

# **PESA PERC3000 Main Application Software Version 1.8**

## **Product Functional Definition and Validation**

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## 1.0 Introduction

The purpose of the document is to perform validation for the main software application version 1.8 of the PERC 3000.

## 2.0 Functional Description

Version 1.8 of the PERC3000 controller has the following updates:

1. Adds support for the new Smart32 panel.
2. Sends Touch72 configurations more quickly.
3. corrected handling of base config on backup machine
4. set the pthread\_create attribute to NULL (as suggested by Bill)
5. Do not turn SO\_BROADCAST on the socket
6. bind to the address of eth0 rather than INADDR\_ANY
7. IP\_ADD\_MEMBERSHIP to the address of eth0 rather than INADDR\_ANY

### 2.1 System Diagram

NA

### 2.2 Functional Diagrams

NA

### 2.3 Control interfaces and protocols

P2 protocol

### 2.4 Electrical Interfaces

Ethernet

### 2.5 System power

NA

## 3.0 Controls

Detailed description of controls

### A. Matrix Status

Lists current level settings of all router outputs

### B. Matrix Preset

Allows the creation and recall of matrix scenarios.

### C. Panel Status

Gives the current on/off line status of all control panels assigned to PERC3000 controller.

**D. Salvo Status**

Lists all current system Salvo groups and allows testing

**E. Info - Active/Standby**

Presents information about the PERC3000 controllers, allows pairing and unpairing, and allows switching of Active/Standby controllers

Detailed description of configuration

**A. System Parameters**

Shows name of configuration, chop rate, and sync 1& 2. This page also gives information for setting up the serial interface and allows configuration of the eight serial ports available to the system.

**B. Components**

Setup page for the components which will be controlled by the PERC3000 system controller

**C. Levels**

Creates levels which define matrix sizes and assigns them to the components created above

**D. Sources**

Allows naming of sources and assignment of ports

**E. Destinations**

Allows naming of destinations and assignment of ports

**F. Source-destination blocks**

Setup screen to block specific sources from any destination

**G. Reentries**

This page sets up the system reentries

**H. Tielines**

This page is for setting up Sources/destinations between systems

**I. Salvos**

Allows creation and naming of system memory salvos

**J. Level include lists**

Creates level lists for use by panels

**K. Source include lists**

Creates source lists for use on panels

**L. Destination include lists**

Creates destination lists for use on panels

**M. Salvo include lists**

Creates salvo lists for use on panels

**N. Categories**

Allows the creation of panel shortcut keys for sources

**O. Data key lists**

Setup screen for creating key lists for PESA control panels

**P. Panels**

Allows addition and deletion of programmable panels and panel servers

**Q. Button Images**

Allows the selection of text or images for the relegendable Touch 72 panel

### 3.1 GUI Controls

Cattrax.

### 3.2 System Controls

Interface port and detailed list of commands

### 3.3 Switches and Jumper settings

NA

## 4.0 Validation

### 4.1 System configuration

Complete listing of all hardware and documentation used for validation

Hardware under validation

Hardware	Part Number	Agile Revision	Agile Description
PERC3000	PERC3000	D	PERC3000 SYSTEM CONTROLLER SINGLE 1RU SERVER INTERNAL P/S

Software / FPGA code

Hardware	Part Number	Agile Revision	Agile Description
PERC3000	81905608520	H	PERC3000 MAIN APPLICATION SW V1.8

Supporting hardware

Hardware	Part Number	Agile Revision	Agile Description
PERC1000	81906527220	I	GP1000 POWER SUPPLY WITH PERC1000 CONTROLLER
PERC1500	81905608070	G	SOFTWARE DRS EDXE AND JAGUAR PERC1500 SYSTEM CONTROLLER
PMFC	81906523370	U	CHEETAH FRAME CONTROLLER CARD
Serial Interface	PERC3000-SERIAL-IF	A	PERC3000 SERIAL INTERFACE ETHERNET TO 8 SERIAL PORTS 1RU INTERNAL P/S
Panel Server	RCP-PANEL-SERVER	D	RCP-PANEL-SERVER ADAPTS RCP PANELS TO PERC3000 CONTROLLER SUPPORTS 32 PANEL
Touch 72	TOUCH72LCD	C	TOUCH72LCD 72 LCD SWITCHES WITH TOUCHSCREEN W P/S 2RU NETWORK REMOTE PANEL

### 4.2 System Power

NA

### 4.3 Control Verification

### 4.3.1 GUI Controls

Test results for all listed GUI controls.

#### Equipment used

type	Serial Number	MAC Address	Main App	SW Boot	CPLD
PERC1000	652722b06490023	00-50-C2-1A-F7-F8	3.4	1.0	0.24
PERC1000	652722b07040068	00-50-C2-1A-F3-38	3.4	1.0	0.24
PERC1500	653316F12320038	00-0B-3A-00-09-09	2.2	1.0	2.0
PERC1500	653316F12320028	00-0B-3A-00-09-0B	2.2	1.0	2.0
PMFC	652397A12441391	00-0B-3A-00-09-E9	5.5		
PMFC	652397N12441371	00-0B-3A-00-09-EF	5.5	1.4	1.2
PERC3000-SERIAL-IF	2964	00-90-E8-2D-28-D8	Firmware version: 3.3 build 08042219		
RCP-PANEL-SERVER	Lab RCP Panel Server	00-50-C2-1A-F2-73	2.1	0.1	1.2
RCP-PANEL-SERVER	653343C14030084	00-0B-3A-00-14-19	2.1	0.1	1.2
TOUCH72	Engineering	00-0B-3A-00-08-8B	1.3	0.1	2.0

#### Control panels used

Panel type	Status
RCP-128X	Verified OK
RCP-64X	Verified OK
RCP-CSD	Verified OK
RCP-GPI	Verified OK
RCP-LCXY	Verified OK
RCP-MB2	Verified OK
RCP-MLDT	Verified OK
RCP-MLTP	Verified OK
RCP-MP32	Verified OK
RCP-MP32D	Verified OK
RCP-STAT1	Verified OK
RCP-STAT2	Verified OK

### 4.3.2 System Controls

Tests performed in Catrax version 3.4.2 build 5429 unless otherwise noted

#### Controller Status Menu

Tab	Function	Status
Matrix Status	Status/Confidence	Verified OK
Matrix Status	Take	Verified OK
Matrix Status	Lock	Verified OK
Matrix Status	Unlock	Verified OK
Matrix Preset	Get Matrix Current	Verified OK
Matrix Preset	Take All	Verified OK

Matrix Preset	Take Selected	Verified OK
Matrix Preset	Clear All	Verified OK
Matrix Preset	Clear Selected	Verified OK
Matrix Preset	Override Current Lock	Verified OK
Matrix Preset	Save	Verified OK
Matrix Preset	Load	Verified OK
Panel Status	Status	Verified OK
Panel Status	Reset individually	Verified OK
Panel Status	Reset All Panels	Verified OK
Panel Status	Refresh	Verified OK
Salvo Status	Groups list	Verified OK
Salvo Status	Fire Salvo	Verified OK
Info-Active/Standby	Status	Verified OK
Info-Active/Standby	Power Off	Verified OK
Info-Active/Standby	Pair Controllers	NOTE 2
Info-Active/Standby	Set Mode	Verified OK
Info-Active/Standby	Unpair Controllers	NOTE 3

### Configuration Menus

Tab	Function	Status
System Parameters	Configuration Name	Verified OK
System Parameters	Sync Reference 1	Verified OK
System Parameters	Sync Reference 2	Verified OK
System Parameters	Panel Chop Rate	Verified OK
System Parameters	Serial Interface IP	Verified OK
System Parameters	Serial Port Configuration	Verified OK
Components	Add	Verified OK
Components	Delete	Verified OK
Components	Nickname	Verified OK
Components	Name	Verified OK
Components	IP Address	Verified OK
Components	Component Type	Verified OK
Components	Strobe	Verified OK
Components	Input Offset	Verified OK
Components	Output Offset	Verified OK
Components	Description	Verified OK
Levels	Add	Verified OK
Levels	Delete	Verified OK
Levels	Nickname	Verified OK
Levels	Name	Verified OK
Levels	Number	Verified OK
Levels	Number of Outputs	Verified OK
Levels	Number of Inputs	Verified OK
Levels	Chop Mode	Verified OK
Levels	Port Level	Verified OK
Levels	Selected Component	Verified OK
Levels	Available Component	Verified OK
Levels	Description	Verified OK
Sources	Definitions	Verified OK
Sources	Copy	Verified OK
Sources	Cut	Verified OK
Sources	Delete	Verified OK
Sources	Select All	Verified OK
Sources	Copy & Increment	Verified OK
Sources	Add Range	Verified OK
Sources	Auto Increment	Verified OK

Sources	Auto Increment Block	Verified OK
Sources	Fill Down	Verified OK
Sources	Fill Up	Verified OK
Sources	Fill Right	Verified OK
Sources	Fill Left	Verified OK
Sources	Set Tieline Source	Verified OK
Destinations	Definitions	Verified OK
Destinations	Copy	Verified OK
Destinations	Cut	Verified OK
Destinations	Delete	Verified OK
Destinations	Select All	Verified OK
Destinations	Copy & Increment	Verified OK
Destinations	Add Range	Verified OK
Destinations	Auto Increment	Verified OK
Destinations	Auto Increment Block	Verified OK
Destinations	Fill Right	Verified OK
Destinations	Fill Left	Verified OK
Destinations	Set Sync Reference	Verified OK
Source-Dest Blocks	Destination Name	Verified OK
Source-Dest Blocks	Add	Verified OK
Source-Dest Blocks	Edit	Verified OK
Source-Dest Blocks	Clear All Blocked Sources	Verified OK
Reentries	Add	NOTE 4
Reentries	Edit	Verified OK
Reentries	Delete	Verified OK
Tielines	Add	Verified OK
Tielines	Edit	Verified OK
Tielines	Delete	Verified OK
Salvos	Add	Verified OK
Salvos	Edit	Verified OK
Salvos	Delete	Verified OK
Level Include Lists	Add	Verified OK
Level Include Lists	Edit	Verified OK
Level Include Lists	Delete	Verified OK
Source Include Lists	Add	Verified OK
Source Include Lists	Edit	Verified OK
Source Include Lists	Delete	Verified OK
Destination Include Lists	Add	Verified OK
Destination Include Lists	Edit	Verified OK
Destination Include Lists	Delete	Verified OK
Categories	Add	Verified OK
Categories	Edit	Verified OK
Categories	Delete	Verified OK
Panel Key Lists	Add	Verified OK
Panel Key Lists	Edit	NOTE 4
Panel Key Lists	Clone	Verified OK
Panel Key Lists	Delete	Verified OK
Panels	Add	Verified OK
Panels	Edit	Verified OK
Panels	Delete	Verified OK
Button Images	Button Status	Verified OK
Button Images	Panel Name	Verified OK
Button Images	Custom Text	Verified OK
Button Images	Predefined Image	Verified OK
Button Images	Custom Image	Verified OK
Button Images	Submit key	Verified OK
Button Images	Shift + Submit key	Verified OK



Button Colors	Modify	Verified OK
Button Colors	Reset	Verified OK

**Notes:**

1. All tests performed using Catrax version 3.4.2 build 5438.
2. When pairing the Redundant controller becomes active.
3. When unpairing RCP panels go offline and remain there.
4. Adding Re-entry to an existing Touch 72 panel key list does not update until panel reboot.

**4.3.3 Switches and Jumper settings**

NA

**4.4 Electrical verification**

NA

**4.5 Mechanical verification**

NA

**4.6 Thermal verification**

NA

**4.7 Agency verification**

NA