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6.0 GHz to 18.0 GHz Limiter Switch Box

PMI Model No. PSD-6G18G-CD-2

Operating Instructions

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1. Control and Status

This section of the document describes the specifications for control and status of the Limiter Switch Box, PMI Model No. PSD-6G18G-CD-2 via external network (TCP/IP socket). The Network Attenuator Controller uses an XPort Network to Serial Interface to interface the onboard MicroController to the Network. Attached is the Datasheet and Users Guide describing the XPort module and additional programming features.

The Limiter Switch Box, using the Default IP Address, listens on TCP/IP Address 10.1.1.241, Port 10001 for external socket connections. Default Network Mask set to 255.0.0.0. Gateway and DNS default set to 0.0.0.0. **Only one connection at a time is supported on the socket connection.**

2. General Command Syntax

Commands are sent to the Limiter Switch Box, responses are received from the Limiter Switch Box. All commands and responses are comprised of ASCII characters. The Commands and Responses section of this document provide the format and description of each of the commands and responses. Every command must be terminated with a line feed character (0x0a). Every command sent by the user to the Limiter Switch Box will be followed by a response from the Limiter Switch Box to the user. The user must wait to receive the response before sending another command. The response can be one of two message types: a simple acknowledge mnemonic (AK), a negative acknowledge mnemonic (NK) or a response that contains the data associated with the command.

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3. Commands and Responses

The following sections describe the various commands, responses and their parameters. As was mentioned previously, all commands received by the Limiter Switch Box generate some type of response – either a simple acknowledge or with other data. A description of the response provided by each command is discussed with each command. Unless otherwise stated, the user must always wait until the response is received for a command before sending another command. In the syntax examples the "\r\n" is the carriage return and line feed.

AK – Acknowledge

Acknowledge is a response sent by the Limiter Switch Box to the user when a command was received and processed without problems. There are no parameters.

Example: AK\r\n

NK – Negative Acknowledge

The negative acknowledge is a response returned from the NAC when the command received was syntactically or functionally incorrect. There are no parameters.

Example: NK\r\n

co – Set IP Address

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This command is used to manually set the IP Address, Host Bits (Network Mask), Gateway, Port Number and DNS Server IP Address of the Limiter Switch Box. This command takes about 30 seconds to complete and reboot the Limiter Switch Box. Once the reboot is completed, a new network connection can be established at the new network address. Gateway and DNS Server addresses can be set to "0.0.0.0" if not used. The Limiter Switch Box responds with an AK or NK.

Example: co 192.168.1.99 8 192.168.1.1 10001 192.168.1.1\r\n

General command syntax: co aaa.aaa.aaa.aaa b ccc.ccc.ccc.ccc ddddd eee.eee.eee.eee\r\n

aaa – **IP Address for the Network Interface Board**
Example – 192.168.1.99

b – **Number of Host Bits (Network Netmask)**

Network Class	Host Bits	Netmask
A	24	255.0.0.0
B	16	255.255.0.0
C	8	255.255.255.0

ccc – Gateway IP Address
Example: 192.168.1.1

ddddd – Port number for the Network Interface Board
Example: 10001

eee – IP Address for the DNS Server
Example: 192.168.1.1

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GS – Get Status

This command returns the status of the input switch and output TTL Control Bit.

Example: GS/r/n

Response Example: 1000/r/n

General Syntax of the Limiter Switch Box response: wxyz/r/n

w - Current State of the Master IP Reset Button
1 – Indicates Button no pressed
0 – Indicates Button Pressed

x - Current State of the Manual Override
1 – Indicates Manuel Override
0 – Indicates No Manual Override

y - Current State of the Threshold Detector
1 – Indicates a TTL High is coming from the Threshold Detector
0 – Indicates a TTL Low is coming from the Threshold Detector

z - Current State of the TTL Control going to the RF Switch
1 – Indicates a TTL High is going to the RF Switch
0 – Indicates a TTL Low is going to the RF Switch

CV – Get Version

This command returns the current Firmware Version.

Example: GV\r\n

Response Example: EDCS Version 1.0 03/13/2014\r\n

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SA – Set Attenuator

This command is used to control the RF Attenuator. The Limiter Switch Box responds with an AK or NK.

Example: SA12.56\r\n

General Command Syntax: SAx\r\n

x - Represent the desired RF Attenuator Setting. The RF Attenuator range is 0 to 64 dB, with 2 decimal places of resolution.

RAA – Return Attenuator Setting (ASCII)

This command returns the decimal value of the current RF Attenuator setting in dB.

Command Example: RAA\r\n

Response Example: 12.56\r\n

General syntax of the Limiter Switch Box response: xx.xx\r\n

xx.xx - Depending on the current RF Attenuator, return string can range from 00.00 to 63.94 dB.

RAB – Return Attenuator Setting (BINARY)

This command returns the binary bit value sent to the RF Attenuator.

Command example: RAB\r\n

Response example: 1000000000\r\n

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General syntax of the NAC response: abcdefghij\r\n

a - 32 dB Control Bit Status
b - 16 dB Control Bit Status
c - 8 dB Control Bit Status
d - 4 dB Control Bit Status
e - 2 dB Control Bit Status
f - 1 dB Control Bit Status
g - 0.5 dB Control Bit Status
h - 0.25 dB Control Bit Status
i - 0.13 dB Control Bit Status
j - 0.06 dB Control Bit Status

RIP – Reset IP Address to the pre-programmed default value

This command returns the Limiter Switch Box to its default pre-programmed IP Address, Host Bits setting (Network Mask), Gateway, Port Number and DNS Server IP Address. This command takes about 30 seconds to complete and reboot the Limiter Switch Box. Once the reboot is completed, a new network connection can be established at the new network address. The Limiter Switch Box responds with an AK or NK.

Command example: RIP\r\n

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Limiter Switch Box Quick Reference Command Guide

Command	Definitions	Network Return
co	This command is used to manually set the IP Address, Host Bits (Network Mask), Gateway, Port Number and DNS Server IP Address of the Limiter Switch Box.	AK or NK
GS	This command returns the status of the Input Switches and Output TTL Control Bit.	Status String
GV	This command returns the current Firmware Version	Version Info
SA	This command is used to control the RF Attenuator.	AK or NK
RAA	This command returns the decimal value of the current RF Attenuator setting in dB	Attenuator Value
RAB	This command returns the binary bit value sent to the RF Attenuator.	Attenuator Control Bit Values
RIP	This command returns the NAC to its default pre-programmed IP Address, Host Bits setting (Network Mask), Gateway, Port Number and DNS Server IP Address	AK or NK

Details of each of the commands are described in the Commands and Responses section of this document.