

# **PS-ELITE7837**

**User Manual**

**Version 1.0**

**GSInstech Co., Ltd**

### **Revision History**

Version	Author	Descriptions	Date	Remarks
1.0	S.M Ko	Draft	14. Sep. 2018	

### **Change List**

Version	Change List	Remarks

## Abbreviations

Abbreviation	Term Definition	Remark
AGC	Automatic Gain Control	
ALC	Automatic Level Control	
BTS	Base Transceiver Station	
CW	Continuous Wave (un-modulated signal)	
DAS	Distributed Antenna System	
DFM	Digital Filter Module	
DL	Downlink The path covered from the BTS to the subscribers service area via the repeater	
FW	Firmware	
HPA	High Power Amplifier	
HW	Hardware	
IF	Intermediate Frequency	
LNA	Low Noise Amplifier	
LTE	Long Term Evolution	
MS	Mobile Station	
NC	Normal Close	
NO	Normal Open	
PSU	Power Supply Unit	
RF	Radio Frequency	
RFU	Radio Frequency Drive Unit	
SW	Software	
UL	Uplink The path covered from the subscribers service area to the BTS via the repeater	
VSWR	Voltage Standing Wave Ratio	

## 1. Regulations

This equipment complies with the following regulations.

### 1.1 FCC Regulations

#### 1) FCC Part 15.21

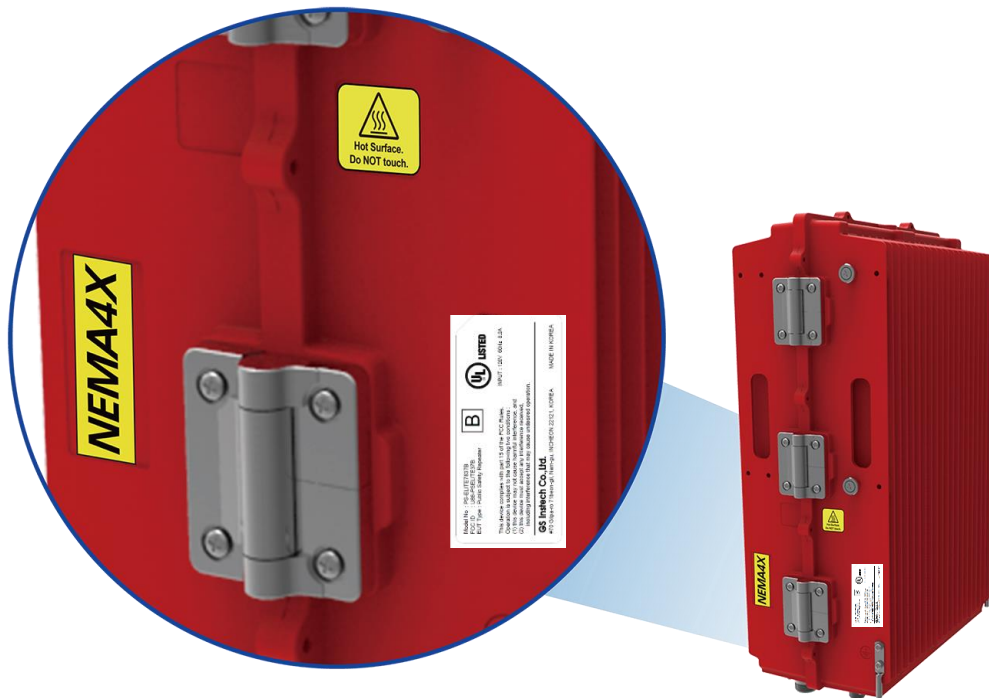
Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

#### 2) FCC Part 15.105

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

#### 3) FCC Part 15.19

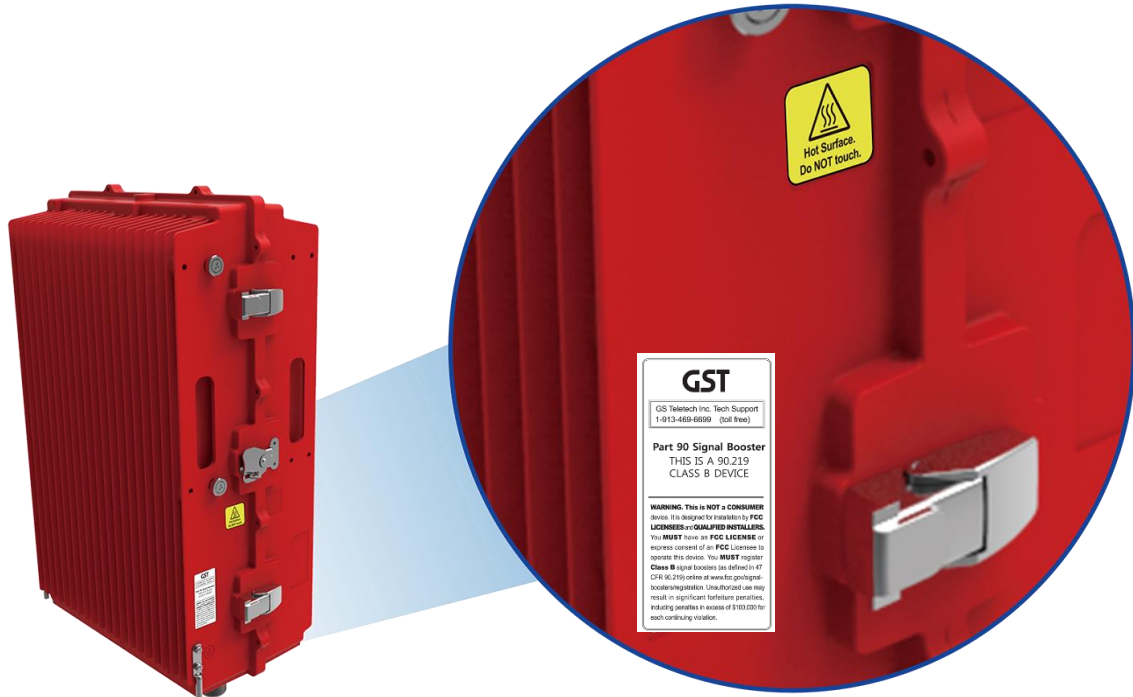
The FCC Certification label has attached right side of PS-ELITE7837. The FCC Certification label contained FCC 15.19 warning statement, Device type (A or B), FCC and UL ID



This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

4) FCC Part 90.219

Booster Warning Label is attached left side of PS-ELITE7837. This label has contains FCC 90.219, IC warning statements and contact information for a trouble shooting.



① FCC Part 90.219 Class A (B9A)

**GST**

GS Teletech Inc. Tech Support  
1-913-469-6699 (toll free)

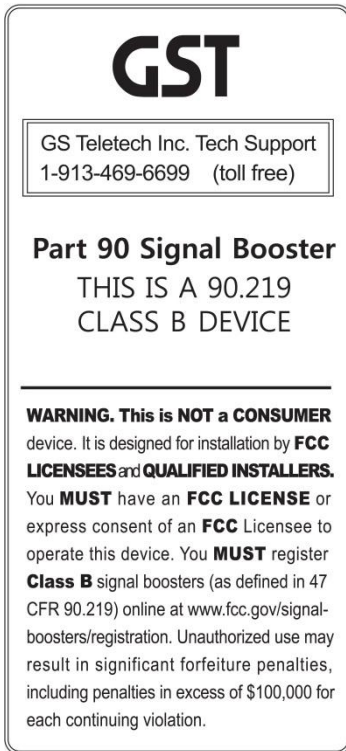
**Part 90 Signal Booster**  
THIS IS A 90.219  
CLASS A DEVICE

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**WARNING. This is NOT a CONSUMER** device. It is designed for installation by **FCC LICENSEES and QUALIFIED INSTALLERS.** You **MUST** have an **FCC LICENSE** or express consent of an FCC Licensee to operate this device. You **MUST** register **Class A** signal boosters (as defined in 47 CFR 90.219) online at [www.fcc.gov/signal-boosters/registration](http://www.fcc.gov/signal-boosters/registration). Unauthorized use may result in significant forfeiture penalties, including penalties in excess of \$100,000 for each continuing violation.

“WARNING. This is NOT a CONSUMER device. It is designed for installation by FCC LICENSEES and QUALIFIED INSTALLERS. You MUST have an FCC LICENSE or express consent of an FCC Licensee to operate this device. You MUST register Class A signal boosters (as defined in 47 CFR 90.219) online at [www.fcc.gov/signal-boosters/registration](http://www.fcc.gov/signal-boosters/registration). Unauthorized use may result in significant forfeiture penalties, including penalties in excess of \$100,000 for each continuing violation.”

② **FCC Part 90.219 Class B (B9B)**



“WARNING. This is NOT a CONSUMER device. It is designed for installation by FCC LICENSEES and QUALIFIED INSTALLERS. You MUST have an FCC LICENSE or express consent of an FCC Licensee to operate this device. You MUST register Class B signal boosters (as defined in 47 CFR 90.219) online at [www.fcc.gov/signal-boosters/registration](http://www.fcc.gov/signal-boosters/registration). Unauthorized use may result in significant forfeiture penalties, including penalties in excess of \$100,000 for each continuing violation.”

5) **FCC Part 90 Class B**

Prior to equipment use the service must be registered with the FCC. This can be done through the FCC’s website at <https://signalboosters.fcc.gov/signal-boosters>.

6) **Radiation Exposure Statement**

The product complies with the FCC Fixed RF exposure limit set forth for an uncontrolled environment and is safe for intended operation as described in this manual. The further RF exposure reduction can be achieved if the product can be kept as far as possible from the user’s body or set the device to lower output power if such a function is available.

7) **FCC Part 90.635**

Antennas must be installed in accordance with FCC 90.635. With 2.15dBi gain antennas the height of the antenna above average terrain (HAAT) must not exceed 310.7 m. For different gain antennas refer to the relevant rules.

## 2. Prohibitions

- Use of unauthorized antennas, cables, and coupling devices not conform to ERP/EIRP and indoor-only restrictions is prohibited.
- Preclude indications that Home/ personal use are prohibited.

### 2.1 Installation Warning statement



#### **WARNING**

Provides information or instructions that the reader should follow in order to avoid personal injury or fatality



#### **CAUTION**

Provides information or instructions that the reader should follow in order to avoid a service failure or damage to the system



#### **CHECK POINT**

Provides the operator with checkpoint for stable system operation



#### **NOTE**

Indicates additional information as a reference



#### **No use for the unauthorized device**

When installing the system. Must check the devices that use is authorized.  
This conditions apply antenna, cable, and coupling device if necessary



#### **Circuit Breaker Installation in the Box for Overcurrent Protection**

Must install the circuit breaker between the system and main AC source for separating.  
Make sure to install the Circuit breaker on the place to operate easily Circuit breaker be able to operate up to 20A



#### **Terminal, Conduit and Cable size**

To install the conduit is according to NAE regulation, and Terminal size is according to NEC regulation



#### **Caution**

Double Pole /Neutral fusing

### 3. General Information

This document is primarily written for those who are new to PS-LITE78A/B system and wish to tune up the equipment. The document is applicable to below products from GSINSTECH. Model number: PS-ELITE78A/B

#### 3.1 Repeater Information (FCC & ISED ID)

Certification	Type	ID	Remarks
FCC	B9A	U88-PSELITE37A	
	B9B	U88-PSELITE37B	

#### 3.2 Purpose

PS-ELITE7837 Bi-Directional Amplifier (BDA) is a repeater, which has been designed to improve signals in blanket/shadow areas inside of buildings to transmit Provider's variety frequencies. User may choose filtering configuration according to the specific site circumstances.

#### 3.3 Repeater Advantages

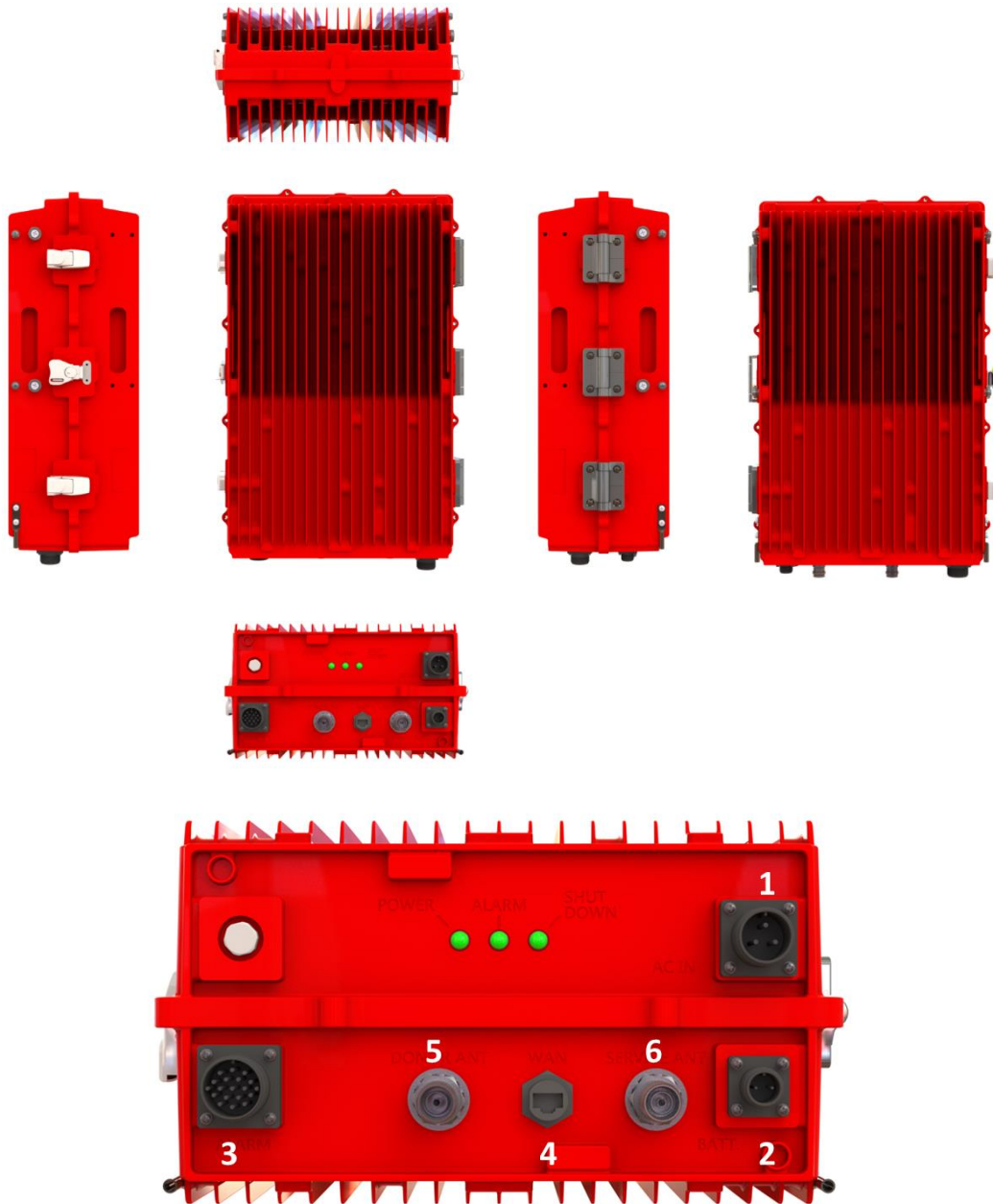
- It provides selectable RF power levels for any wireless technology / band.
- It has individual monitoring multiple technology.
- FPGA digital filtering provides optimized RF performance.
- It allows modification of technology via customer interface.
- It is easily installed.
- Frequency is easy to add / delete / change.
- It has scalable single and multi-service design.
- Customer data service is improved by FirstNet
- It meets all users' technological requirements.

#### 3.4 Highlights

- Dual band support 700MHz and 800MHz band by WEB UI
- Simultaneous Filter Supporting 1 Wide Band and 32 Non-Contiguous Narrow Bands
- 2W output power for each band
- Fan-less
- Significant Filter Roll-off performance
- Supports Form 3 Dry Contact
- External Alarm Function supporting Dry Contact
- Digital/programmable utilizing FPGA
- Auto shutdown with alarm upon oscillation detection
- Web based GUI for intelligent configuration, SNMP supported
- NFPA compliant dry contact alarms, NEMA 4x enclosure



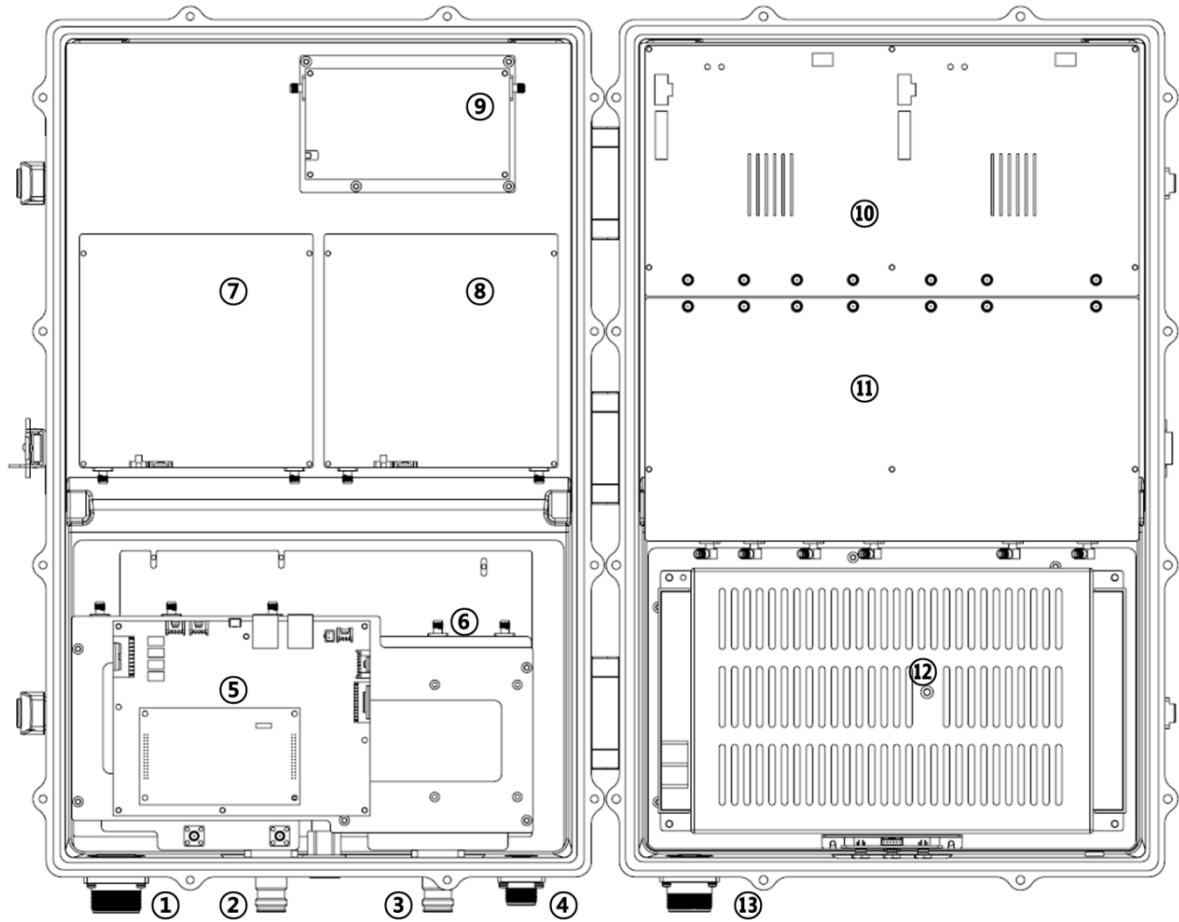
### 3.5 Exterior



No	NAMES	DESCRIPTION	SPECIFICATION
1	AC IN	AC Power Input Port	MS-3102A-10SL-3P
2	Battery	Link to battery Backup Unit	Battery
3	External Alarm	Link to External Alarm Panel	
4	Ethernet	Local Maintenance & Modem Activation	Local: RJ-45
5	Donor ANT	Donor Antenna Connection	4.3-10 DIN Female
6	Service ANT	Service Antenna Connection	4.3-10 DIN Female

### 3.6 Interior

PS-ELITE7837 consists of the following modules:



No.	Item	Remarks	No.	Item	Remarks
1	Ext. Alarm Connector		8	DL 700 HPA	
2	Donor Antenna Port		9	UL HPA	
3	Service Antenna Port		10	Digital Filter Module	
4	Battery Backup Input	48V DC	11	RF Unit	
5	I/O Board		12	PSU	
6	Duplex Cavity Filter		13	AC Input Connector	110V AC Only
7	DL 800 HPA				

- 1) Donor / Service Antenna  
All antenna ports use a 4.3-10 Din connector. If user wants to use an N-type cable, user must use a separate adapter. (Not included)
- 2) Digital Filter Module & RF Unit  
The integration module consists of RFU and DFM.

The RFU is assembled at the bottom of the integrated module, and performs amplification, filtering, and gain control on the signal that passes through the duplexer.  
The DFM is assembled on top of the integration module. DFM performs band select, band width adjustment and power detection according to user setting.

- 3) **Cavity Duplexer**  
Separation of input and output signals and isolation between paths
- 4) **HPA Module**  
DL 700 HPA and DL 800 HPA are made up of different modules.  
It amplifies the filtered and band selected signals via RFU and DFM, and maintains the output of the system.  
UL HPA provides 700M and 800M bands as one integrated module. It amplifies the filtered and band selected signals via RFU and DFM, and maintains the output of the system.
- 5) **PSU**  
The PSU supply power to the system.  
The PSU receives 110V AC power and supplies + 28V DC and + 6V DC to the system. In the event of an AC power failure, the system can be powered by receiving a -48V DC power through the battery. The battery voltage input to the PSU should be -48V. If + 48V is used, the electrodes must be reversed when connecting the battery. If the required battery voltage is not used or the electrode is not suitable, the PSU may be damaged or not functioning normally.  
The Company shall not be held liable for the problems caused by this.
- 6) **I/O Board (Control Board)**  
The control board performs functions such as system control, communication. And alarm information share through the external alarm connector.  
System control and communication functions are available via the Web UI and SNMP via the system RJ - 45 Port, Alarm Information Sharing is Ext. It can be connected to the External Alarm Panel via the Alarm Connector for use.
- 7) **Battery Backup Port**  
The system can use the battery backup system. In this case, the battery output should be +48V DC  
User can't be held responsible for any problems that arise from not following these recommendations
- 8) **Ext. Alarm Connector**  
Ext. Alarm Connector is a port used to share alarm information generated by the system with external alarm panel. Alarm information is shared through dry contact. Mapping between Alarm and Connect can be confirmed by the following table.
- 9) **WAN Network Port**  
The system supports Web UI or SNMP function through Ethernet to improve accessibility of external network and user. To this end, the user can connect a cable to the RJ-45 connector.  
Connectors and cables used should be waterproof.
- 10) **Local Network**  
The system supports Web UI or SNMP function through Ethernet to improve accessibility of internal network and user. To this end, the user can connect a cable to the RJ-45 connector.
- 11) **AC Input Connector**  
The input voltage of system is only 110V AC and the voltage input such as 220V AC is not approved.  
No liability or compensation shall be required by the Company for problems caused by not permitted input AC voltage.

## 4. Specifications

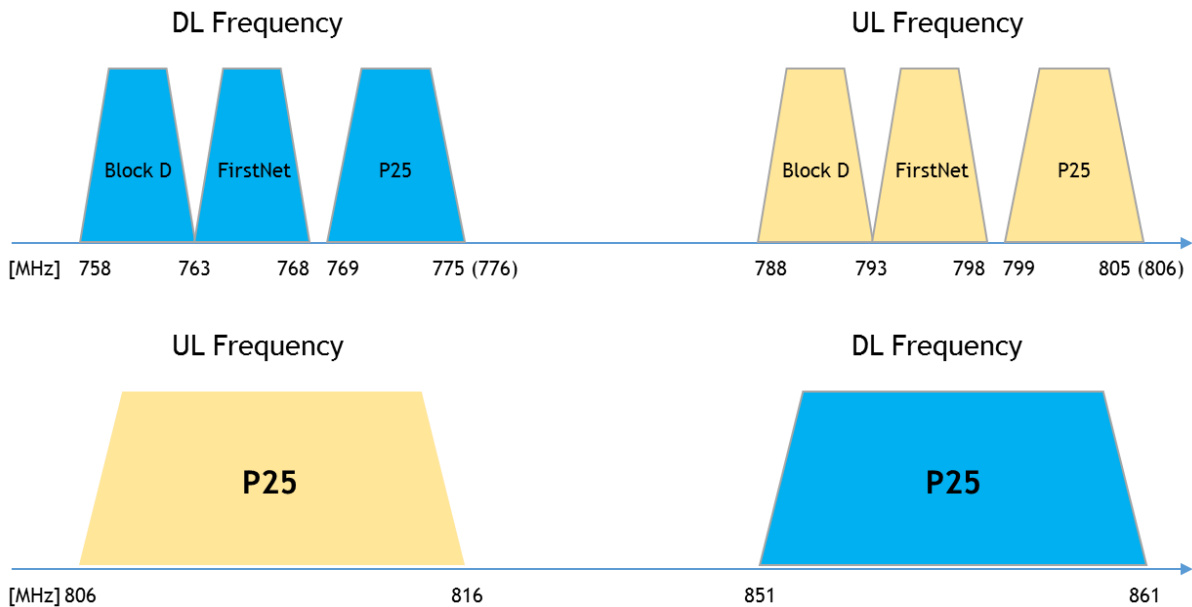
### 4.1 US Frequency Allocation

#### 4.1.1 US frequency

Item		Specification	Remark
Down Link Frequency	700 (PSBB)	758MHz ~ 768MHz	LTE
	700 (PSNB)	769MHz ~ 775MHz	P25
	800 (PSNB)	851MHz ~ 861MHz	P25
Up Link Frequency	700 (PSBB)	788MHz ~ 798MHz	LTE
	700 (PSNB)	799MHz ~ 806MHz	P25
	800 (PSNB)	806MHz ~ 816MHz	P25

#### 4.1.2 US Service Plan

- 1) The LTE network integrates Upper D band and FirstNet to have max. 10MHz Service BW.
- 2) The P25 Network has a Guard Band of 768-769MHz and 775-776MHz.



## 4.2 Common Specifications

Item		Specification	Remark
Select Bandwidth	PSBB – LTE	5 / 10MHz	
	PSNB – B9A	6.25 / 12.5 / 25 / 50 / 75KHz	
	PSWB – B9B	100 / 125 / 150 / 175 / 200 / 225 / 250KHz	
DL Output Power	LTE (PSBB)	+34dBm / 2.5W (@total)	+37dBm / Total
	700 (PSNB)	+34dBm / 2.5W (@total)	
	800 (PSNB)	+37dBm / 2W (@total)	
UL Output Power	LTE (PSBB)	+30dBm / 1W (@total)	+33dBm / Total
	700 (PSNB)	+30dBm / 1W (@total)	
	800 (PSNB)	+33dBm / 2W (@total)	
Max RF Input Power without		-17dBm	@ Over Drive
Max RF Input Power without		+10dBm	@ No Damage
Gain	DL Range	54dB ~ 99dB	ALC: 45dB
	UL Range	50dB ~ 95dB	
	Adjust Step	±1.0dB	
	Adjust Accuracy	±1.0dB	
Propagation Delay	LTE	< 6us	
	PSNB	< 230us	
Adjacent Channel Power	LTE	> 45dBc @ ± 5M	
		> 50dBc @ ± 10M	
	PSNB	> 50dBc @ Ch Offset 25kHz	
		> 50dBc @ Ch Offset 50kHz	
Flatness		< 3dB	
Return Loss / VSWR		< -14dB / < 1.5 : 1	
Noise Figure		< 5dB @ Max gain	Uplink Only
EVM		≤ 8% (E-TM3.1 / DL : 64QAM, UL 16 : QAM)	LTE Only
Roll Offs	LTE	>55dBc @ ±1MHz	outside pass-band
	PSNB	>55dBc @ ±6.25KHz or >55dBc @ ± ½ Bandwidth	
Characteristic Impedance		50Ω	

### 4.3 Mechanical Spec.

Item		Specification	Remark
RF Connector		Mini DIN (4.3-10) Type Female	
AC Power Connector		MS3102A 20SL-3P	
AC Power Cord		MS3106A-20SL-3S	
Battery Backup Connector		MS3102A-14S-9P	
External Alarm Connector		MS3102A-22-14P	
External Interface		RJ-45 / USB A Type	Waterproof
Alarm Interface		Dry Contact	20Pin
AC Supply		110VAC ~ 120VAC, 60Hz 2.0A	±10%
DC Supply		48V	
Out Dimension		19" x 13.2" x 7.8"	480mm x 335mm x 200mm
Net Weight		Max. 68 lb	30kg
Material	Module	Aluminum alloy	
	Cabinet	Aluminum alloy for casting	
Operation Temperature		-40°F to +122°F (-40°C to +50°C)	Convection cooling
Storage Temperature		-40°F to +185°F (-40°C to +85°C)	
Humidity		5% ~ 95%	Non-Condensing
Environmental Spec.		NEMA4x	IP668
MTBF		100,000	hour

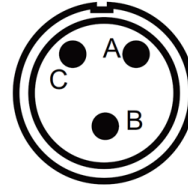
## 5. Port and Connectors

### 5.1 RF Connector

PS-ELITE7837 adopts a Mini-DIN 4.3/10 connector. If the user wants to use an N type cable or connector, they need an adapter.

### 5.2 AC Power Connector



PS-ELITE 7837 use only 110V voltage. If the user uses other un-recommend input voltages, PS-ELITE7837 may be damaged. The AC Power Connector of the PS-ELITE 7837 uses **CAR3102A-20-3P** and the user shall use a cable equipped with a cable **CAR3106A-20-3S** connector to terminate the power.



A : AC.L  
B : AC.N  
C : F.G

### 5.3 DC Battery Power Connector

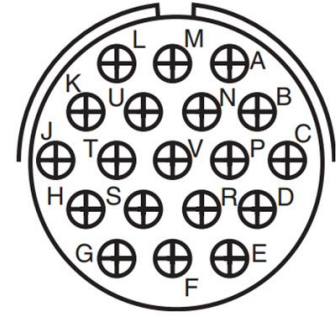
PS-ELITE 7837 use a 48V battery only. If the user uses other nonstandard input voltages, PS-EILITE7837 may be broken or damaged. If the user want to use a +48V battery, it is acceptable to cross the input electrode.

Pin No.	Pin Name	Cable Color	Remarks
1	+	Red(or White)	
2	-	Black	










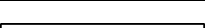
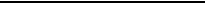
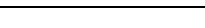
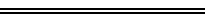






### 5.4 External Alarm Port (Dry-Contact)

PS-ELITE7837 supports the External Alarm Box. The external alarm box is connected via the External Alarm Connector. The External Alarm Box of PS-ELITE 7837 is configured using the Dry Contact.

The connection between the External Alarm Port and the External Alarm Box is made using the UL2464 # 24 10ft cable supplied with the system.



- 1) PS-ELITE support external Alarm Box

Pin No.	Alarm No.	Alarm Name	Pin Name	Cable Color	Remarks
A	Alarm1	AC Power	N.C 1	Black	
B			COM 1	Brown	
C			N.O 1	Red	
D	Alarm2	BDA	N.C 2	Orange	
E			COM 2	Yellow	
F			N.O 2	Green	
G	Alarm3	Reserved	N.C 3	Blue	
H			COM 3	Violet	
I			N.O 3	Gray	
J	Alarm4	Reserved	N.C 4	White	
K			COM 4	Black & Line	
L			N.O 4	Brown & Line	
M	Alarm5	Reserved	N.C 5	Red & Line	
N			COM 5	Orange & Line	
P			N.O 5	Yellow & Line	
R	Alarm6	Reserved	N.C 6	Green & Line	
S			COM 6	Blue & Line	
T			N.O 6	Violet & Line	
U	Reserved			Gray & Line	

N.C : Normal Close / N.O : Normal Open



### 5.5 Ethernet Port

PS-ELITE 7837 can be connected to the parent network via Ethernet, and the user can use the WEB UI to control and monitor the relays in remote or local locations. PS-ELITE 7837 use a waterproof Ethernet port to prevent the external environment from being affected. (NEMA 4x Compliance)

For complete waterproofing, the user shall use a water-proof RJ-45 cable.

## 6. LED and Alarm Information

### 6.1 LED

LED	Status	Remarks
Green	Good Condition, The system operates normally.	
Red	Critical alarm, Unable to operate properly	

### 6.2 LED indicate for alarm

Name	RUN	ALARM	SHUTDOWN
Power On	Green		
Boot Complete	Green	Green	Green
Normal Condition	Green	Green	Green
Over Power	Green	Green	Red
AC Fail	Green	Green	Red
DC Fail	Green	Green	Red
RESET	Green	Red	Red
Shut Down	Red	Red	Red

## 7. Installation

### 7.1 Installation

#### 7.1.1 Antenna

- 1) The antenna used in the PS-ELITE7837 must be certified or an antenna with equivalent specifications.
- 2) **Antenna gain is restricted to "Cable loss+2.15dB"**
- 3) The company shall not bear any liability for any problems arising from the use of an uncertified antenna.

#### 7.1.2 Isolation

If the system wants to operate in the max gain state, the system requires sufficient isolation between the donor and service antennas.

The system recommends isolation be higher than 15dB above the gain of the system.

If isolation is not sufficiently ensured, the AOC function operates to reduce the gain to a level suitable for the ensured isolation.

#### 7.1.3 Equipment Needed for Repeater Setup

Parameter	Item	Quantity	Remark
Major Component	PS-ELITE7837 Repeater	1 EA	Provided by GST
Additional Components	Wall Mounting Bracket	1 EA	Provided by GSI
	AC Power Cable 1.8m	1 EA	
	DC Power Cable 2m	1 EA	
	External Alarm Cable 2 m	1 EA	
Antenna	Donor ANT	1 EA	Not Included
	Service ANT	1 EA	
RF Cable	Antenna connection Cable	TBD	Not Included
Testing and Measuring Equipment	Spectrum Analyzer	1 EA	Not Included

#### 7.1.4 Check points before turning on the Repeater

- 1) System Power Check  
AC electrical power to the repeater should be 110V, input electricity only after power verification.
- 2) Input RF Signal Range  
Optimal input RSSI into the repeater is -62dBm ~ -17dBm for 700MHz/800MHz. User should verify input condition of Donor ANT. If the input RSSI exceeds -17dBm, impose the using external attenuators should be used.
- 3) Isolation check between DONOR/SERVEICE ANT  
The system must need that 114dB (Gain+15dB) isolation is secured to use 99 dB of the maximum profit of the system. User should check its condition before installation.

#### 7.1.5 Open for Service

- 1) Check points before open:
  - ① Verification of system installation status :
    - Electricity, In/Out antennas, cable connection, and equipment mount status.
  - ② Verification of system accessories :
    - User should check all necessary accessories.

- ③ Check receipt signal level :
  - Installer should check whether environmental conditions are in accordance with system specification to ensure that system operation will be optimized.
- 2) Check points after open:
  - ① Check external LED
    - RUN: Green light ON (Off: All LED off)
    - ALARM: Green light in normal status, Red light in alarming
    - SHUT DOWN: Green light in normal status, Red light in Shutdown status

## 7.2 Ground

The PS-ELITE7837 is designed to operate at 110VAC @ 1.5A maximum current and must always be operated with the ground wire properly connected.

## 8. Web UI

### 8.1 Setting up the Repeater

#### 8.1.1 Quick UI/Configuration

Use the following steps to commission the Repeater after all the cabling and antennas are fixed in place and the Repeater is supplied with proper electrical power. The repeater will need a good quality stable Downlink RSSI input level in the range of -85dBm to -62dBm.

- 1) Connect your laptop to the repeater with a Crossover Ethernet cable.
- 2) Verify that your laptop has all wireless connections off and is Obtaining an IP address automatically, or is using a proper fixed IP address such as: Use the following IP address: 192.168.2.1 with a Subnet Mask of 255.255.255.0
- 3) Open Internet Explorer and go to: 172.16.6.81
- 4) User name: admin
- 5) Password: admin

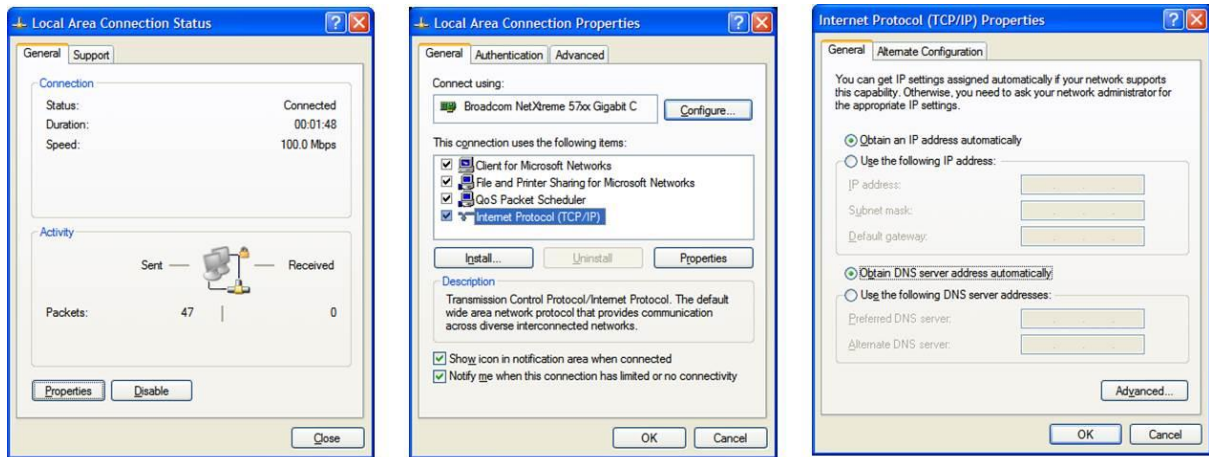
#### 8.1.2 Quick Setup

- 1) Go to the RF Configuration page.
- 2) Before the Amplifier (HPA) can be turned on, set the Uplink and Downlink attenuation (ATT) to the maximum value and click Apply.
- 3) Select the correct Band Block and set the ALC Downlink and Uplink Limits to the desired level and click Apply. (To adjust the Output Power, change the ALC Downlink and Uplink Limits to the desired levels).
- 4) To check the Repeater's status, click on the Status page.
- 5) To change the Repeater's gain/attenuation, adjust the Uplink and Downlink attenuation in equal amounts not more than 5dB at a time and click Apply.

## 8.2 User Interface Configuration

### 8.2.1 Log in the Web-UI

#### 1) Configuring the Laptop to connect



1. Go to Local Area Connection.

2. Click on 'Properties'

3. Highlight 'Internet Protocol (TCP/IP)'

4. Click on 'Properties'.

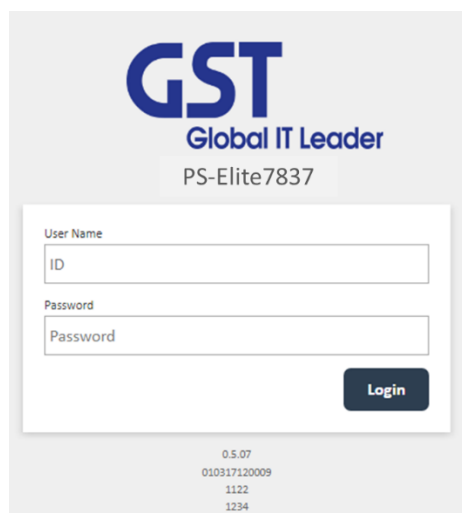
5. Choose 'Obtain DNS server address automatically'.

6. Click 'OK'

Figure 1. Laptop Configuration for connecting the Web-UI

#### 2) Enter the IP Address "192.168.2.1" into your browser address bar

### 8.2.2 Page Login

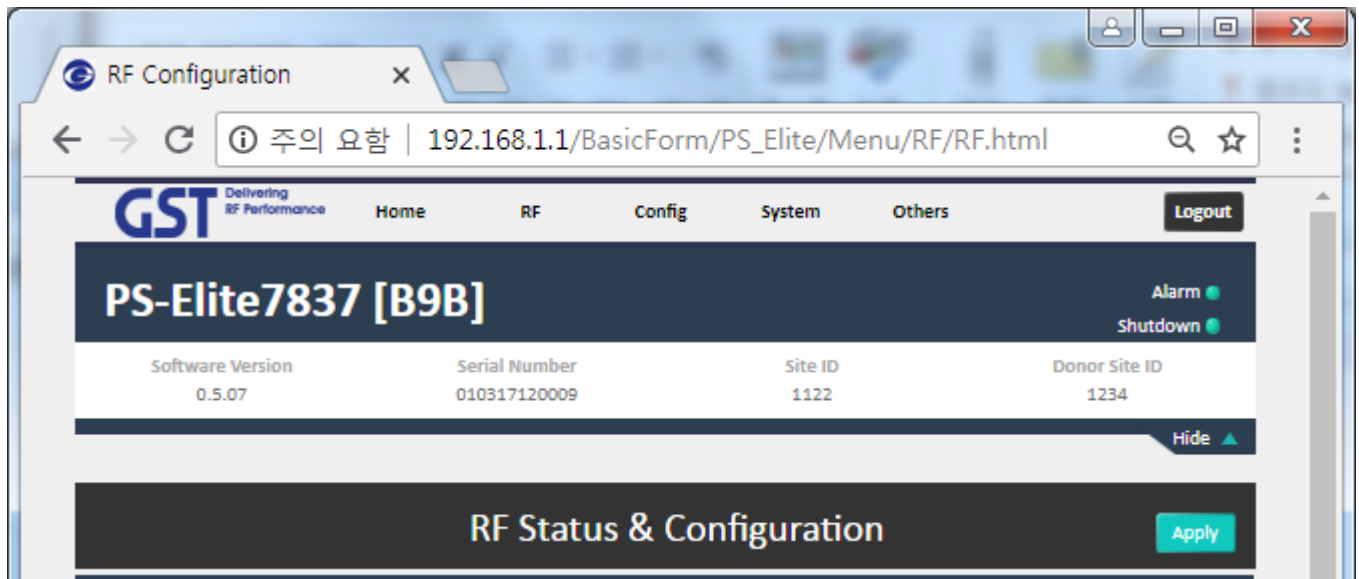


1) Access the portal by going to **http://192.168.2.1**

2) Sign in with username "**admin**" and Password "**admin**"

### 8.2.3 Log Out

1) Please logout of device once done viewing device information



## 8.2.4 RF Status & Configuration

- 1) Can check the current repeater status and setting the repeater system.
- 2) Items
  - Check of RSSI / Output Level
  - ALC Index, ALC On/Off, ALC Attn., AMP On/Off
  - AOC On/OFF, AOC DET, AOC CurrentAttn.
  - FirstNet (LTE) Band Select (Frequency and Bandwidth)
  - 700MHz P25 Band Select (Frequency and Bandwidth)
  - 800MHz P25 Band Select (Frequency and Bandwidth)
  - Shutdown On/Off Select

The image displays two screenshots of the RF Configuration web interface for a PS-Elite7837 [B9B] repeater. The interface is divided into several sections:

- Header:** Displays the site name "PS-Elite7837 [B9B]", software version (0.5.07), serial number (010317120009), site ID (1122), and donor site ID (1234).
- RF Status & Configuration:** A central section with an "Apply" button, containing various status indicators and configuration fields.
  - Common:** Fields for Site ID, Donor Site ID, TEMP[Y], Temp High Limit[Y], AOC On/Off, AOC, Squelch On/Off, Squelch Value, Alarm Delay On/Off, Shutdown On/Off, DL DFM Version, UL DFM Version, DL PPGA Version, UL PPGA Version, DL DFM Serial Number, UL DFM Serial Number, DL RF Serial Number, UL RF Serial Number, and Service Band Select (DUO).
  - 700M Downlink:** Fields for RSSI, Output, ALC Value, ALC On/Off, ALC Attn, and Amp On/Off.
  - 700M DL Alarm:** Indicators for Over Output, Low RSSI, and 700 DL HW Fail.
  - 800M Downlink:** Fields for RSSI, Output, ALC Value, ALC On/Off, ALC Attn, and Amp On/Off.
  - 800M DL Alarm:** Indicators for Over Output, Low RSSI, and 800 DL HW Fail.
  - Uplink:** Fields for RSSI, Output, ALC Attn, GainBalanceOffset, GainBalanceOn/Off, and AMP On/Off.
  - UL Alarm:** Indicators for Over Output, VSWR, and Shutdown.
- Common Alarm:** Indicators for Low Isolation, AC FAIL, Link Fail, Reboot, Temp, and DFM Fail.
- 700M LTE Band Selection:** A table for selecting bands and frequencies.
 

Band	Band Width(MHz)	Freq(MHz)	Band	Band Width(MHz)	Freq(MHz)
Band 1	10M	763	Band 2	OFF	750
- 700M P25 Band Selection:** A table for selecting channels, bandwidths, and frequencies.
 

Ch	BW	Freq	Ch	BW	Freq	Ch	BW	Freq	Ch	BW	Freq	Ch	BW	Freq
1	20	771.5	2	10	0	3	10	0	4	10	0	5	10	0
7	10	0	8	10	0	9	10	0	10	10	0	11	10	0
13	10	0	14	10	0	15	10	0	16	10	0	17	10	0
19	10	0	20	10	0	21	10	0	22	10	0	23	10	0
25	10	0	26	10	0	27	10	0	28	10	0	29	10	0
31	10	0												
- 800M P25 Band Selection:** A table for selecting channels, bandwidths, and frequencies.
 

Ch	BW	Freq	Ch	BW	Freq	Ch	BW	Freq	Ch	BW	Freq	Ch	BW	Freq
1	10	851.2	2	10	0	3	10	0	4	10	0	5	10	0
7	10	0	8	10	0	9	10	0	10	10	0	11	10	0
13	10	0	14	10	0	15	10	0	16	10	0	17	10	0
19	10	0	20	10	0	21	10	0	22	10	0	23	10	0
25	10	0	26	10	0	27	10	0	28	10	0	29	10	0
31	10	0												
- Dry Contact:** Indicators for AC Alarm[ExtAlarm1], BDA Alarm[ExtAlarm2], Reserved 1[ExtAlarm3], Reserved 2[ExtAlarm4], [DC Fail], and [ANT Fail].

## 8.2.5 Alarm Configuration

1) Check the status and status of the alarm on the repeater.

# PS-Elite7837 [B9B]

Alarm ●  
Shutdown ●

Software Version 0.5.07	Serial Number 010317120009	Site ID 1122	Donor Site ID 1234
----------------------------	-------------------------------	-----------------	-----------------------

Hide ▲

## Alarm Configuration

Apply

Serial Number:010317120009	Report Alarm <span style="border: 1px solid #ccc; padding: 2px 5px;">OFF</span>
----------------------------	---

### Alarm Configuration

No	Name	Status	Severity	Last Triggered	SNMP Mapping	DryContact Mapping
1	DL Over Output 700	<span style="color: #27ae60;">●</span>	Warning ▼	2018-07-13,18:1	rfAlarm_DL_OverOutput_700 ▼	NONE ▼
2	DL Over Output 800	<span style="color: #27ae60;">●</span>	Cleared ▼	2018-07-13,18:1	rfAlarm_DL_OverOutput_800 ▼	NONE ▼
3	DL VSWR Alarm 700	<span style="color: #27ae60;">●</span>	Cleared ▼	2018-07-13,18:1	rfAlarm_DL_VSWR_Alarm_700 ▼	NONE ▼
4	DL VSWR Alarm 800	<span style="color: #27ae60;">●</span>	Cleared ▼	2018-07-13,18:1	rfAlarm_DL_VSWR_Alarm_800 ▼	NONE ▼
5	DL HW Fail 700	<span style="color: #27ae60;">●</span>	Critical ▼	2018-07-13,18:1	rfAlarm_DL_HWFail_700 ▼	ExtAlarm2 ▼
6	DL HW Fail 800	<span style="color: #27ae60;">●</span>	Critical ▼	2018-07-13,18:1	rfAlarm_DL_HWFail_800 ▼	ExtAlarm2 ▼
7	DL Shutdown 700	<span style="color: #27ae60;">●</span>	Critical ▼	2018-07-13,18:1	rfAlarm_DL_ShutDown_700 ▼	ExtAlarm2 ▼
8	DL Shutdwn 800	<span style="color: #27ae60;">●</span>	Critical ▼	2018-07-13,18:1	rfAlarm_DL_ShutDown_800 ▼	ExtAlarm2 ▼
9	UL Over Output	<span style="color: #27ae60;">●</span>	Critical ▼	2018-07-13,18:1	rfAlarm_UL_OverOutput ▼	NONE ▼
10	UL VSWR Alarm	<span style="color: #27ae60;">●</span>	Critical ▼	2018-07-13,18:17	rfAlarm_UL_VSWR_Alarm ▼	NONE ▼
11	DFM Fail	<span style="color: #27ae60;">●</span>	Critical ▼	2018-07-13,18:17	rfAlarm_DFM_Fail ▼	NONE ▼
12	UL Shutdown	<span style="color: #27ae60;">●</span>	Critical ▼	2018-07-13,18:17	rfAlarm_UL_ShutDown ▼	ExtAlarm2 ▼
13	AC Fail	<span style="color: #27ae60;">●</span>	Critical ▼	2018-07-13,18:17	rfAlarm_AC_Fail ▼	ExtAlarm1 ▼
14	Temp	<span style="color: #27ae60;">●</span>	Critical ▼	2018-07-13,18:17	rfAlarm_Temp ▼	NONE ▼
15	Reset	<span style="color: #27ae60;">●</span>	Critical ▼	2018-07-13, 18:1	rfAlarm_Reset ▼	NONE ▼
16	Link Fail	<span style="color: #27ae60;">●</span>	Critical ▼	2018-07-13,18:17	rfAlarm_Link_Fail ▼	NONE ▼
17	DL Low RSSI 700M	<span style="color: #27ae60;">●</span>	Critical ▼	2018-07-13,18:17	rfAlarm_DL_Low_RSSI_700M ▼	NONE ▼
18	DL Low RSSI 800M	<span style="color: #27ae60;">●</span>	Critical ▼	2018-07-13,18:17	rfAlarm_DL_Low_RSSI_800M ▼	NONE ▼
19	Low Isolation	<span style="color: #27ae60;">●</span>	Critical ▼	2018-07-13,18:17	rfAlarm_Lowisolation ▼	NONE ▼

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## 8.2.6 Fake Alarm Configuration

- 1) Set alarm for testing purposes.

### Fake Alarm Configuration Apply

Serial Number:010317120009 Fake Alarm Mode

Fake Alarm Configuration			
No	Name	Status	Active
1	DL Over Output 700		<input type="text" value="OFF"/>
2	DL Over Output 800		<input type="text" value="OFF"/>
3	DL VSWR Alarm 700		<input type="text" value="OFF"/>
4	DL VSWR Alarm 800		<input type="text" value="OFF"/>
5	DL HW Fail 700		<input type="text" value="OFF"/>
6	DL HW Fail 800		<input type="text" value="OFF"/>
7	DL Shutdown 700		<input type="text" value="OFF"/>
8	DL Shutdwon 800		<input type="text" value="OFF"/>
9	UL Over Output		<input type="text" value="OFF"/>
10	UL VSWR Alarm		<input type="text" value="OFF"/>
11	DFM Fail		<input type="text" value="OFF"/>
12	UL Shutdown		<input type="text" value="OFF"/>
13	AC Fail		<input type="text" value="OFF"/>
14	Temp		<input type="text" value="OFF"/>
15	Reset		<input type="text" value="OFF"/>
16	Link Fail		<input type="text" value="OFF"/>
17	DL Low RSSI 700M		<input type="text" value="OFF"/>
18	DL Low RSSI 800M		<input type="text" value="OFF"/>
19	Low Isolation		<input type="text" value="OFF"/>

### 8.2.7 Communication Configuration

Set up the IP information for the network management communication.

Communication Configuration		Apply
<b>LAN</b>		
Obtain IP Address	STATIC	IP address 192.168.1.1
DHCP Server	ON	Netmask 255.255.255.0
		Gateway
<b>Waterproof Port</b>		
WAN Interface	MODEM(OFF)	IP Address 192.168.2.1
Obtain IP Address	STATIC	Netmask 255.255.255.0
		Gateway
<b>SNMP Common</b>		
Version	3	Manager IP 192.168.1.100
General Port	161	Trap Port 162
Heartbeat Interval	16 Minutes	Trap Option Inform
Latitude		Longitude
ex) N038.918890		ex) W094.657840
<b>SNMP v2C</b>		
Read Community	public	Write Community private
Trap Community	public	
<b>SNMP v3C</b>		
Read User	public	Write User private
Authentication	SHA	Privacy(Encryption) AES
Authentication Passphrase	password	Privacy Passphrase password
Trap User	public	Trap Engine ID
Authentication	SHA	Privacy(Encryption) AES
Authentication Passphrase	password	Privacy Passphrase password
<b>Date And Time</b>		
Current Date	July 13 2018	Set Date(Year)
Current Time(hour:minute)	18:27	Set Date(month, day)
Time Zone	Alaska	Set Time(hour:minute)
NTP Server	192.168.1.100	NTP Reset Interval 1n Hours
<b>Waterproof Port</b>		
		MAC address 12:34:56:45:6E:EE

### 8.2.8 System Log

Can view the log in connect to the WEB UI.

# Log

[Clear](#)

## Log

Number	Time	User	Operation	Description
1	2018/07/13 - 18:12:51		Logout	Logout
2	2018/07/13 - 18:15:32	admin	Login	Login
3	2018/07/13 - 18:15:35	admin	System download	Checked
4	2018/07/13 - 18:15:45	admin	System download	Checked
5	2018/07/13 - 18:15:49	admin	System download	Set
6	2018/07/13 - 18:12:51		Logout	Logout
7	2018/07/13 - 18:13:00	admin	Login	Login
8	2018/07/13 - 18:13:03	admin	System download	Checked
9	2018/07/13 - 18:13:13	admin	System download	Checked
10	2018/07/13 - 18:13:14	admin	System download	Set
11	2018/07/13 - 18:12:51		Logout	Logout
12	2018/07/13 - 18:18:03	admin	Login	Login
13	2018/07/13 - 18:18:07	admin	System download	Checked
14	2018/07/13 - 18:18:16	admin	System download	Checked
15	2018/07/13 - 18:18:33	admin	System download	Set
16	2018/07/13 - 18:12:52		Logout	Logout
17	2018/07/13 - 18:22:31	admin	Login	Login
18	2018/07/13 - 18:22:34	admin	System download	Checked
19	2018/07/13 - 18:22:44	admin	System download	Checked
20	2018/07/13 - 18:22:59	admin	System download	Set
21	2018/07/13 - 18:19:48	admin	Login	Login
22	2018/07/13 - 18:19:51	admin	System download	Checked
23	2018/07/13 - 18:20:00	admin	System download	Checked
24	2018/07/13 - 18:20:01	admin	System download	Set
25	2018/07/13 - 18:19:04	admin	Login	Login
26	2018/07/13 - 18:19:06	admin	System download	Checked
27	2018/07/13 - 18:19:17	admin	System download	Checked
28	2018/07/13 - 18:19:18	admin	System download	Set
29	2018/07/13 - 18:27:49	admin	Login	Login
30	2018/07/13 - 19:05:01	admin	Login	Login

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### 8.2.9 Alarm Log

Record the log on the alarm that occurred on the repeater.

Alarm Log			
Comment			Clear
Number	Last Triggered	Status	Alarm Name
1	2007-01-01, 00:01:01		Reset
2	2007-01-01, 00:01:01		DL Low RSSI 700M
3	2007-01-01, 00:01:01		Reset
4	2007-01-01, 00:01:01		Reset
5	2007-01-01, 00:01:01		Reset
6	2007-01-01, 00:01:01		Reset
7	2007-01-01, 00:01:01		Reset
8	2007-01-01, 00:01:01		Reset
9	2007-01-01, 00:01:01		Reset
10	2007-01-01, 00:01:01		Reset
11	2007-01-01, 00:01:01		Reset
12	2007-01-01, 00:01:01		Reset
13	2007-01-01, 00:01:01		Reset
14	2007-01-01, 00:01:01		Reset
15	2007-01-01, 00:01:01		Reset
16	2007-01-01, 00:01:01		Reset
17	2007-01-01, 00:01:01		Reset

### 8.2.10 Trouble Shooting

Provide contact information to assist in trouble shooting in the event of a repeater failure

## Troubleshooting

Toll Free: 1-866-9-GST-USA (Technical Support)  
support@gsteletechinc.com

Contact Information  
GS Teletech Inc.  
8206 Marshall Drive,  
Lenexa, Kansas 66214  
Tel: 913-469-6699  
Fax: 913-661-0163  
www.gsteletechinc.com

### 8.2.11 Remote Software Upgrade

To enhance the performance of the repeater, perform the Software Upgrade through the network.

The screenshot shows a web interface for software upgrade. At the top, there is a dark header with the text "Software Upgrade". Below this is a sub-header "Upload Software". The main area contains a file selection process: a text input field with "----" inside, a "Browse.." button, and an "Upload" button. Below the input field is a table with two columns: "File Name" and "File Size". At the bottom of the interface, there is a "Upgrade" button and a block of instructional text: "Uploading via Wireless Modem may take a few minutes. Please, do not reboot the repeater during uploading or upgrading process. When uploading process is finished, the upgrade file name will appear in 'File Name' menu. After upload is done, click Upgrade."

- 1) Select the file to upgrade and upload the file to the repeater's memory.
- 2) If the file is successfully uploaded, click the Update button to proceed with the upgrade.

## 8.2.12 User Management

Manage user accounts to login to WEB UI.

- 1) Password Change
- 2) User account Permission authorization and change
- 3) New account setting

### User Management

#### Edit User

User Name	<input type="text"/>
Password	<input type="password"/>
Password Confirm	<input type="password"/>
Authority	<input type="text" value="Read"/>

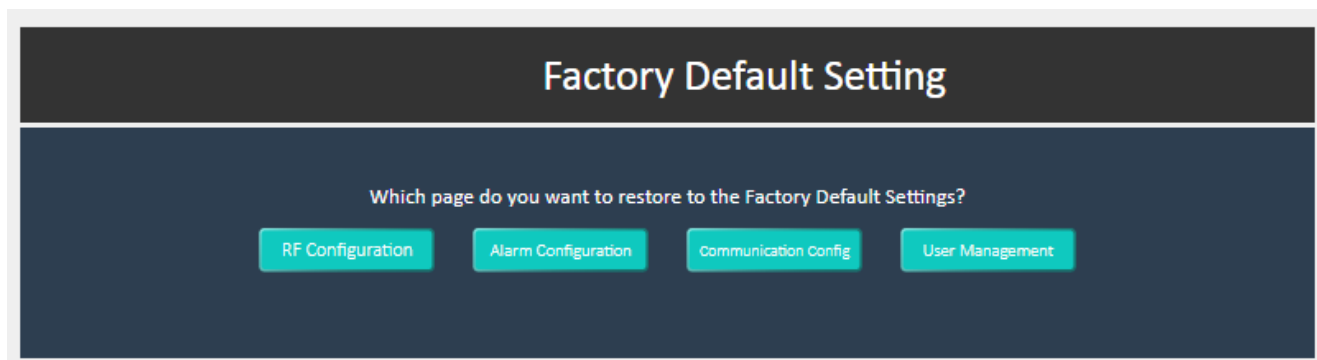
#### User List

<input type="text" value="admin"/>	<input type="button" value="▲"/>
<input type="text" value="admin01"/>	<input type="button" value="▼"/>

User name and password must be 5~8 characters.

### 8.2.13 Factory Default Setting

The factory default setting is the default setting of the repeater that is controlled by the company. When performing a factory-defined setting, the L status set is initiated by the user.



### 8.2.14 System Reset

You can system reset by WEB-UI

