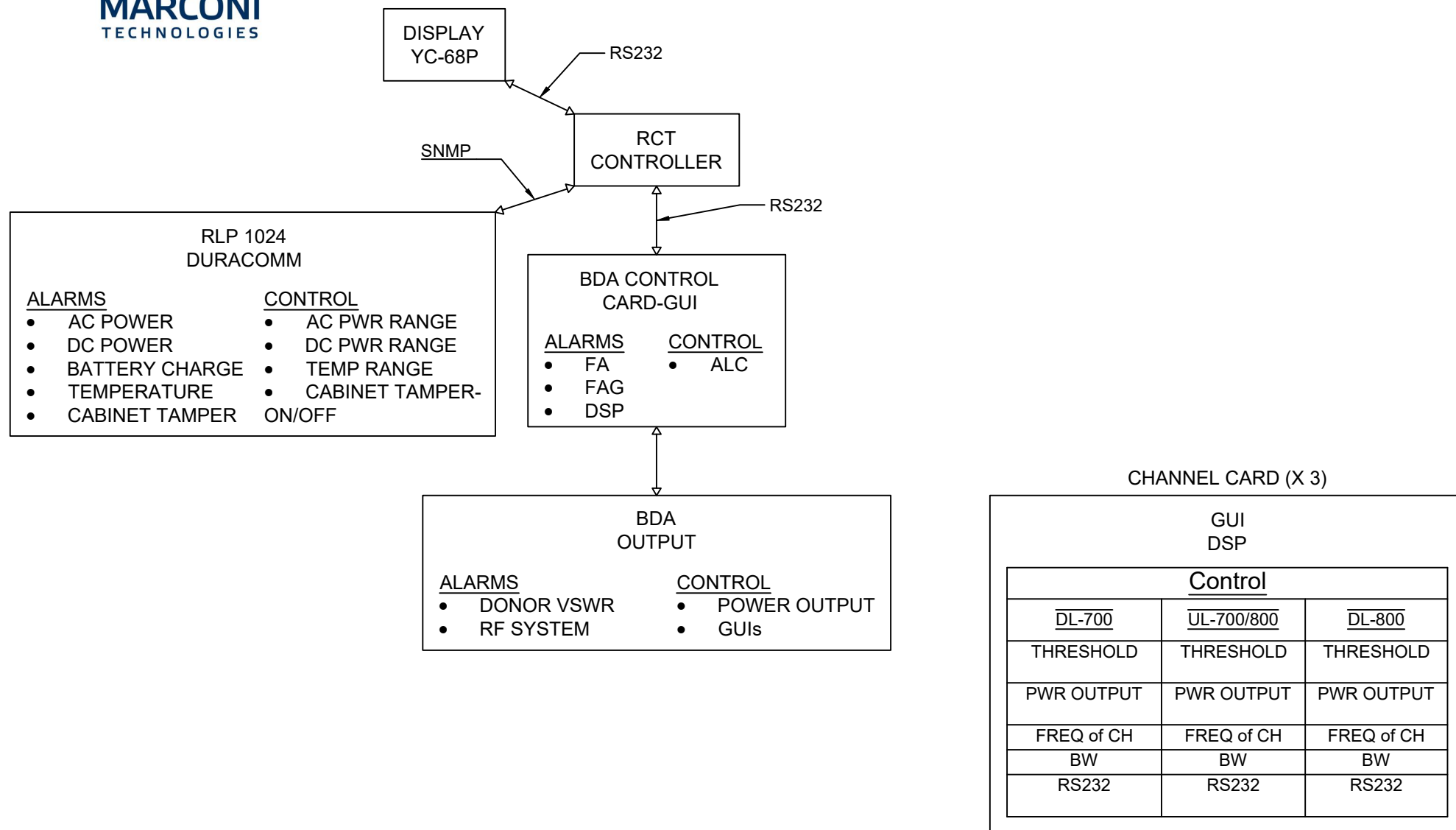


TYPICAL GUI DISPLAY



## DEFINITION OF DISPLAY

| ALL PS GUIs |                                  |                                                              |
|-------------|----------------------------------|--------------------------------------------------------------|
| REF.        | FIELD I.D.                       | FUNCTION                                                     |
| 1           | Channel for BDA                  | In 10MHz bandwidth Can be any of 16 Channels in the band     |
| 2           | Bandwidth of Channel             | Sets the service BDA operates with. (6.25kHz, 12kHz, 25kHz)  |
| 3           | BDA is active                    | -75dBm setting will provide -90dBm threshold                 |
| 4           | Output level of the DSP          | -30 to -45dBm adjusts the power output of the BDA            |
| 5           | Service Band of BDA              | Example for this DL-800-MHz (851-860MHz) (Channel Card Req.) |
| 6           | Adjusts Received Signal Strength | Normally set for 5dB (0-20dB)                                |



ALARM & CONTROL BLOCK DIAGRAM

For Service or if there is an issue that was not covered in this guide, please reach out to your installer / distributor at:

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
Contact First Name

\_\_\_\_\_  
Last Name

\_\_\_\_\_  
Telephone #

\_\_\_\_\_  
Fax #

\_\_\_\_\_  
Email

\_\_\_\_\_  
Web Address

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