



# Settings, Data and Software Tool

# PC Application Software for SuperTAPP SG User Manual





#### About this manual

This document contains proprietary information that is protected by copyright. All rights are reserved. No part of this publication may be reproduced in any form or translated into any language without the prior, written permission of Fundamentals Limited.

The information contained in this document is subject to change without notice.

Registered names, trademarks, etc., used in this document, even when not specifically marked as such, are protected by law.

#### Software Supplier and Publisher

The PC Application software is supplied by, and this manual is published by:

Fundamentals Limited Unit 2, Hillmead Industrial Park Marshall Road Swindon SN5 5FZ UK

#### Document Reference FP1034-U-10 v2.3

#### **Version Information**

Issue	Date	Description of Main Changes	Software version
1.0	Sept. 2016	First issue	1.0.0.297
2.0	July. 2019	Updated to latest revision of PC tool	2.11.0.0
2.1	Oct 2020	Updated to latest revision of PC tool	3.00
2.2	Oct 2021	Updated to latest revision of PC tool	3.3.0
2.3	May 2022	Updated location	3.3.0



# **Table of Contents**

Tab	able of Contents	3
1	List of Figures	4
2	Introduction	5
3	Installation Procedures	5
3.1	1 Installation	5
3.2	2 Uninstalling	6
4	User Interface Description	7
4.1	1 Connection Status	7
4.2	2 Relay Information bar	8
	3 Function tabs	
	4 Main application area	
	5 Tools menu	
4.6	6 Exit button	9
5	Application Functions	11
5 5.1		
		11
	1 Settings	<b> 11</b> 11
	1 Settings5.1.1 Menu tree5.1.2 Settings selection5.1.3 Settings Viewer/Editor	<b> 11</b> 11 12 13
	1 Settings5.1.1 Menu tree	<b>11</b> 11 12 13 14
	1 Settings	<b>11</b> 11 12 13 13 14 14
	1 Settings.5.1.1 Menu tree.5.1.2 Settings selection5.1.3 Settings Viewer/Editor5.1.4 Source Information5.1.5 Control-Panel5.1.6 Editing Binary I/O	<b>11</b> 11 12 13 13 14 14 14 14
	1 Settings5.1.1 Menu tree	<b>11</b> 11 12 13 13 14 14 14 16 17
	1 Settings.5.1.1 Menu tree.5.1.2 Settings selection5.1.3 Settings Viewer/Editor5.1.4 Source Information5.1.5 Control-Panel5.1.6 Editing Binary I/O	<b>11</b> 11 12 13 13 14 14 14 16 17
5.1	1 Settings.5.1.1 Menu tree.5.1.2 Settings selection5.1.3 Settings Viewer/Editor5.1.4 Source Information5.1.5 Control-Panel5.1.6 Editing Binary I/O5.1.7 Conversion Report5.1.8 Printing Settings File in Excel2 Settings File Info	<b>11</b> 11 12 13 14 14 14 14 16 17 18 <b>18</b>
5.1 5.2 5.3	1 Settings	<b>11</b> 11 12 13 14 14 14 16 17 17 18 <b>18</b> <b>20</b>
5.1 5.2 5.3 5.4	<ul> <li>Settings</li></ul>	<b>11</b> 11 12 13 14 14 14 14 16 17 18 18 <b>18</b> <b>20</b> <b>21</b>
5.1 5.2 5.3 5.4 5.5	1 Settings	11         11         12         13         14         14         14         14         14         14         14         14         14         14         15         16         17         18         20         21         21
5.1 5.2 5.3 5.4 5.5 5.6	1 Settings	
5.1 5.2 5.3 5.4 5.5 5.6 5.7	1 Settings	11         11         12         13         14         14         14         14         14         14         14         14         14         14         15         16         17         18         20         21         21         23         24



# 1 List of Figures

Figure 1:SuperTAPP SG Application file	
Figure 2:Window after successful Installation	6
Figure 3:Removing a previously installed application	6
Figure 4:Application window	7
Figure 5:Tools menu	9
Figure 6:Privilege mode warning	9
Figure 7:Changed values warning	10
Figure 8:Settings view	11
Figure 9:Menu view	12
Figure 10:Settings selection view	12
Figure 11:Setting value editor	13
Figure 12:Changing a setting value in a group	13
Figure 13:Colour references	14
Figure 14:Changed setting value	14
Figure 15:Differences between loaded settings and relay settings	16
Figure 16:Editing a Binary I/O in settings	17
Figure 17:Conversion Report	18
Figure 18:Settings File Info view	19
Figure 18:Event data view	20
Figure 19:Event download Progress bar	20
Figure 20:Analogue Data View	21
Figure 21:Date and time view	22
Figure 22:Software view	23
Figure 23:About view	24



# 2 Introduction

The SuperTAPP SG settings, data and software tool is designed to communicate with SuperTAPP SG and act as a PC user interface. The application performs the following functions:

- Allow the application to control the relay via a USB connection
- ▲ Facilitates setting the date and time
- ▲ Identifies software version number
- ▲ Updates software
- Downloads setting values from the relay
- Facilitates editing and uploading new setting values to the relay
- Loads the saved setting data and saves the edited data
- ▲ Facilities access to analogue and event data.

The application is fully compatible with Windows 7, Windows 8, Windows 8.1 and Windows 10.

## 3 Installation Procedures

If any versions of the SuperTAPP SG Application have previously been installed, these must be uninstalled before completing a new installation process. This means uninstalling it following the uninstall process in 3.2 and then deleting any files left in the OS(C:)>Program files(x86)>SuperTAPP SG folder.

#### 3.1 Installation

1. Double click on the desired version of SuperTAPP SG Application installer

#### SG Tool Versions $\rightarrow$ $\mathbf{T}$ ^ Name Date modified Туре Size 📌 Quick access superTAPP SG Application v2.11.exe 16/08/2019 09:32 Application 87,754 KB Desktop SuperTAPP SG Application v3.0.exe 22/09/2020 09:56 Application 87,776 KB 🕹 Downloads \* Documents \* Pictures \*

#### Figure 1:SuperTAPP SG Application file

- 2. An installation window should appear with required memory and file destination. When this criterion is as desired, proceed by pressing install.
- 3. After the installation has been completed the following window should be displayed.



#### Figure 2:Window after successful Installation



#### 3.2 Uninstalling

- 1. This should be completed in Microsoft settings/apps and searching for SuperTAPP SG, then clicking uninstalling.
- 2. The Modify, Repairing or Remove window will appear. Clicking remove will uninstall the application and completion will be confirmed.

#### Figure 3:Removing a previously installed application





# 4 User Interface Description

The application window consists of the following parts, referring to Figure 4:

- 1. Connection status
- 2. Relay information bar
- 3. Function tabs
- 4. Main application area
- 5. Tools menu
- 6. 'Exit' button.

#### Figure 4:Application window

SupertAPP SG 2						4	- 0	×
Relay None   SuperTAPP	Firmware V	ersion : 8.3.1.0 Ecotloade	Wersion : Relay Da	Ite/Tine : 04-Sep-2020 1	053:56	1 Applicat	ion Mode Connected	
Settings O	Parameter i Parameter	v Gro Range		Default Value	Group	Value		
Event Deta								
Analogue Data 🛞								
Date 3.7me								
Terrivarie 🗙								
knut 🚍	1							
3								
5	4							
Tadia 🗾 🕨	Lord Pron Pile Save 1	To Pla Company With Today	sed Prom Rolay	Talay:				
alled to read ready settings Relay stopped responding.	Please tr			Ť.				1

Below is a short description of what each part does:

#### 4.1 Connection Status

The connection between the PC application and the relay is established via USB. This connection allows the tool to control and make settings changes to the relay. The status of this connection is shown by text in the top right corner of the screen which can show one of following labels:

#### ▲ Not connected

This can mean one of three things: the relay is off, the relay is not connected or the communication cable is broken in some way. Users can still load settings files from the PC and modify them.



- ▲ **Application mode** This means that the tool is successfully connected to the relay and user can download/upload settings to the relay, view/download logs and set the date and time.
- ▲ **Bootloader mode** This means that the tool is successfully connected to the relay which is in bootloader mode. The user can now update software as described in section 5.5.

#### 4.2 Relay Information bar

This section displays useful information about the connected relay. Referring to Figure 4

<b>A</b>	Relay Name	The relay name as configured in the connected relay settings. This field is blank if no relay is connected.
	Software Version	Main relay software version which is running on the connected relay. This field is blank if no relay is connected.
*	Bootloader Version	Bootloader software version which is installed on the connected relay. This field is blank if no relay is connected.
•	Board Date/Time	Current date and time on the connected relay. This is defaulted to "01- Jan-1900 00:00:00" if no relay is connected.

#### 4.3 Function tabs

As displayed in Figure 4 these tabs allow the user to navigate between different functions of the application. The tabs are:

Settings tab	Facilitates the loading, saving of setting values to/from disk, editing settings values, downloading setting values from the relay and uploading the loaded or changed setting values to the relay.
Event Data tab	Facilitates the copying of the event data from the relay storage to the PC disk. It also allows the user to filter the event data by date.
Analogue Data tab	Facilitates the copying of analogue data from the relay storage to the PC disk. It also has a feature that allows the user to filter by the date.
Date & Time tab	Allows the user to retrieve and set date and time for relay.
Software tab	Facilitates the option of uploading software versions to the relay.
About tab	Displays the application version number.

#### 4.4 Main application area

The main application area is where the user carries out the different functions of the tool. The contents of the main application area as shown in Figure 4, is dependent on the selected function tab and is described in detail for each function in section 5.



#### 4.5 Tools menu

PC software offers several tools to perform diagnostics on the relay as well as itself. One of the tools allows the user to check the storage of a SuperTAPP SG as displayed in Figure 5. This operation checks the consistency of storage and fixes any errors that are found. The checking process needs additional PC privileges for the user to use. The application will be restarted in privilege mode and the user will be asked to allow this as Figure 6 illustrates.

#### Figure 5:Tools menu



#### Figure 6:Privilege mode warning



After the completing of the checking process, the application will be restarted in normal mode.

'View Application Logs' tool is provided to help in diagnosing any problems experienced by users while using PC software.

#### 4.6 Exit button

The Exit button is used to stop the application. If some setting values were changed, a warning message will be displayed as see in Figure 7.



# Figure 7:Changed values warning

Warning!			
Some setting value	es were changed! Pleas	e select a	n option.
Save Settings	Upload settings to Relay	Exit	Cancel



# **5** Application Functions

#### 5.1 Settings

The settings functionality consists of following parts, referring to Figure 8:

- 1. Menu tree
- 2. Settings selection
- 3. Setting viewer/editor
- 4. Settings source information
- 5. Control-panel

#### **Figure 8:Settings view**

elay Name : Supe	rTAPP	4	Software Versi	ion : 9.2	Relay Date/Time : 24-Feb-201	7 09:08:26		Application Mode	Connected
		Voltage target	Parameter : All	✓ Group :	× 2			UKPN_EPN	_T1 SuperTAPP_2021-05-
ettings	٥	Network	Parameter	Range	Default Value	Group	-	Value	
	_	Transformer	Target voltage	90.0 - 110.0 %	100.0 %	1	V	100.0 %	
vent Data	± 1	VTs & CTs	Bandwidth	±0.5 - 10.0 %	±1.5 %	1		±1.4 %	
	Voltage input 1	Bandwidth 2 type	Off, Target change only, On	Off	1		Off		
		Voltage input 2	Bandwidth 2	±0.0 - 5.0 %	±0.0 % 3	1		±0.0 %	
Analogue Data 📀	0	Voltage input 3	Initial tap time delay	10 - 120 s	60 s	1		60 s	
		Voltage input 4	Fast tap	Disabled, Down, Up/down	Down	1		Down	
	-	VT 1	Fast tap threshold	±0.5 - 5.0 %	±2.0 %	1		±2.0 %	
ate & Time	0	VT 2	Fast tap time delay	3 - 120 s	55	1		20 s	
	0	VT 3	Generator bias	0.0 - 10.0 %	0.0 %	1		0.0 %	
		VT 4	LDC	0.0 - 20.0 %	5.0 %	1	ī	5.0 %	
oftware Update	×	Current input 1	Winding 1 LDC rating	50 - 10000 A	1575 A	1	ň	1200 A	
		Current input 2	Winding 2 LDC rating	50 - 10000 A	1575 A	1	ă	1205 A	
		Current input 3	Reverse LDC Level	Use fwd LDC, 0.0 - 20.0 %	0.0 %	1		0.0 %	
bout	=	CT trim	Wdg1 rev LDC rating	Wdg1 fwd rating, 50 - 10000 A	Wdg1 fwd rating	1	ī	Wdg1 fwd rating	
		Voltage target adjus	Wdg2 rev LDC rating	Wdg2 fwd rating, 50 - 10000 A Wdg2 fwd rating, 50 - 10000 A	Wdg2 fwd rating	1		Wdg2 fwd rating	
		Tap changer	Voltage control mode	Enhanced TAPP, Master-follower	Enhanced TAPP	1		Enhanced TAPP	
		Alarms	Follower delay	3 - 60 s	5 s	1		S s	
	~	Inputs and outputs	Exclusive tapping	Disabled, Enabled	Disabled	1	H	Disabled	
		Binary inputs		and the second		2	1	102.0 %	
		Binary outputs	Target voltage Bandwidth	90.0 - 110.0 % ±0.5 - 10.0 %	100.0 %	2		±1.4 %	
		Milliamp outputs			±1.5 %		H		
		Timer delays	Bandwidth 2 type	Off, Target change only, On		2	-	Off	
		Busbar grouping	Bandwidth 2	±0.0 - 5.0 %	±0.0 %	2		±0.0 %	
		Communications	Initial tap time delay	10 - 120 s	60 s	2		60 s	
		Relay configuration	Fast tap	Disabled, Down, Up/down	Down	2		Down	
		_	Fast tap threshold	±0.5 - 5.0 %	±2.0 %	2		±2.0 %	
			Fast tap time delay	3 - 120 s	5 s	2		20 s	
			Generator bias	0.0 - 10.0 %	0.0 %	2		0.0 %	
ools	, L	1	Load From File Save To F	le Compare With Relay Load From Relay	Apply To Relay 5				Unsaved changes Changed from defau

#### 5.1.1 Menu tree

The settings are in hierarchical form, corresponding to the setting menus and submenus within the SuperTAPP SG. You can select a menu in the settings tree to display all the settings from that menu as in Figure 9.



#### Figure 9:Menu view

About       Image: Source triput 2         About       Image: Source triput 2         Image: Source triput 2       Image: Source tr	Relay Name : Supe	erTAPP		Software Versi	on : 9.2	Relay Date/Time: 24-Feb-20	17 09:08:26		Application Mode Connecte	d
Event Data         Transformer         Hange         Default Youe         Group         Value           Event Data         Image You Sage rput 1         Target Voltage         900.110.0 %         £100.9 %         1         Image You Sage rput 1           Analogue Data         Image You Sage rput 2         Bandwidh 2 type         Off, Target change only, On         Off         1         Image You Sage rput 3           Analogue Data         Image You Sage rput 4         Voltage rput 2         Bandwidh 2 type         Off, Target change only, On         Off         1         Image You Sage         Image You Sage         Image You Sage You You Sage You You Sage You				Parameter : All	✓ Group :	~			UKPN_EPN_T1 SuperT	APP_2021-05-
Event Data     Image: Visa CTs     YTs & CTs     YTs & CTs     100.0 %     100.0 %     1     Image: Visage: input 1       Visage: input 1     Visage: input 1     Visage: input 1     Visage: input 1     Visage: input 1       Visage: input 1     Visage: input 1     Visage: input 1     Visage: input 1     Visage: input 1       Visage: input 1     Visage: input 1     Visage: input 1     Visage: input 1     Visage: input 1       Visage: input 2     Visage: input 3     Visage: input 4     Visage: input 4     Visage: input 4       Visage: input 3     Visage: input 4     Visage: input 4     Visage: input 4     Visage: input 4       Visage: input 4     Visage: input 4     Visage: input 4     Visage: input 4     Visage: input 4       Visage: input 4     Visage: input 4     Visage: input 4     Visage: input 4     Visage: input 4       Visage: input 5     Visage: input 4     Visage: input 4     Visage: input 4     Visage: input 4       Visage: input 6       Software Update     Visage: input 7     Visage: input 6     Visage: input 6     Visage: input 6       About     Visage: input 7     Visage: input 6     Visage: input 6     Visage: input 6       Visage: input 7     Visage: input 7     Visage: input	Settings	¢.	-	Parameter	Range	Default Value	Group		Value	
Event Data       Image: Sol 18       Image: Sol 12       Image: Sol 12 <td></td> <td></td> <td></td> <td>Target voltage</td> <td>90.0 - 110.0 %</td> <td>100.0 %</td> <td>1</td> <td><math>\checkmark</math></td> <td>100.0 %</td> <td></td>				Target voltage	90.0 - 110.0 %	100.0 %	1	$\checkmark$	100.0 %	
Analogue Data       Image input 3         Analogue Data       Image input 3         Violage input 3       Violage input 3         Violage input 3       Date & Time         Image Analogue Data       Image Analogue Data         Image Analog	5	- tes 🗋		Bandwidth	±0.5 - 10.0 %	±1.5 %	1		±1.4 %	
Analogue Data       Image input 2         Votige input 2       Votige input 2         Votige input 2       Votige input 4         Votige input 4       Votige input 4         VT 1       Past tap time delay         U 2       Votige input 4         VT 3       Deabled, Down, Up/down         VT 4       Down         Current input 1       Current input 2         Current input 1       Current input 2         Current input 2       Down         Current input 2       Current input 2         Current input 2       UP of thig         Current input 2       UP of thig         Current input 3       Do 000 A         Vidage control mode       Enhanced TAP, So 1000 A         Wodag 2 w UDC rating       Wodag 2 wodag         Widage control mode       Enhanced TAP, Master of Jower         Binary inputs       Binary inputs         Binary inputs       Binary outputs         Binary outputs       Binary outputs         Binary outputs       Binary outputs	Event Data			Bandwidth 2 type	Off, Target change only, On	Off	1		Off	
Analogue Data  VIII  VIIII  VIIIII  VIIII  VIIII  VIIII  VIIII  VIIII  VIIII  VIIIII  VIIIIIIII				Bandwidth 2		±0.0 %	1		±0.0 %	
Votage piper dial       Votage piper dial       Votage piper dial       Votage piper dial       Past tab threshold       ±0.0%       ±2.0%       1       1       Down       1       1       Down       1       1       Down       1       1       Down       1	Analogue Data	0		Initial tap time delay	10 - 120 s	60 s	1		60 s	
Date & Time       Image: Constraint of the second sec	Analogue Data	•		Fast tap	Disabled, Down, Un/down	Down	1		Down	
Date & Time       Image: Control truct I and						±2.0 %			±2.0 %	
Software Update         V1 3 VT 4 Correct input 1 Correct input 2 Uncert input 2 VT 4 Correct input 2 Correct input 2 VT 4 Correct input 2 VT 4 VT 4 Correct input 2	Date & Time	0			3 - 120 s	55	1		20.5	
Software Update       Vr 4         About       DC       0.0 - 20.0 %       5.0 %       1       5.0 %         About       DC       Current input 1       Current input 2       Current input 3         C T tim       Voltage target adjus       No share       D0.0 %       0.0 %       1       D0.0 %         Voltage target adjus       No share       Draw of update for the update date for the update date for the update for the update date for		0			0.0 - 10.0 %	0.0 %				
Software Update       Vinder 1001 1       Current input 3         About       Vinder 1001 2       Current input 3         CT bin       CT bin       Vinder 1000 A         Yog Lage target days.       Tap changer         About       Vinder 1001 2       Use find LOC, 0.0 - 20.0 %       0.0 %         Yog Leve target days.       Tap changer       Vinder 1000 A       Vinder 1000 A         Vinder vinder days       Tap changer       Vinder 1000 A       Vinder 1000 A         Vinder vinder days       Tap changer       Vinder 1000 A       Vinder 1000 A         Vinder vinder days       Tap changer       Vinder 1000 A       Vinder 1000 A         Vinder vinder days       Tap changer       Vinder 1000 A       Vinder 1000 A         Vinder vinder       Tap changer       Vinder 1000 A       Vinder 1000 A         Vinder vinder       Tap changer       Saftware 1000 A       Vinder 1000 A         Vinder vinder       Tap changer       Saftware 1000 A       Vinder 1000 A         Vinder vinder       Tap changer       Saftware 1000 A       Vinder 1000 A         Vinder vinder       Tap Changer       Saftware 1000 A       Saftware 1000 A         Bandwidth 2 type       Off, Target change only, On       Off       Saftware 100 A <t< td=""><td></td><td></td><td></td><td>IDC</td><td></td><td></td><td></td><td></td><td></td><td></td></t<>				IDC						
About       Image: Space S	Software Update	×								
About							-	terms.		
About <ul> <li>L 1 time</li> <li>Wdg1 rev LDC rating</li> <li>Wdg2 rev LDC rating</li> <li>Seat Lap rev LDC rating</li> <li>Sev</li></ul>			-							
Voltage target adjus       Voltage target adjus       Wig2 for drating, 00 - 10000 A       Wig2 for drating, 00 - 10000 A       Wig2 for drating, 00 - 10000 A         Vid2 for the drate of the	About	=								
Tap Changer       Violage control mode       Enhanced TAPP, Master-follower       Enhanced TAPP       1       Enhanced TAPP         Annes       Explore delay       3-60 s       5 s       1       5 s         Endery Enplots       Binary Inputs       Disabled, Enabled       Disabled, Enabled       1       Disabled, Enabled         Milliamp outputs       Milliamp outputs       Target voltage       90.0 - 110.0 %       10.0 %       2       ✓       102.0 %         Brack and outputs       Target voltage       90.0 - 110.0 %       10.0 %       2       ✓       102.0 %         Brack and outputs       Target voltage       90.0 - 110.0 %       10.0 %       2       ✓       10.0 %         Brack and outputs       Target voltage       90.0 - 110.0 %       40.0 %       2       40.0 %         Brack and the 2 type       Off, Target notage only, On       Off       2       40.0 %       5         Brack and the 2 type       Detabled, Down, Up/down       Down       2       50 s       5         Relay configuration       East tup time delay       3-120 s       5 s       2       20 s         Fast tup time delay       3-120 s       5 s       2       20 s       20 s         Gest tup time delay <td< td=""><td></td><td></td><td>Voltage target adjus</td><td></td><td>5 51</td><td></td><td></td><td></td><td></td><td></td></td<>			Voltage target adjus		5 51					
Alarms       Follower delay       3 - 60 s       5 s       1       5 s         Follower delay       3 - 60 s       5 s       1       5 s         Follower delay       3 - 60 s       5 s       1       5 s         Follower delay       3 - 60 s       5 s       1       5 s         Follower delay       100.0 %       100.0 %       2       102.0 %         Brandwidth       ±0.5 - 10.0 %       ±1.5 %       2       ±1.4 %         Bandwidth       ±0.5 - 10.0 %       ±0.0 %       2       ±0.0 %         Bandwidth       ±0.5 - 10.0 %       ±0.0 %       2       ±0.0 %         Bandwidth       ±0.5 - 10.0 %       ±0.0 %       2       ±0.0 %         Communications       Relay configuration       Bandwidth 2       ±0.0 - 5.0 %       ±0.0 %       2       ±0.0 %         Fast tap       Deabled, Down, Up/down       Down       2       Down       Down       2       Down         Fast tap three/old       ±0.5 - 5.0 %       ±2.0 %       2       ±0.0 %       2       ±0.0 %         Fast tap three/old       ±0.5 - 5.0 %       ±2.0 %       2       ±0.0 %       2       ±0.0 %         Fast tap three/old       ±0.5 - 5.0 %							-			
Inputs and outputs         Exclusive tapping         Disabled, Enabled         1         Disabled         1           Impry houts         Impry houts         Manage outputs         90.0 110.0 %         100.0 %         2         ✓         102.0 %           Impry houts         Impry houts         Bandwidth         40.5 1.0.0 %         100.0 %         2         ✓         102.0 %           Impry houts         Bandwidth         2.0.5 1.0.0 %         11.5 %         2         Impry houts           Bandwidth         2.0.5 1.0.0 %         11.5 %         2         Impry houts         Impry houts           Bandwidth         2.0.5 1.0.0 %         11.5 %         2         Impry houts         Impry houts           Bandwidth         2.0.5 .0 %         40.0 %         2         Impry houts         Impry houts           Bandwidth         2.1 0.0 %         40.0 %         2         Impry houts         Impry houts           Bandwidth         2.0 0.5 %         60.5         2         Impry houts         Impry houts           Bandwidth         2.0 5 %         2.0 %         2.0 %         2.0 %         2.0 %           Fast tap threehold         4.0.5 %         5.5 %         2         2.0 %         2.0 % <td< td=""><td></td><td></td><td>Alarms</td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td></td<>			Alarms	-						
Biney i pupid           Biney i pupid           Biney i pupid           Milliamp outputs           Timer delays           Budoter grouping           Communications           Reley configuration           Reley configuration			Inputs and outputs							
Branky outputs         Bandwidth         ±0.5 - 10.0 %         ±1.5 %         2         ±1.4 %           Milliong outputs         Timer delays         Off, Target change only, On         Off         2         0         0.0 %           Budbar grouping         Communications         Bandwidth 2         40.0 - 5.0 %         40.0 %         2         0         0.6 %           Relay configuration         Relay configuration         Disabled, Down, Up/down         Down         2         0         0.0 %           Fast tap threedelay         3 - 120 s         5 s         2         0         20 %           Fast tap threedelay         3 - 120 s         5 s         2         0.0 %         0.0 %			Binary inputs							
Milliang outputs       Bandwidth 2 type       Off, Target change only, On       Off       2       Off         Buckar grouping       Buckar grouping       Communications       800 %       2       60 %       40.0 %       2       60 %         Relay configuration       Relay configuration       Deabled, Down, Up/down       Down       2       Down       Down         Fast tap threshold       40.5 % 5.0 %       42.0 %       2       42.0 %       42.0 %         Generator bias       0.10.0 %       5.5 %       2       0.0 %       0.0 %			Binary outputs							
Timer delays         Bandwidth 2         40,0 %         2         40,0 %           Bandwidth 2         40,0 %         2         40,0 %         2         40,0 %           Communications         Relay configuration         Initial tap time delay         10 + 120 s         60 s         2         60 s           Relay configuration         Relay configuration         Deabled, Down, Up/down         Down         2         Down           Fast tap time delay         3 + 120 s         5 s         2         2         42.0 %           Fast tap time delay         3 + 120 s         5 s         2         20 s         20 s			Miliamp outputs					d		
Bubber grouping         Dividial tap time delay         10 - 120 s         60 s         2         60 s           Communications         Relay configuration         Past tap         Diabled, Down, Up/down         Down         2         0         Oown           Fast tap threshold         40.5 - 5.0 %         42.0 %         2         2.0 %         2.0 %         2.0 %           Fast tap threshold         30.5 - 50 %         5.5 %         2         0.0 %         2.0 %           Generator bias         0.0 - 10.0 %         0.0 %         0.0 %         0.0 %         0.0 %			Timer delays							
Communications     Fast tap     Disabled, Down, Up/down     Down     2     Down       Fast tap threshold     ±0.5 5.0 %     ±2.0 %     2     ±2.0 %       Fast tap threshold     ±0.5 5.0 %     ±2.0 %     2     ±2.0 %       Generator bias     0.0 10.0 %     0.0 %     2     0.0 %			Busbar grouping							
Meay computation         Fast tap threshold         ±0.5 - 5.0 %         ±2.0 %         2         1 ±2.0 %           Fast tap time delay         3 120 s         5 s         2         20 s           Generator bias         0.0 - 10.0 %         0.0 %         2         0.0 %			Communications							
Fast tap time delay         3 - 120 s         5 s         2         20 s           Generator bias         0.0 - 10.0 %         0.0 %         2         0.0 %			Relay configuration							
Generator bias 0.0 - 10.0 % 0.0 % 2 0.0 %										
Toole Unsaved damps										
				Generator bias	0.0 - 10.0 %	0.0 %	2		0.0 %	
	Tools	•		Load From File Save To Fi	e Compare With Relay Load From Relay	Apply To Relay			Unsav	ed changes ed from defa

#### 5.1.2 Settings selection

You can choose to show a particular setting or all the settings from the selected menu using 'Parameter' combo box. Also, you can choose to show selected setting(s) values from a particular setting group or all setting groups using 'Group' combo box, see Figure 10. Setting groups functionality is explained in settings viewer/editor (5.1.3) description below.

#### Figure 10:Settings selection view

Parameter : All	~	Group : Al	~		
Parameter All Inter tap time del	av		Default Value	Group	Value
Inter tap time d Tap pulse time	·	s	Automatic	С	Automatic
Tap pulse time Number of tap po		5.00 s	Automatic	С	Automatic
Tap operation ti Minimum tap posit	tion		5 s	С	5 s
Number of tap p Tap position indic	ition		17	С	17
Minimum tap pos Number of conse	cutive transfer taps		1	1	1
Maximum tap po Extra bottom rsto	or equiv to		17	1	17
Tap position indi TPI mA input valu	equiv to	code, Binary, Mi	llia Resistor	С	Resistor
Number of cons <mark>,</mark> TPI mA input valu	e 2		0	С	0
Extra bottom rs Disable lockout fo	eme r tap incomplete	s	0.00 taps	С	0.00 taps
Extra top resiste Disable lockout fo	r t/c runaway	s	0.00 taps	С	0.00 taps
TPI mA input value 1	Tap0 - 39 : 0.0 mA -	25.0 mA	Tap0:0.0 mA	С	Tap 0:0.0 mA
TPI mA input value 2	Tap0 - 39 : 0.0 mA -	25.0 mA	Tap17:20.0 mA	С	Tap 17:20.0 mA
Tap changer scheme	Basic, Step-by-step		Basic	С	Basic
Disable lockout for tap incompl	No, Yes		No	С	No
Disable lockout for t/c runaway	No, Yes		No	С	No
Minimum tap position	1 - 39		1	2	1
Maximum tap position	1 - 39		17	2	17
Minimum tap position	1 - 39		1	3	1
Maximum tap position	1 - 39		17	3	17
Minimum tap position	1 - 39		1	4	1
Maximum tap position	1 - 39		17	4	17
Minimum tap position	1 - 39		1	5	1
Maximum tap position	1 - 39		17	5	17
Minimum tap position	1 - 39		1	6	1
Maximum tap position	1 - 39		17	6	17
Minimum tap position	1 - 39		1	7	1
Maximum tap position	1 - 39		17	7	17



#### **Source Information**

A label on the top right corner shows information about the source of displayed settings.

- ▲ **Current Relay settings** Displayed settings are loaded from the relay.
- ▲ **File name** Settings are loaded from a file and file name is displayed.

#### 5.1.3 Settings Viewer/Editor

For each setting, the name, range, default value, current settings value and its group number are displayed. The editing mode is activated when the user clicks the desired value to be altered. The value editor will then open as seen in Figure 11.

#### Figure 11:Setting value editor

Group	Value	
1	100.0 %	*
1	±1.6 %	
1	<del>40 s</del> - + X	
1	Down	
1	±2.0 %	
1	5 s	

You can select the new value from the combo box, or by typing in the new value and pressing enter. Rejecting the entered value can be done by clicking the 'cross' icon or pressing the 'Esc' key. After this, the value editor will be closed.

#### Figure 12:Changing a setting value in a group

Varameter : Target voltage v Group : v							
Parameter	Range	Default Value	Group		Value		
Farget voltage	90.0 % - 110.0 %	100.0 %	1		100.0 %		
Farget voltage	90.0 % - 110.0 %	100.0 %	2	$\checkmark$	99.5 %		
larget voltage	90.0 % - 110.0 %	100.0 %	3		100.0 %		
arget voltage	90.0 % - 110.0 %	100.0 %	4		100.0 %		
arget voltage	90.0 % - 110.0 %	100.0 %	5		100.0 %		
arget voltage	90.0 % - 110.0 %	100.0 %	6		100.0 %		
arget voltage	90.0 % - 110.0 %	100.0 %	7		100.0 %		
arget voltage	90.0 % - 110.0 %	100.0 %	8		100.0 %		

If the value of a setting or its group is changed, the setting row will change to a light-yellow color to signify an unsaved setting change. Once saved, this will turn green, as seen in Figure 11, to highlight the settings that have been altered from default. If any setting has been converted this is highlighted in red, as viewed in Figure 13.



#### Figure 13:Colour references

Volt offset F1 pickup delay	0 s - 7200 s	60 s	5	60 s	
Volt offset F1 reset time	Disabled, 30 s - 7200 s	60 s	5	60 s	
Volt offset F1 offset	-10.0 % - +10.0 %	-3.0 %	5	-3.0 %	
Volt offset F1 pickup freq	Disabled, 45.00 Hz - 65.00 Hz	Disabled	6	50.00 Hz	
Volt offset F1 dropoff freq	45.00 Hz - 65.00 Hz, Disabled	46.00 Hz	6	46.00 Hz	<b>*</b>
Load From File Save To File	Compare With Relay Load From Relay	Apply To Relay			Converted Different from Relay Changed from default

#### Figure 14:Changed setting value

Parameter : All	✓ Group : ✓			perTAPP_8-3-1 restored to default
arameter	Range	Default Value	Group	Value
arget voltage	90.0 % - 110.0 %	100.0 %	1	100.0 %
andwidth	±0.5 % - 10.0 %	±1.5 %	1	± 1.5 %
andwidth 2 type	Off, Target change only, On	Off	1	Off
andwidth 2	±0.0 % - 5.0 %	±0.0 %	1	±0.0 %
nitial tap time delay	10 s - 120 s	60 s	1	60 s
ast tap	Disabled, Down, Up/down	Down	1	Down T to X
ast tap threshold	±0.5 % - 5.0 %	±2.0 %	1	Disabled
ast tap time delay	3 s - 120 s	5 s	1	Down Up/down
enerator bias	0.0 % - 10.0 %	0.0 %	1	0.0 %

The value editor only allows you to select a value within the range from the drop-down menu as shown in figure 14. The editor also allows you to undo an executed command. Trying to add a value outside the range is not permissible and would return to its original setting.

#### 5.1.3.1 Setting groups and customization

The SuperTAPP SG relay allows up to eight groups of settings to be saved so that a relay can be rapidly configured for a new application. Certain settings can be customized for a particular group. If a setting is customizable, its groups number will be between 1 and 8 otherwise it will be 'C' (classed as common in all setting groups). To change a settings value in a particular group, tick ( $\checkmark$ ) the checkbox which is adjacent to the group number as seen in Figure 12.

#### 5.1.4 Source Information

A label on the top right corner shows information about the source of displayed settings.

- ▲ Current Relay Displayed settings are loaded from the relay. settings
- File name Settings are loaded from a file and the file name is displayed.

#### 5.1.5 Control-Panel

There are several buttons at the bottom of the application window, as previously seen in Figure 8

- ▲ Load From File Loads the saved setting values from a file. It opens a standard windows dialog box for file selection.
- ▲ Save To File Saves the currently loaded or downloaded setting values to a file. It opens a standard windows dialog box to select a destination folder,



name, and type of file. The dialog suggests a filename according to current date and time. The default file type suggested by dialogue is ".tpps" (tool specific file type) but you can also choose to save it as an Excel file. If the settings values are not loaded or downloaded, this button is disabled.

- ▲ Compare with Relay
  Compares the currently loaded setting values with setting values in the connected relay. Settings loaded from a file are removed if they do not exist in the relay, due to software or hardware variations. Also, any settings in the relay which do not exist in the loaded file are set to default values. A Range check is also performed against these values. If there are significant differences, the user is informed about them as Figure 15 illustrates. If a setting value in the application is different to the setting value in the relay, then this setting will be highlighted in yellow. If a setting parameter has been converted this will be highlighted in red.
- ▲ Load From Relay Downloads the setting values from the relay that is currently connected. If there is no relay connection, this button is disabled.
- ▲ Apply to Relay Clicking this button uploads the settings to the relay. The tool compares the existing relay settings and the edited settings (as done in compare with relay) before applying and warn the user about significant changes. If setting values are loaded and the relay is connected, this button becomes active.



	sungs (Setting		ustomisation	n e.t.c) are different in l	baded file an			
Menu		Setting Name		Old Value		New Value		^
Binary inputs		Volt target offset A1 (wa		1,3,5,7,9,11,13		1,3,5		
Binary inputs		Volt target offset A3 (wa	as	2,6		2		_
Binary inputs		Volt target offset B4		11-12		not configured		_
Binary inputs		Alt settings group 3		11		not configured		_
Binary inputs		Busbar CB 1 closed		12		not configured		- 1
Binary outputs		Relay healthy		5		not configured		_
Binary outputs		Relay in SCADA		8		not configured		_
Binary outputs Tap changer runaway			9		not configured		~	
New Settings	(Settings didn't exist in loaded file so they are		they are set	to default values)				
Menu	Setting Name		Value		Range		^	
Voltage target	Bandwidth 2 type		Off		Off, Target	Off, Target change only, On		
Voltage target	Bandwidth 2		±0.0 %		±0.0 % - 5.	±0.0 % - 5.0 %		
Voltage target	Voltage control m	ode	Enhanced T/	Enhanced TAPP		Enhanced TAPP, Master-follower		
Voltage target	Follower delay		5 s		3 s - 60 s			
Voltage target	Exclusive tapping	)	Disabled		Disabled, I	Enabled		
Network	Nominal system H	IV voltage	33.0 kV		3.0 kV - 500.0 kV			
Network	Controlled voltag	e location	LV		LV, HV	LV, HV		
Removed Set	ttings (Setting	s not supported by re	lay)					
Menu	Setting Name		Number					
Tap changer	Highest tap gives	1	46					

#### Figure 15:Differences between loaded settings and relay settings

#### 5.1.6 Editing Binary I/O

Editing a binary input or output can be done by clicking on the grid corresponding to the I/O parameter as shown in Figure 16. Using 'Enter' and arrow keys on your keyboard can also be used to navigate/change values in the settings values window.



		Firmware Version :	Boot	loader Versi	n:		Rela	y Date	e/Time	2:01	l-Jan	-190	0 00	:00:	00			Not	Connected
Voltage target	Parameter :	All	~	Group :	All		~	1											
Network	Parameter				1	2	3	4 5	6	7	8 9	10	11	12	13 1	4 15	i Va	10	
Transformer	Invert input					-	-					**	**	**				un <u>u</u>	
VTs & CTs	Used by comms																		
Voltage input 1	SCADA auto ctr																		
Voltage input 2	SCADA auto co																-		
Voltage input 3																	-		
Voltage input 4	SCADA raise ta																		8 9 10 11 12 13 14 15
VT 1	SCADA lower ta	+									X								
VT 2	Block SCADA ct																		Ok Cancel
VT 3	Wdg 1 prep sw																-1.		OK Cancer
VT 4	Wdg 1 prep sw/																		
Current input 1	Wdg 2 prep sw																		
Current input 2	Wdg 2 prep sw/	/out rst																	
Current input 3	Tap block																		
CT trim	Volt target offs																		
Voltage target adjustme	Volt target offs																		
Tap changer	Volt target offs																		
Alarms	Volt target offs	et A4																	
Network services	Volt target offs	et B1																	
Tap stagger	Volt target offs	et B2																	
Frequency based vol	Volt target offs	et B3																	
Load based voltage	Volt target offs	et B4																	
Frequency based tri	Volt target B re	set																	
Inputs and outputs	Volt target incre	ement																	
Binary inputs	Volt target decr	rement																	
Binary inputs Binary outputs	Target inc/dec r	reset																	
	Load offset L1	enable																	
Milliamp inputs	Freq offset F1	enable																	
Miliamp outputs Timer delays	Freq trip enable																		

#### Figure 16:Editing a Binary I/O in settings

#### 5.1.7 Conversion Report

A conversion report is available to be viewed when you use the compare with relay function. A Conversion report as seen in Figure 17, gives you a list of all the settings that will be Removed, Added or Changed on a setting file when loaded. A conversion is done to make the setting file compatible with whichever version of SuperTAPP SG in use.

- ▲ Settings Removed These are settings parameters which have not got the same parameter as in the relay. If a newer version setting file is trying to be uploaded to an earlier version of relay, then expect to see these.
- Settings Added These are settings parameters that are present in the relay, but not on the setting file you are trying to load. This is likely when the relay is of a newer version than the setting file.
- ▲ **Settings Changed** These are displayed when a setting value is different in the file than on the relay. These should be the most common form in the report.



#### Figure 17:Conversion Report

```
Current input 2 -> Location :
Current input 3 -> Location :
                                                   LV
Tap stagger -> Tap stagger controlled by :
Tap stagger -> Tap stagger 1 offset : +5.0 %
                                                                            Current
Tap stagger -> Tap stagger 2 offset :
Tap stagger -> Tap stagger 3 offset :
                                                              +10.0 %
                                                              +15.0 %
                                                             +20.0 %
 Tap stagger -> Tap stagger 4 offset :
Frequency based voltage offset -> Volt offset F1 pickup freq : Disabled
Frequency based voltage offset -> Volt offset F1 dropoff freq : 46.00 Hz
 Frequency based voltage offset -> Volt offset F1 pickup delay : 60 s
 Frequency based voltage offset -> Volt offset F1 reset time : 60 s
 Frequency based voltage offset -> Volt offset F1 offset :
                                                                                                     -3.0 %
Load based voltage offset -> Load offset capacity :
Load based voltage offset -> L1 pickup load : 94.5 %
Load based voltage offset -> L1 dropoff load : 90.0 %
                                                                                       30.0 MVA
Load based voltage offset -> L1 reset time : 90
Load based voltage offset -> L1 voltage offset :
                                                                           900 s
                                                                                         -5.0 %
Frequency based tripping -> Pickup frequency 1 :
Frequency based tripping -> Pickup frequency 2 :
                                                                                        Disabled
Frequency based tripping -> Pickup frequency 2 :
Frequency based tripping -> Pickup frequency 3 :
Frequency based tripping -> Pickup frequency 4 :
Frequency based tripping -> Activation delay 1 :
Frequency based tripping -> Activation delay 2 :
Frequency based tripping -> Activation delay 3 :
Frequency based tripping -> Activation delay 4 :
Frequency based tripping -> Activation delay 4 :
Binary inputs -> Input
                                                                                        Disabled
                                                                                       Disabled
                                                                                       Disabled
                                                                                       15.00 5
                                                                                        15.00
                                                                                                  5
                                                                                       15.00
                                                                                        15.00
Frequency based tripping -> Activation reset time : 30.00 s
Binary inputs -> Load offset L1 enable :
Binary inputs -> Freq offset F1 enable :
Binary inputs -> Freq trip enable :
 Binary inputs -> Freq trip activate :
Binary inputs -> Tap stagger S1 activate :
Binary inputs -> Tap stagger S2 activate :
 Binary inputs -> Tap stagger S3 activate
Binary inputs -> Tap stagger S4 activate
Binary outputs -> Load offset L1 active :
Binary outputs -> Freq offset F1 active :
Binary outputs -> Wdg 1 CB trip : 1
 Binary outputs -> Wdg 1 CB close :
                                                                2
 Binary outputs -> Wdg 2 CB trip :
Binary outputs -> Wdg 2 CB close :
SETTINGS ADDED:
Binary inputs -> Reject AC input :
SETTINGS CHANGED:
VT 1 -> Ratio :
                           (format), I changed.
             Old default: 11.0 kV: 110.0 V,
                                                               New default: 11.0 kV : 110.0 V
             Old value: 11.0 kV: 110.0 V, New value: 11.0 kV : 110.0 V
```

#### 5.1.8 Printing Settings File in Excel

The settings file can be saved in excel format and gives users the possibility to print the settings sheets for site use. This can be performed by clicking the save settings button which brings up the standard 'save as' window. This then gives the option of saving in 2 formats, 'SuperTAPP SG settings' and 'Excel'. Then just print from Excel

#### 5.2 Settings File Info

The feature to capture Relay information when saving its settings to a file is introduced with PC application version 3.3.0.

The Settings File Info view consists of the following parts, referring to Figure 18:

1. Settings File Info tab [dynamic]



The Settings File Info tab will appear automatically when a setting file created with PC Application version 3.3.0 or newer is loaded onto the application using the "Load From File" button in the Settings tab view.

2. Setting file

The setting file's name and full path location.

3. PC Application version info

This is a note which indicates the version of the PC application used to save the loaded setting file.

4. Relay Information

This section contains basic information related to the Relay which the settings were saved from. The information captured is the Relay's name, software version, product and serial numbers.

5. Relay Hardware Configuration

This section shows the cards configured in each of the Relay's slot at the time the settings were saved.

lay Name : Stra	ngeway	sT11	Software Vers	ion : 8.5 Bootloader Version	n : Relay Date/Time : 18-Feb-20	17 01:15:37	Application Mode Connected
ttings	۰	Setting file : C:\Users (This setting file was save	\fhaldric\Documents\Fundamenta ed on 27 October 2021 at 11:04:54 usir	als\SuperTAPP_SG_settings\Settir g SuperTAPP SG tool version 3.3.0.)	ngFilesUsedToTest\CliftonJunctionT1	1_2021-08-23 1114 V8.	4_orgSet8.4_to_SGver8.5_pcAppv3.3.tpps
		Relay Information:		Relay Hardware Configuration:			
ttings File Info	0	IED Name	CliftonJunctionT11	Slot A	PSU IO card		
	_	Software Version	8.5	Slot B	Digital IO card		
ent Data	-	Product Number	FP1034-AG00000PDS-L05	Slot C	Digital IO card		
	100	Serial Number	SN1034-201902-0024	Slot D	Empty		
				Slot E	Empty		
alogue Data	$\odot$	4		Slot F	Empty		
				Slot G	Miliamp IO card		
	-			Slot H	TPI card		
te & Time	0			Slot I	VT + CT inputs card		
				Slot J	Comms card (Inter relay CAN +		
ftware Update	×			5			
bout	Ξ						
ols							
	÷						

#### Figure 18:Settings File Info view



#### 5.3 Event Data

The Event Data function as seen in Figure 18, allows you to copy event data files from SuperTAPP SG storage to a hard disk. Enter the name of a destination folder into the 'Save Path/Location' field. You can also use the 'Browse' button to select.

Then select a file for copying in the grid view. You can select multiple files in the grid view using the 'Ctrl' or 'Shift' key. You can select a range of files by date. Select 'Start Date' and 'End Date' values then press the 'Apply' button. The files that correspond to the range of dates will be selected in the grid view.

Select the 'Download' button to start the copying process. The progress bar displays the advancement through the operation as displayed in Figure 19.

Relay Name : SuperTAPP         Software Version : 9.2         Relay Date/Time: 24-Feb-2017 09:06:46           Settings	Application Mode Connected
Download Path/Location: U:Public/RelayTest      Event Data     Start Date: 01/01/2017      End Date: 11/03/2021     Analogue Data     Ottor modified     Size     201270101.TNT     02/01/2017 12:15     TS 88	
Name         Date modified         Size           20170101.TVT         02/01/2017 12:15         15 K8 ^           20170102.TVT         02/01/2017 02:15         2 K8	
Analogue Data 💿 20170101.TXT 02/01/2017 12:15 15 K8 *	
Analogue Data 😮 20170102.TXT 02/01/2017 09:15 2.KB	
- 201/0102.1X1 02/01/201/ 09:15 2 KB	
20170104.TXT 04/01/2017.11:00 2/KB	
Date & Time O 20170105.TXT 06/01/2017 07:14 3KB	
20170106.TXT 06/01/2017 08:33 1KB	
20170107.TXT 07/01/2017 11:48 4 KB	
Software Update 🗙 20170108.TXT 09/01/2017 12:12 3 KB	
20170109.TXT 09/01/2017 02:46 2.KB	
20170112.TXT 12/01/2017 10:22 2.KB	
About 20170113.TXT 13/01/2017 09:44 1KB	
20170114.TXT 14/01/2017 02:18 2.KB	
20170216.TXT 16/02/2017 04:36 3 KB	
20170217.TXT 17/02/2017 10:31 2 KB *	

#### Figure 19:Event data view

#### Figure 20:Event download Progress bar

Copying (65%) M:\events\20180114.TXT	Pause	Cancel	Show Queue
--------------------------------------	-------	--------	------------

If a SuperTAPP SG is not connected, the controls of this view will be disabled.



#### 5.4 Analogue Data

The Analogue Data function allows you to copy analogue data files from SuperTAPP SG storage to a hard disk. The operations of this function are the same as the Event Data function. See the previous section for a description of the use of this function. Analogue data is formatted as an excel file and stores the information in the same timestamped priority as in the event files.

#### Figure 21: Analogue Data View

Relay Name : SuperTAPP         Software Version : 9.2         Relay Date/[Time : 24-Feb-2017 09:05:26         Application Mod           Setting:         Image: Download Path/Location:         U/Public (Relay Test:         Browse           Event Data         Image: Date modified         Set         Browse           Analogue: Data         Image: Date modified         Set         Download Path/Location:         U/Public (Relay Test:         Browse           Date B Time:         O         Date:         010/12017 09:00:20         22/240         Apply           Date:         010/12017 09:00:20         22/240         Set         Date:         010/12017 09:00:20           Date:         010/12017 09:00:20         22/240         Set         20170101.CSV         040/12017 11:90         965378           Date:         010/12017 09:00:30         65378         050/12017 11:90         91658         0100000000000000000000000000000000000	le Connected
Download Path/Location:         U: Y-Ubic Relay Test         Browse           Event Data         Start Date:         01/01/2017         End Date:         11/03/2021         Apply           Hame         Date modified         Size         30/07/002/CSV         02/01/2017 09:30         12,450 08         Apply           Analogue Data         O         01/01/2017 09:30         12,450 08         30/01/2017 09:30         922 46         30/01/2017 09:30         923 46         30/01/2017 11:59         653 1/80         51/8         0           Date & Time         O         05/01/2017 11:59         653 1/80         51/8         0	
Event Data         Start Date:         01/01/2017         End Date:         11/03/2021         Apply           Analogue Data         O         20170101.CSV         01/01/2017 09:30         12,450 KB         Apply           Date & Time         O         20170101.CSV         02/01/2017 09:30         12,450 KB         Apply	
Name         Date modified         Size           20170101.CSV         01/01/2017.09:30         12,450 KB +           20170102.CSV         02/01/2017.09:30         922 KB           20170102.CSV         02/01/2017.09:30         922 KB           20170105.CSV         04/01/2017.11:59         653 KB           Date is. Time         0         05/01/2017.11:50         916 KB	
Analogue Data	
Analogue Data 20170102.CSV 0201/2017 09:20 922.08 20170104.CSV 04/01/2017 11:59 653 K8 Date & Time O 20170105.CSV 05/01/2017 11:50 916 K8	
All TOTUDE_CSV         Output/TOT 15:9         922 88           20170 10.5 CSV         0.90/1/2017 11:99         653 48           Date & Time         0         20170 10.5 CSV         0.5/01/2017 11:59	
Date & Time 0 20170105.CSV 05/01/2017 11:50 916 K8	
Date a line	
20170106.CSV 06/01/2017 08:33 6 KB	
20170107.CSV 07/01/2017 11:59 380 KB	
Software Update 🗙 20170108.CSV 08/01/2017 09:28 351 KB	
20170109.CSV 09/01/2017 02:52 376 KB	
20170112.CSV 12/01/2017 10:22 18 KB	
About 20170113.CSV 13/01/2017 09:44 6 KB	
20170114.CSV 14/01/2017 02:18 12 KB	
20170216.CSV 16/02/2017 04:36 1,204 KB	
20170217.CSV 17/02/2017 10:31 802 KB *	

#### 5.5 Date & Time

The PC tool periodically reads the date and time from the relay, which it displays on the relay information bar as described in 4.2. This function allows the setting of the date & time for the connected relay, this is acquired from following sources:

*	Network	Gets the time form NTP server. You can sync relay time with this time source by selecting 'Network Date/Time' radio button and clicking on 'Set Date/Time' button which is next to it.
*	Network Current PC	You can set your current PC time to the relay by selecting 'Current PC Date/Time' radio button and clicking on 'Set Date/Time' button next to it.
*	Custom Date and Time	Also, you can select 'Custom Date/Time' radio button which will let you enter date in the 'Date' field and time in the 'Time' field. You can then send this to the relay by clicking on 'Set Date/Time' below it.



SuperTAPP SG			- 🗆 X
Relay Name : SuperTAPP	Software Version : 9.2	Relay Date/Time: 24-Feb-2017 09:03:44	Application Mode Connected
Settings	Network Date/Time 02-Nov-2021 20:35:47	Set Date/Time	
Event Data		Set Date/Ime	
Analogue Data 📀	Current PC Date/Time     02-Nov-2021 20:35:47	Set Date/Time	
Date & Time 🕐	O Custom Date/Time		
Software Update	Date: Fri 24/02/2017		
About 🚍	Set Date/Time		
Tools 🕨			
Exit 🛨			

#### Figure 22:Date and time view

If a SuperTAPP SG is not connected, the controls of this view will be disabled.



#### 5.6 Software Update

The PC tool reads the current software version of the relay and displays it in the relay information bar as described in 4.2. If the SuperTAPP SG is operating in its normal (AVC) mode, the controls in this function displays are disabled.

If you want to update the SuperTAPP SG software, you should select 'Upgrade software' in the Relay configuration settings menu on the SuperTAPP SG. The SuperTAPP SG will then reboot into bootloader mode, and the 'Load Software File' button in this menu will become active. Click this button to browse and load software file or you can alternatively drag and drop a file here as well. Finally click the 'Send Software to Relay' button to start the update process. The progress bar displays the advancement through the process. After the sending of the software is completed, the SuperTAPP SG will automatically reboot and return to its normal mode.

SuperTAPP SG				– 🗆 ×
Relay Name : CliftonJunctionT11	Software Ve	ersion : 8.5 Bootloader Version :	Relay Date/Time: 17-Feb-2017 22:38:52	Application Mode Connected
Settings	are File Name:	Load Software Fil	Drag and drop software file here	
Event Data	ire nie Name:	Load Software Pil	Urag and drop software tile here	
Analogue Data 🛞				
Date & Time 🕚	Start Software Update			
Software Update 🗙				
About 📃				
Tools 🕨				
Exit 🕂				

#### Figure 23:Software Update view



#### 5.7 About

This view displays the name, copyright and current version of application.

#### Figure 24:About view

Relay Name : Supe	TAPP	Software Version : 9.2	Relay Date/Time: 24-Feb-2017 09:03:01	Application Mode Connected
velay walle : Super		30104012 YE SULT, 5.2	Relay Date/fille . 24-160-2017 05:05:01	Application Prote Connected
Settings	۰	<b>A</b>		
Event Data	<b> <b> </b></b>	$\checkmark$		
Analogue Data	SuperTAPP SG			
Date & Time	Copyright © 20	21 Fundamentals Ltd		
Software Update	X Version: 3.3 Build date: 01 N	lovember 2021 13:09:43		
About	Ξ.			
Tools	20211102.log Exceptions - 20211012.bt Exceptions - 2021101.bt 2021101.bg Exceptions - 2021102.bt 2021007.bt 2021007.bt 2021007.bt 2021007.bt 2021007.bt 2021025.bg 20211020.bg			



#### 5.8 Locations

# United Kingdom and Europe

### Fundamentals Ltd

#### Swindon

Unit 2, Hillmead Enterprise Park Marshall Road, Swindon Wiltshire, SN5 5FZ United Kingdom Tel: +44 (0)1793 847163 Fax: +44 (0)1793 847245 www.fundamentalsltd.co.uk tech@fundamentalsltd.co.uk

#### Belfast

City East Business Centre 68-72 Newtownards Road Belfast, BT4 1GW United Kingdom

# Australia

#### Fundamentals Australia Pty Ltd

#### Sydney

Unit 11, 25 Stoddart Road, Prospect NSW 2148 Tel: +61 (0)2 9896 3221 www.fundamentalsltd.co.uk/australia

# Value Added Resellers

## Power Economy Middle East Co. LLC

#### U.A.E.

Industrial City of Abu Dhabi P.O.Box 6072 Tel: +971-(0)2-5501077 Email: sales@powereconomy.net

#### JET Engineering Solutions Sdn. Bhd.

#### Malaysia

(1284649-K) R-03A-22, Emporis, Persiaran Surian, Kota Damansara, 47810 Petaling Jaya, Selangor. info@jetengsolutions.com