

SERIAL LINE ROUTER

INT217/INT264

User's Manual

3460.500.02

Version 1.2

Edition November 2013

Caution and safety precautions

- Never use any other charger than the supplied or a type approved by Swiss Timing. This could destroy the battery, cause damage to unit, and possible cause personal injury due to fire or/and electrical shock.
- Never bypass a power cord ground lead by breaking off the ground pin, or by using inappropriate extension cords or adapters.
- Never plug a power cord into the AC power source until you have made sure that all installation, cabling and power levels, are proper, and that the applicable procedures in this manual have been followed.
- Protect the equipment against splashing, rain and excessive sun rays.
- Never use the device if it is damaged or insecure.
- Verify the selection of the power distribution.
- Verify that the voltage quoted on the rating plate is the same as your voltage. Connect the appliance only to power sockets with protective earth. The use of incorrect connection voids warranty.
- This program may be modified at any time without prior notification.
- Do not open the case; there is nothing that needs servicing inside it. Nevertheless, if the case must be opened, you must call for some qualified personnel. The power supply cable must be disconnected before opening the case.
- During the transport of all Swiss Timing equipment delivered with a reusable carry case, the said case should be used at all times. This is imperative to limit the damage, such as shocks or vibration that can be caused to the units during transport.
- The same cases should also be used when returning equipment to Swiss Timing for repair. Swiss Timing reserves the right to refuse all guarantees if this condition is not fulfilled.
- If the installation includes a horn, be sure to maintain a sufficient security distance from the public.

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Environment



This symbol indicates that this product should not be disposed with household waste. It has to be returned to a local authorized collection system. By following this procedure you will contribute to the protection of the environment and human health. The recycling of the materials will help to conserve natural resources.

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TABLE OF CONTENTS

1	INTRODUCTION.....	1
2	INSTALLATION.....	2
2.1	Cabling	2
2.2	Use	3
2.3	First installation.....	4
2.3.1	Install FTDI driver	4
2.3.2	Computer connection	4
2.3.3	Assign default COM numbers.....	4
2.4	INT217/INT264 configuration	5
3	ETHERNET CONFIGURATION	6
3.1	Setup:	6
3.2	Computer connection:.....	7
4	INT 217 CONFIGURATOR SOFTWARE.....	8
4.1	Starting <i>INT 217 Configurator</i> software	8
4.2	Software overview	8
4.3	Minesweeper	9
4.4	Basic uses	10
4.4.1	Programming INT217/INT264 with existing configuration files.....	10
4.4.2	Reading and saving INT217 configuration.....	10
4.4.3	Modifying the INT217 configuration	10
4.5	Monitoring.....	11
4.5.1	Monitoring configuration	11
4.5.2	Monitoring use.....	12
5	PROPERTIES.....	13
5.1	Standard Operating Conditions.....	13
5.2	Electrical characteristics	13
5.3	Mechanical characteristics	13
5.4	Connectors	14

6 MAINTENANCE AND PROTECTION 16
6.1 FAQ..... 16

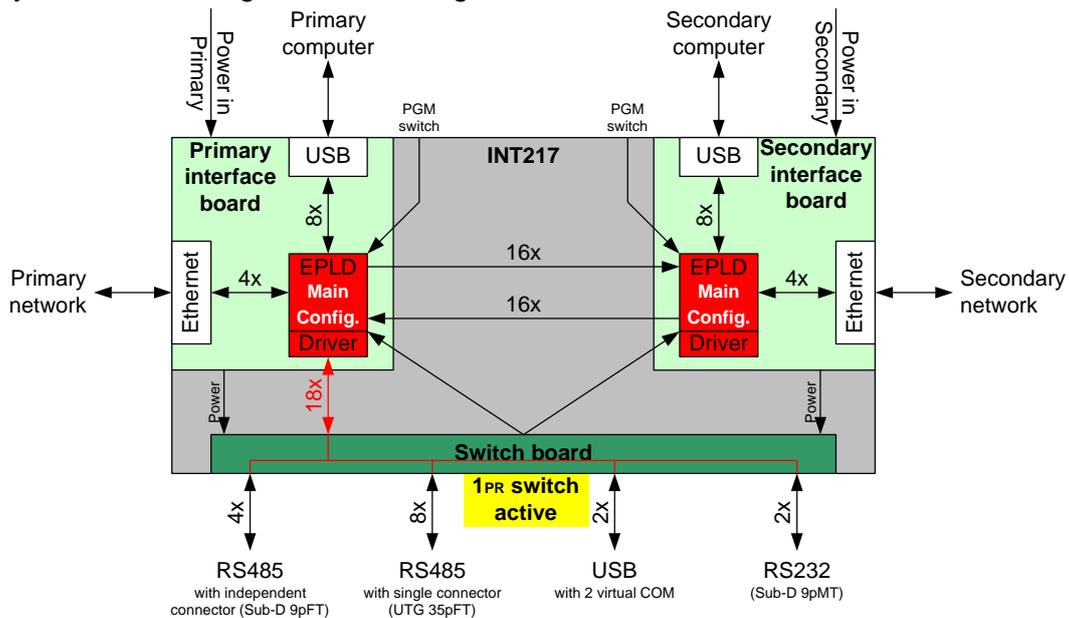
7 APPENDIX..... 17
7.1 Version history..... 17

1 INTRODUCTION

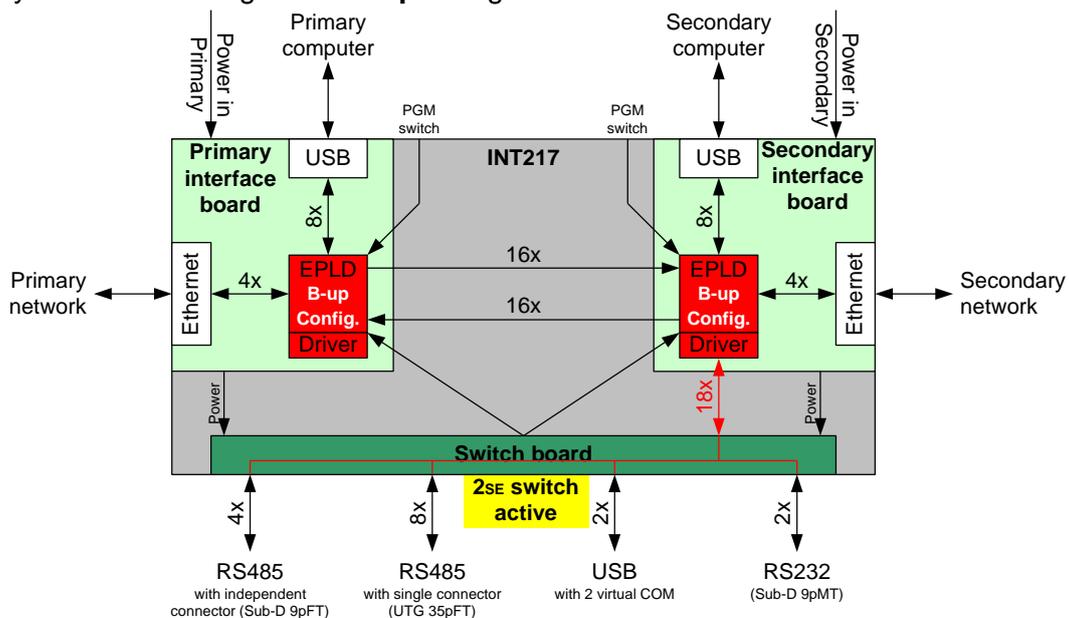
INT217/INT264 is a distributor and converter of serial lines; it also creates virtual serial line for computer connected by USB or Ethernet. Only difference between INT217 and INT264 is connectors on the rear face.

INT217/INT264 includes a primary and a secondary system; commutation between systems is done easily by pushing a button.

When **primary system is enabled**, the drivers of the primary board are used; primary and secondary boards are using the **main** configuration.



When **secondary system is enabled**, the drivers of the secondary board are used; primary and secondary boards are using the **backup** configuration.



Primary and secondary boards have each an Ethernet connection with 4 virtual COM (each of them can be simultaneously addressed by up to 4 different computers) and a USB connection with 8 virtual COM. The switch board has 12x RS485 serial lines, 2x RS232 serial lines and 2x USB connections with each 2 virtual COM. All COM are bidirectional.

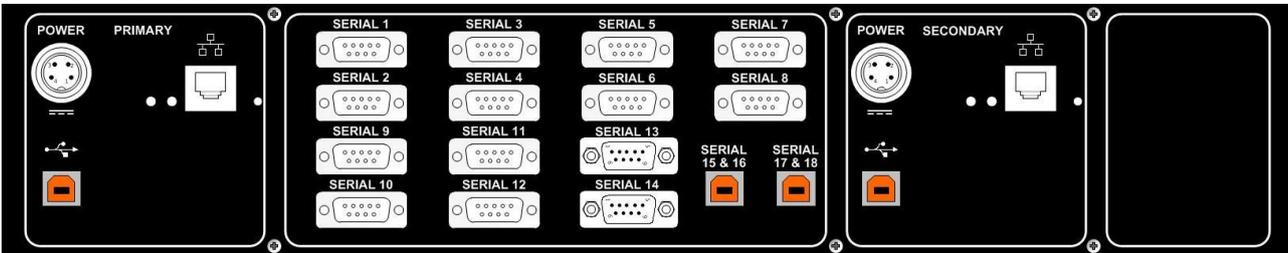
2 INSTALLATION

2.1 Cabling

INT217 rear face:



INT264 rear face:



Depending of the use and the configuration, some of the following connections have to be made before powering the installation:

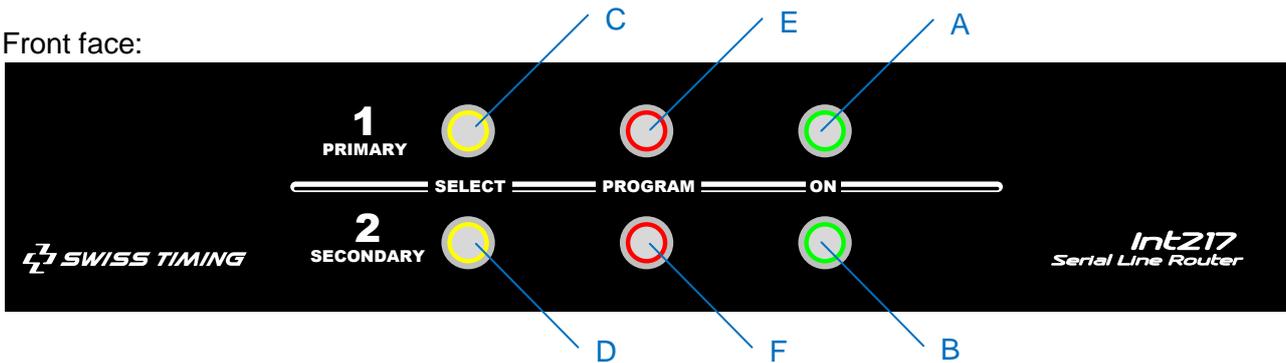
INT217 connector	Cable #	Device/connector	Remarks
POWER PRIMARY	3330.614 or 3330.618 or 3418.700 or equivalent	ALxxx POWER OUT 1PRY or Battery or AC/DC converter	
POWER SECONDARY	3330.614 or 3330.618 or 3418.700 or equivalent	ALxxx POWER OUT 2SDY or Battery or AC/DC converter	
 PRIMARY	9051.1316 (USB A-B)	Primary computer, USB connector	
 SECONDARY	9051.1316 (USB A-B)	Secondary computer, USB connector	
 PRIMARY	9051.1317 or equivalent	Switch, Ethernet connection	
 SECONDARY	9051.1317 or equivalent	Switch, Ethernet connection	
SERIAL 1-8 [INT217]	1920.010 (UTG 35p M-M)	Track connection Cycling Track sample: ODB6-CT, TIMING SERIAL	
SERIAL 1-8 [INT264]	1882.xxx (Sub-D 9p M-M) or 1906.xxx (Sub-D 9pM – Tu 7pM)	RS485 devices with Sub-D 9pF or Tuchel 7pF connector	For SCB, Wind measurement, entry terminal, ...
SERIAL 9 to 14	1882.xxx (Sub-D 9p M-M) or 1906.xxx (Sub-D 9pM – Tu 7pM)	RS485 devices with Sub-D 9pF or Tuchel 7pF connector	For SCB, Wind measurement, entry terminal, ...
SERIAL 13	9051.1302 (Sub-D 9p F-F)	RS232 devices, Sub-D 9pM connector	
SERIAL 14			
SERIAL 15 & 16	9051.1316 (USB A-B)	Computer, USB connector	For Galactica or TV-generator computers when they are placed near the INT217.
SERIAL 17 & 18			

2.2 Use

Switch on the INT217/INT264 by pressing both ON/OFF switches (they must be green illuminated). Select the wished configuration by pressing **1_{PRY}** for primary or **2_{SDY}** for secondary (the corresponding button will be yellow illuminated). The device is then ready to operate in normal mode.

To change the routing of the serial lines, you need to press the corresponding PGM (it will be red illuminated) and run *INT 217 Configurator* software on the computer connected on USB (→).

Front face:



#	Button	Signification
A	1_{PRY} ON/OFF	Primary power supply enabled when button is pressed (green illumination ON).
B	2_{SDY} ON/OFF	Secondary power supply enabled when button is pressed (green illumination ON).
C	1_{PRY} SELECT	An impulse on this button will make active the primary device (yellow illumination).
D	2_{SDY} SELECT	An impulse on this button will make active the secondary device (yellow illumination).
E	1_{PRY} PGM	When button is not pressed, the red illumination is OFF and primary device works normally. When button is pressed, the red illumination is ON and the primary device works in programming mode: virtual COM A on the USB is used to communicate with the <i>INT 217 Configurator</i> software and is no more available for standard use (PGM mode).
F	2_{SDY} PGM	When button is not pressed, the red illumination is OFF and secondary device works normally. When button is pressed, the red illumination is ON and the secondary device works in programming mode: virtual COM A on the USB is used to communicate with the <i>INT 217 Configurator</i> software and is no more available for standard use (PGM mode).

2.3 First installation

2.3.1 Install FTDI driver

Before connecting by USB cable the INT217/INT264 to a computer, you should install the FTDI driver CDM20824 available on <http://www.ftdichip.com/Drivers/VCP.htm>

Note: the same driver is used for QUANTUM connection; so if a QUANTUM is already running on your computer you don't need to install again this driver for the INT217/INT264.

2.3.2 Computer connection

Connect the INT217/INT264 PRIMARY  to your computer with the provided USB cable. Power and switch ON the PRIMARY; wait until all (8) COM ports are detected. Run the Windows Device Manager to check them (Figure 1):

[Start] "Control Panel" [System and Security] [System Device Manager] double click on "Ports"

2.3.3 Assign default COM numbers

It is highly recommended to define a standard configuration of COM numbers that is the same on all computers, for PRIMARY and SECONDARY INT217/264.

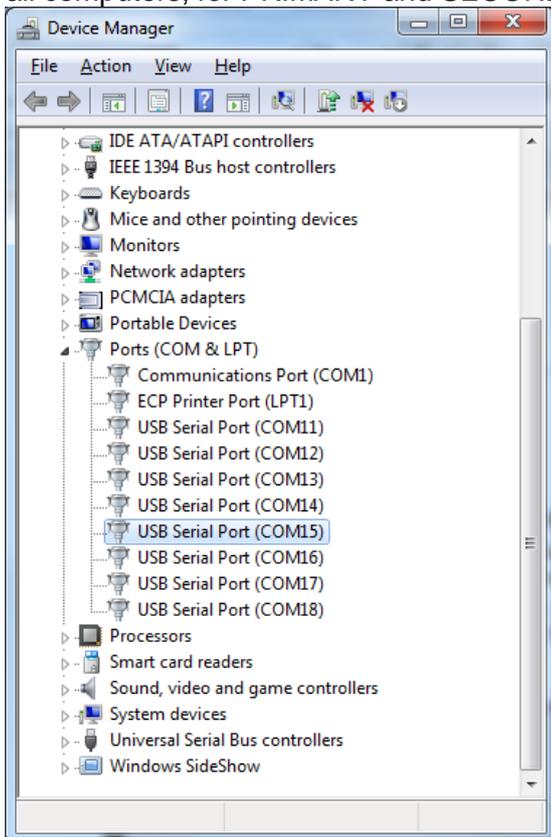


Figure 1

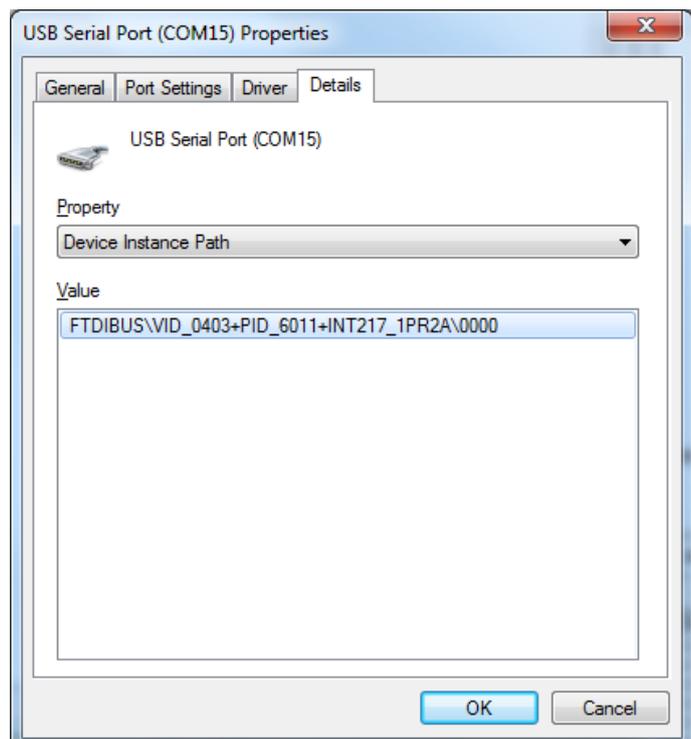


Figure 2

Open the Windows Device Manager and, for the eight INT217/INT264 COM ports:

- Do a right click and select "Properties".
- Select <Details> tab.
- Choose "Device Instance Path" (see Figure 2).
- Verify that ...INT217... indicates in "Values" and notes the following characters ("1PR2A" in the above print screen).
- Select <Port Settings> tab.

- f) Click on [Advanced] button.
- g) Select the "COM Port Number" in relation to the characters noted in point d) and bellow table.
- h) Validate by clicking on the [OK] button.
- i) Close the window by clicking on the [OK] button.

Primary

INT217_1PR1A → COM 21
INT217_1PR1B → COM 22
INT217_1PR1C → COM 23
INT217_1PR1D → COM 24
INT217_1PR2A → COM 25
INT217_1PR2B → COM 26
INT217_1PR2C → COM 27
INT217_1PR2D → COM 28

Secondary

INT217_2SE1A → COM 21
INT217_2SE1B → COM 22
INT217_2SE1C → COM 23
INT217_2SE1D → COM 24
INT217_2SE2A → COM 25
INT217_2SE2B → COM 26
INT217_2SE2C → COM 27
INT217_2SE2D → COM 28

Repeats points 2.3.2 and 2.3.3 for the SECONDARY.

2.4 INT217/INT264 configuration

Please use the *INT 217 Configurator* software to configure and test the different lines; see chapter 4.

3 ETHERNET CONFIGURATION

Both primary and secondary boards of the INT217/INT264 are equipped with an Ethernet module connected to the INT217 matrix through 4 serial ports.

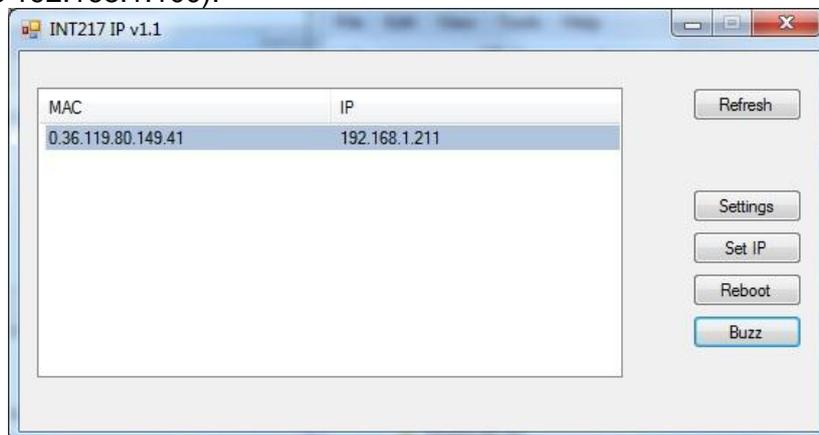
On the Ethernet side, any TCP client can open a connection (socket) with the Ethernet module. Depending on the TCP/IP port used (see list below), the Ethernet module will redirect any incoming data to the corresponding serial port. Also, when data arrives on one of the serial ports, the Ethernet module transfers it to all opened sockets on the corresponding TCP/IP ports.

The Ethernet module is able to manage up to 15 different sockets. The ports are allocated as follow:

TCP/IP Port	Serial Port
1011	1
1012	1
1013	1
1014	1
1021	2
1022	2
1023	2
1024	2
1031	3
1032	3
1033	3
1034	3
1041	4
1042	4
1043	4

3.1 Setup:

1. Connect the INT217/INT264 on the same LAN than your computer.
Notes: - Can be through a switch
- The computer should have only one network adapter enabled and connected
2. Run "INT217_EthernetSettings.exe" software. It should detect the INT217/264 (default IP address is 192.168.1.100).



3. In the list, select the device to setup. By pressing the "Buzz" button, LEDs near the RJ45 connector of the INT217/264 will blink 3 times to help device identification when several are on the same network.

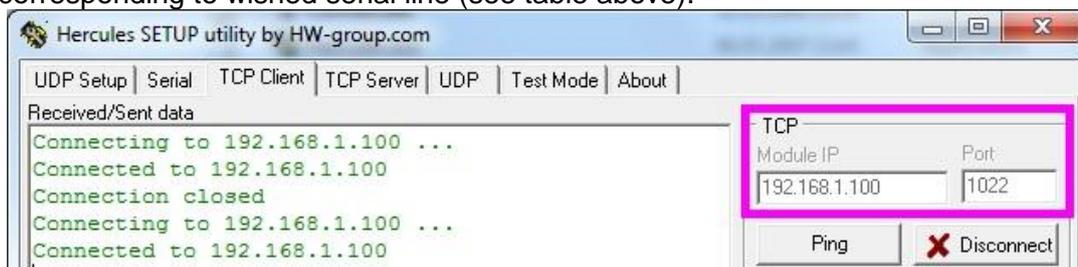
4. With “Set IP” button, configure the IPv4 address of the module such that it is on the same subnet than your computer.
5. With “Settings” button, setup speed and parity mode of the four serial line (should correspond to parameters of device connected on the other end – through the INT matrix – see also chapter 4)

3.2 Computer connection:

Software on computer connected to INT217/INT264 can access to serial line by two manners:

TCP socket:

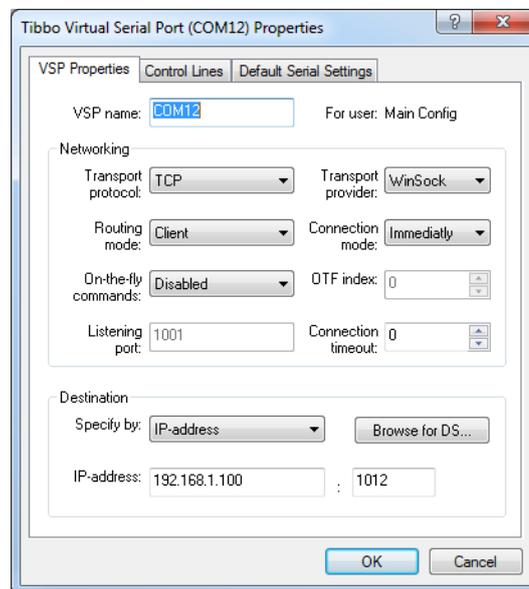
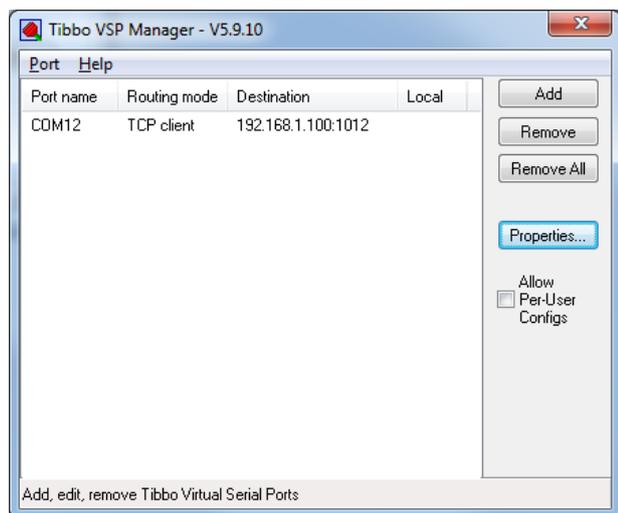
Open a TCP Client socket with INT217/264 IP address and socket number corresponding to wished serial line (see table above).



Sample for 2nd connection of serial 2 with Hercules software

Virtual COM:

- Install “tdst” software from *Tibbo Technology Inc.*
- Run “tvspman.exe” from *Tibbo Technology Inc.*
- Click “Add” button. The Virtual Serial Port should be configured like the example below (COM number, IP address and socket number should be adapted).



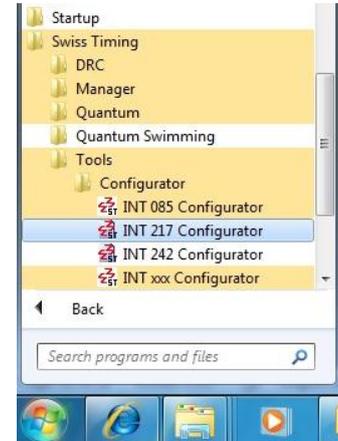
Sample for 2nd connection of serial 1

4 INT 217 CONFIGURATOR SOFTWARE

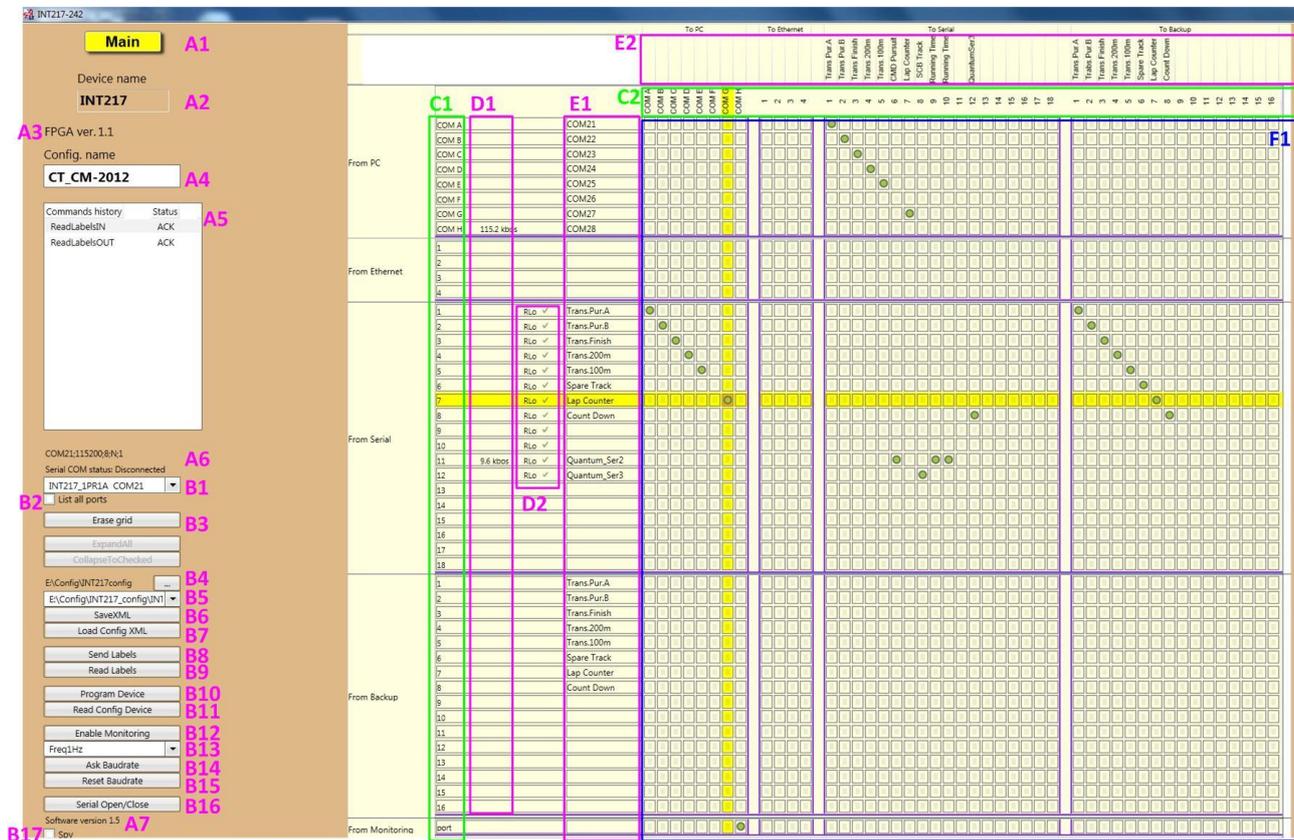
4.1 Starting INT 217 Configurator software

After DRC installation and INT Configurators installation, the INT 217 Configurator software can be run by [Start] “Swiss Timing” “Tools” “Configurator” “INT 217 Configurator”.

To allow communication between the software and the INT217, the PGM button of the INT217 must be enabled (red illuminated); then it will use the first virtual COM of the INT217 (COM21 if assignation as describe in chapter 2.3.3 has been made).



4.2 Software overview



A1	Switch between Main and Backup configuration. Actual configuration is displayed.
A2	Device name. Used to define the XML file name.
A3	INT217 firmware version (displayed only after a <i>Read Config Device</i> [B11]).
A4	Configuration name. Click to edit. Stored in the INT217. Used to define the XML file name.
A5	History of commands with status (Pending or ACKnowledge). Acknowledged commands disappear after some seconds.
A6	Status and parameters of serial line used for INT217 connection (program or monitoring).
A7	INT 217 Configurator software version.
B1	List box with COM ports.
B2	When unchecked, only founded INT217 virtual COM ports are listed in B1.

	When checked, all COM ports of the computer are listed in B1 .
B3	Erase the grid [F1] and the labels [E1 and E2].
B4	Selection of the directory to load and save the XML configuration files.
B5	Selection of XML file to load.
B6	Save the configuration [D2 , E1 , E2 and F1] in a XML file in the B4 directory. The file name is automatically defined by A2.A4.A1 .
B7	Load the B5 file from the B4 directory. A1 , A4 , D2 , E1 , E2 and F1 will be updated.
B8	Write labels E1 and E2 in the INT217 memory. ⁽¹⁾
B9	Read labels from INT217. E1 and E2 will be updated. ⁽¹⁾
B10	Write D2 and F1 in the INT217 memory. ⁽¹⁾
B11	Read configuration ⁽²⁾ from INT217. D2 and F1 will be updated. ⁽¹⁾
B12	Enable or disable the monitoring, see chapter 4.5.
B13	Select the refresh rate of the monitoring.
B14	Ask Baudrate of all INT217 serial line, see chapter 4.5.
B15	Reset Baudrate calculation inside INT217, see chapter 4.5.
B16	Manual opening or closing of serial line B1 , see chapter 4.5.
B17	When checked, an additional window shows the dialog between the software and the INT217.
C1	<p>List of input ports:</p> <ul style="list-style-type: none"> From PC [COM A to H]:  connector [virtual COM]. From Ethernet [1 to 4]:  connector [virtual COM]. From Serial [1 to 8]: UTG 35pFT connector [RS485]. From Serial [9 to 12]: Sub-D 9pFT SERIAL 9 to 12 [RS485]. From Serial [13 and 14]: Sub-D 9pMT SERIAL 13 and 14 [RS232]. From Serial [15 and 16]: SERIAL 15 & 16 USB connector [virtual COM]. From Serial [17 and 18]: SERIAL 17 & 18 USB connector [virtual COM]. From Backup [1 to 16]: Internal lines to other INT board (PRIMARY/SECONDARY). From Monitoring [port]: Generated inside INT217.
C2	<p>List of output ports:</p> <ul style="list-style-type: none"> To PC [COM A to H]:  connector [virtual COM]. To Ethernet [1 to 4]:  connector [virtual COM]. To Serial [1 to 8]: UTG 35pFT connector [RS485]. To Serial [9 to 12]: Sub-D 9pFT SERIAL 9 to 12 [RS485]. To Serial [13 and 14]: Sub-D 9pMT SERIAL 13 and 14 [RS232]. To Serial [15 and 16]: SERIAL 15 & 16 USB connector [virtual COM]. To Serial [17 and 18]: SERIAL 17 & 18 USB connector [virtual COM]. To Backup [1 to 16]: Internal lines to other INT board (PRIMARY/SECONDARY).
D1	Measured Baudrate, see chapter 4.5.
D2	End of line termination for RS485 lines; enabled when checked (default).
E1	Editable labels for input ports (double click to edit). Stored in the INT217 with B8 .
E2	Editable labels for output ports (right click to edit). Stored in the INT217 with B8 .
F1	Minesweeper, see chapter 4.3.

(1) PGM button of the INT217 must be enabled (red illuminated).

(2) Configuration Main or Backup as selected by **A1**.

4.3 Minesweeper

By moving the mouse cursor over the grid (minesweeper [**F1**]), a yellow cross show you the input (left) and output (top) of the signal. A checked box means the input (From...) is connected to the output (To...).

An input can be connected to several outputs (not limited number of check box on a line).

An output can be connected only to one input (maximum on check box per column).

A right click on a box will enable/disable a bidirectional transmission. For example if you right click on the box "From PC COM B To Serial 4", it will also check the box "From Serial 4 To PC COM B".

4.4 Basic uses

4.4.1 Programming INT217/INT264 with existing configuration files

To program INT217/INT264 with existing configuration files (we suppose the configuration is symmetrical, so same files are used for primary and secondary); **the operation must be done on primary and secondary:**

Operations on Primary	Operations on Secondary
Connect INT217 1PR to computer by USB and power it ON.	Connect INT217 2SE to computer by USB and power it ON.
Enable the PGM button 1PR of INT217 (must be red illuminated).	Enable the PGM button 2SE of INT217 (must be red illuminated).
Run "INT 217 Configurator" software.	Run "INT 217 Configurator" software.
Select "INT217_1PR1A+ as serial line [B1].	Select "INT217_2SE1A+ as serial line [B1].
Select the directory where the configuration files are stored [B4].	Select the directory where the configuration files are stored [B4].
Select the file for the MAIN configuration [B5].	Select the file for the MAIN configuration [B5].
Click on "Load Config XML" [B7], "Main" must be automatically displayed on [A1].	Click on "Load Config XML" [B7], "Main" must be automatically displayed on [A1].
Click on "Send Labels" [B8] and "Program Device" [B10].	Click on "Send Labels" [B8] and "Program Device" [B10].
Select the file for the BACKUP configuration [B5].	Select the file for the BACKUP configuration [B5].
Click on "Load Config XML" [B7], "Backup" must be automatically displayed on [A1].	Click on "Load Config XML" [B7], "Backup" must be automatically displayed on [A1].
Click on "Send Labels" [B8] and "Program Device" [B10].	Click on "Send Labels" [B8] and "Program Device" [B10].
Exit "INT 217 Configurator" software.	Exit "INT 217 Configurator" software.
Disable the PGM button 1PR of INT217 (must not be illuminated).	Disable the PGM button 2SE of INT217 (must not be illuminated).

4.4.2 Reading and saving INT217 configuration

We suppose the configuration is symmetrical, so same files are used for primary and secondary; **the operation can be done on primary or on secondary:**

Operations on Primary	Operations on Secondary
Connect INT217 1PR to computer by USB and power it ON.	Connect INT217 2SE to computer by USB and power it ON.
Enable the PGM button 1PR of INT217 (must be red illuminated).	Enable the PGM button 2SE of INT217 (must be red illuminated).
Run "INT 217 Configurator" software.	Run "INT 217 Configurator" software.
Select "INT217_1PR1A+ as serial line [B1].	Select "INT217_2SE1A+ as serial line [B1].
Select the directory where the configuration files must be saved [B4].	Select the directory where the configuration files must be saved [B4].
Verify that "Main" is displayed on [A1].	Click on the "Main" button [A1] in order "Backup" is displayed.
Click on "Read Labels" [B9] and "Read Config Device" [B11].	Click on "Read Labels" [B9] and "Read Config Device" [B11].
Click on "SaveXML" [B6], the main configuration is now saved.	Click on the "Backup" button [A1] in order "Main" is displayed.
Click on the "Main" button [A1] in order "Backup" is displayed.	Click on "SaveXML" [B6], the main configuration is now saved.
Click on "Read Labels" [B9] and "Read Config Device" [B11].	Click on "Read Labels" [B9] and "Read Config Device" [B11].
Click on "SaveXML" [B6], the backup configuration is now saved.	Click on the "Main" button [A1] in order "Backup" is displayed.
Exit "INT 217 Configurator" software.	Click on "SaveXML" [B6], the backup configuration is now saved.
Disable the PGM button 1PR of INT217 (must not be illuminated).	Exit "INT 217 Configurator" software.
	Disable the PGM button 2SE of INT217 (must not be illuminated).

4.4.3 Modifying the INT217 configuration

- Connect INT217 to computer by USB and power it ON.
- Enable the PGM button of INT217 (must be red illuminated).
- Run "INT 217 Configurator" software.
- Select "INT217_1PR1A" or "INT217_2SE1A" as serial line [B1].
- Select the configuration to modify (MAIN / BACKUP) [A1].
- Press on "Read Labels" [B9] and "Read Config Device" [B11]

To modify a label:

- Double click on an input label [E1] or right click on an output label [E2].
- Enter or modify the text.
- Send labels inside INT217 by clicking the "Send Labels" button [B8].

To modify the serial line link configuration:

- Click in the grid [F1], to modify the configuration.
- Send the new configuration inside INT217 by clicking “Program Device” button [B10].

g) Exit “INT 217 Configurator” software.

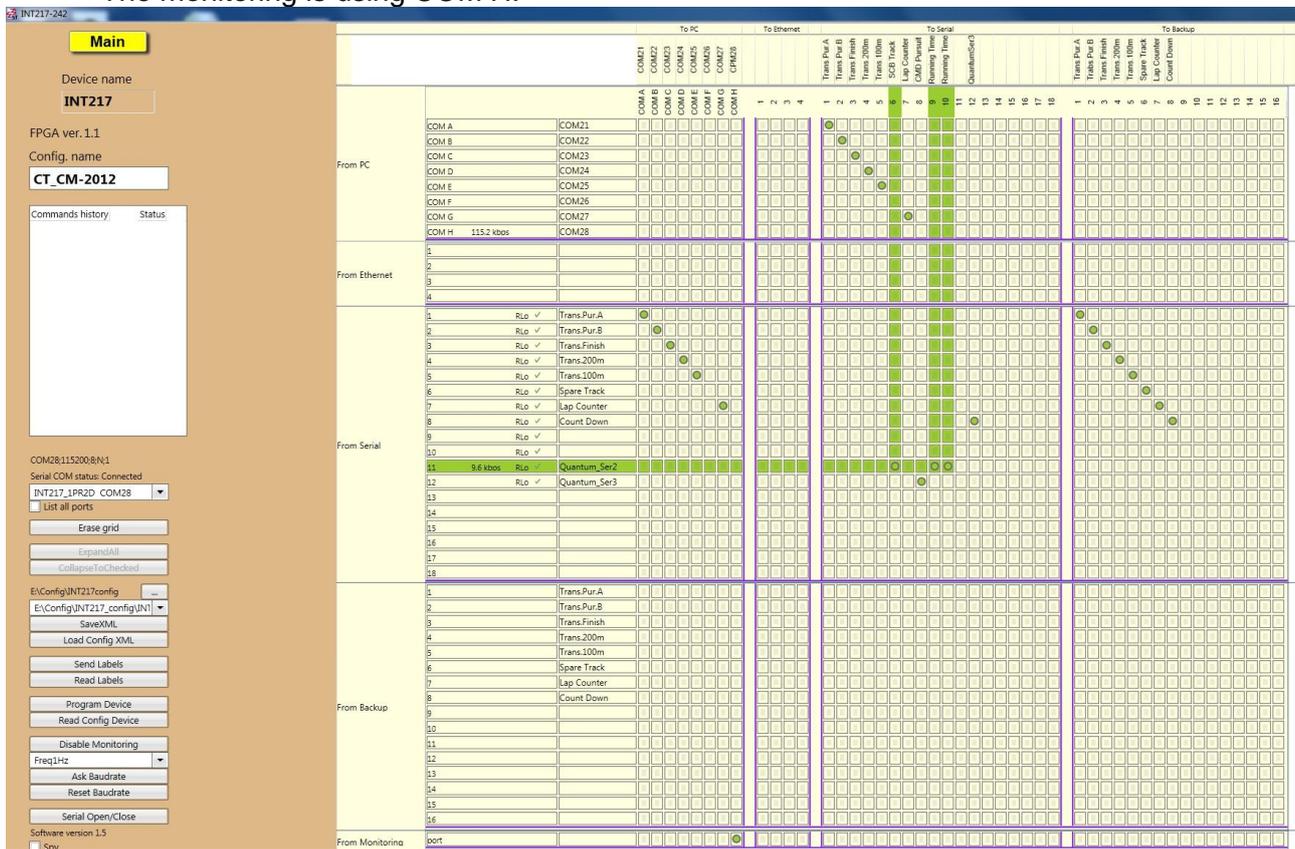
h) Disable the PGM button of INT217 (must not be illuminated).

4.5 Monitoring

When monitoring is enabled, it allows knowing where messages arrive and where they are going. It is also possible to measure baud rate of the message.

In the below sample print screen we can see:

- A message arrives on Serial 11 and is outputted on Serial 6, Serial 9 and Serial 10.
- The transmission speed of input Serial 11 is 9'600 bauds.
- The transmission speed of input COM H is 115'200 bauds.
- The monitoring is using COM H.



4.5.1 Monitoring configuration

- Connect INT217 to computer by USB and power it ON.
- Enable the PGM button of INT217 (must be red illuminated).
- Run “INT 217 Configurator” software.
- Select “INT217_1PR1A” or “INT217_2SE1A” as serial line [B1].
- Press on “Read Labels” [B9] and “Read Config Device” [B11]
- Select on which serial line the monitoring has to be outputted by selecting at least one box on the last line of the grid [F1] (From Monitoring).
- Click on the “Enable Monitoring” button [B12] (“Disable Monitoring” must be displayed).

- h) Click on the “Program Device” button [B10].
- i) Exit “INT 217 Configurator” software.
- j) Disable the PGM button of INT217 (must not be illuminated).

4.5.2 Monitoring use

When the correct configuration has been made (see chapter 4.5.1), the monitoring is automatically enabled at INT217 power on. Then it can be viewed on StSpy but it will be difficult to understand it; the best method is to use the “INT 217 Configurator” software:

- a) Connect INT217 to computer by USB and power it ON. Verify the PGM button is **not** enabled.
- b) Run “INT 217 Configurator” software.
- c) Load the configuration of the INT217 in the software.¹
- d) Select the serial line corresponding to the Monitoring [B1].
- e) Press on “Read Labels” [B9] and “Read Config Device” [B11]

To allow monitoring output, the PGM button of the INT217 must be disabled.

The monitoring output of INT217 is always at 115'200 bauds.

¹ If the correct configuration is not displayed in the “INT 217 Configurator” software, the monitoring will be badly displayed and very difficult to understand. The configuration can be loaded by a XML file or read inside INT217.

5 PROPERTIES

5.1 Standard Operating Conditions

PARAMETERS	SYMBOL	MIN	TYP	MAX	UNIT
Power supply	V _{dd}	9	12	35	V
Power (per power supply)	P	1.5	5.0	35.0 ⁽¹⁾	W
Operating temperature	T _{op}	0	25	60	°C
Storage temperature	T _{st}	-30	25	80	°C
Relative humidity				95	%

Notes: (1) Maximum value only when powered at 35V and pressing PRIMARY or SECONDARY button.

5.2 Electrical characteristics

Conditions: T = 25°C, V_{dd} = 12V (unless otherwise specified)

PARAMETERS	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT	
Power consumption Primary	I _{dd_1PR}	Power supply on Primary only	V _{dd} = 9V	0.2	0.5	1.0 ⁽¹⁾	A
			V _{dd} = 12V	0.1	0.4	1.0 ⁽¹⁾	
			V _{dd} = 35V	0.1	0.2	1.0 ⁽¹⁾	
Serial Line Bauds Rate	Bauds		1200	9600	115200	Bds	
RS485 & RS232 rated dielectric insulation voltage	V _{ISO}	1 Minute (Derived from 1s test)	2500			V _{RMS}	
		1 Second	±4400			V _{DC}	
Electrostatic Discharge	ESD				15	kV	
EMC, burst resistance	Burst				2	kV	

Notes: (1) Maximum value only when pressing PRIMARY or SECONDARY button.

5.3 Mechanical characteristics

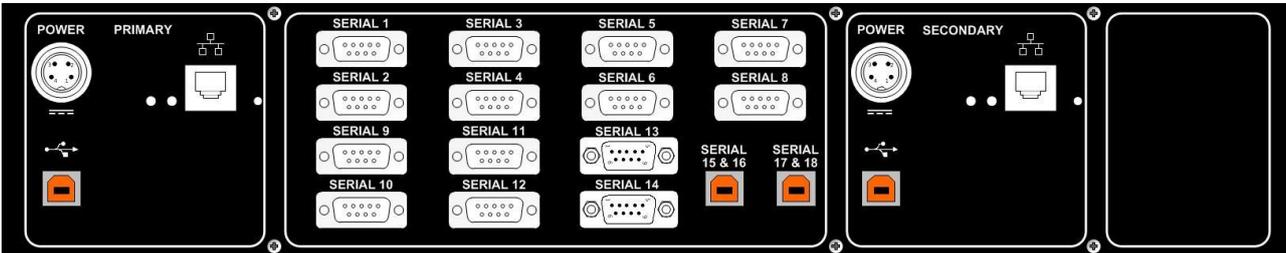
PARAMETERS	SYMBOL	Desktop version	Rack mounting version	UNIT
Width	L	448	482	mm
Height	H	96	89	mm
Deep	D	324	324	mm
Weight	W	4.0	4.0	kg

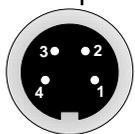
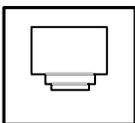
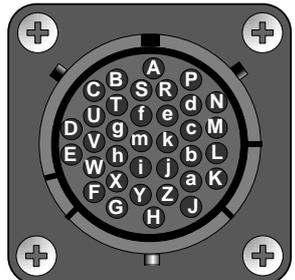
5.4 Connectors

INT217:

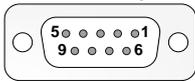
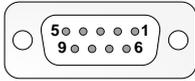
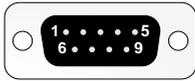


INT264:



Name	Use	Connector	Pinning																		
POWER PRIMARY	Power input of the primary system	DIN 4pMT 	1: DC power input+ (9-35VDC) 2: DC power input- (GND) 3: not used 4: not used																		
POWER SECONDARY	Power input of the secondary system																				
 PRIMARY  SECONDARY	Primary computer (8 virtual COM) Secondary computer (8 virtual COM)	USB - B 	Device instance path in Windows Device Manager: <table border="1"> <thead> <tr> <th>PRIMARY</th> <th>SECONDARY</th> </tr> </thead> <tbody> <tr> <td>INT217_1PR1A</td> <td>INT217_2SE1A</td> </tr> <tr> <td>INT217_1PR1B</td> <td>INT217_2SE1B</td> </tr> <tr> <td>INT217_1PR1C</td> <td>INT217_2SE1C</td> </tr> <tr> <td>INT217_1PR1D</td> <td>INT217_2SE1D</td> </tr> <tr> <td>INT217_1PR2A</td> <td>INT217_2SE2A</td> </tr> <tr> <td>INT217_1PR2B</td> <td>INT217_2SE2B</td> </tr> <tr> <td>INT217_1PR2C</td> <td>INT217_2SE2C</td> </tr> <tr> <td>INT217_1PR2D</td> <td>INT217_2SE2D</td> </tr> </tbody> </table>	PRIMARY	SECONDARY	INT217_1PR1A	INT217_2SE1A	INT217_1PR1B	INT217_2SE1B	INT217_1PR1C	INT217_2SE1C	INT217_1PR1D	INT217_2SE1D	INT217_1PR2A	INT217_2SE2A	INT217_1PR2B	INT217_2SE2B	INT217_1PR2C	INT217_2SE2C	INT217_1PR2D	INT217_2SE2D
PRIMARY	SECONDARY																				
INT217_1PR1A	INT217_2SE1A																				
INT217_1PR1B	INT217_2SE1B																				
INT217_1PR1C	INT217_2SE1C																				
INT217_1PR1D	INT217_2SE1D																				
INT217_1PR2A	INT217_2SE2A																				
INT217_1PR2B	INT217_2SE2B																				
INT217_1PR2C	INT217_2SE2C																				
INT217_1PR2D	INT217_2SE2D																				
 PRIMARY  SECONDARY	Primary network (4 virtual COM) Secondary network (4 virtual COM)	RJ45 																			
SERIAL 1-8 [INT217]	Track connection	UTG 35pFT 	A: SERIAL 1 Tx- B: SERIAL 1 Tx+ C: SERIAL 1 Rx- D: SERIAL 1 Rx+ E: SERIAL 2 Tx- F: SERIAL 2 Tx+ G: SERIAL 2 Rx- H: SERIAL 2 Rx+ J: SERIAL 3 Tx- K: SERIAL 3 Tx+ L: SERIAL 3 Rx- M: SERIAL 3 Rx+ N: SERIAL 4 Tx- P: SERIAL 4 Tx+ R: SERIAL 4 Rx- S: SERIAL 4 Rx+ T: SERIAL 5 Tx-																		

INT217/INT264 / SERIAL LINE ROUTER

			<p>U: SERIAL 5 Tx+</p> <p>V: SERIAL 5 Rx-</p> <p>W: SERIAL 5 Rx+</p> <p>X: SERIAL 6 Tx-</p> <p>Y: SERIAL 6 Tx+</p> <p>Z: SERIAL 6 Rx-</p> <p>a: SERIAL 6 Rx+</p> <p>b: SERIAL 7 Tx-</p> <p>c: SERIAL 7 Tx+</p> <p>d: SERIAL 7 Rx-</p> <p>e: SERIAL 7 Rx+</p> <p>f: SERIAL 8 Tx-</p> <p>g: SERIAL 8 Tx+</p> <p>h: SERIAL 8 Rx-</p> <p>i: SERIAL 8 Rx+</p> <p>j-k: not used</p> <p>m: ground (cable shield if shielded)</p>
SERIAL 1-8 [INT264]	RS485 device	<p style="text-align: center;">Sub-D 9pF</p> 	<p>3: Tx-</p> <p>4: Tx+</p> <p>5: Rx-</p> <p>6: Rx+</p> <p>1-2, 7-9: not used</p>
SERIAL 9 SERIAL 10 SERIAL 11 SERIAL 12	RS485 device	<p style="text-align: center;">Sub-D 9pF</p> 	<p>1: +12VDC output (max 40mA)²</p> <p>3: Tx-</p> <p>4: Tx+</p> <p>5: Rx-</p> <p>6: Rx+</p> <p>7: GND</p> <p>2, 8-9: not used</p>
SERIAL 13 SERIAL 14	RS232 device	<p style="text-align: center;">Sub-D 9pM</p> 	<p>2: Rx</p> <p>3: Tx</p> <p>5: GND</p> <p>1, 4, 6-9: not used</p>
SERIAL 15&16 SERIAL 17&18	Computer (2 virtual COM)	<p style="text-align: center;">USB - B</p> 	<p>Device instance path in Windows Device Manager:</p> <p>15: INT217_15-16A</p> <p>16: INT217_15-16B</p> <p>17: INT217_17-18A</p> <p>18: INT217_17-18B</p>

² Only if jumper P11 is internally mounted (not factory mounted).

6 MAINTENANCE AND PROTECTION

6.1 FAQ

Frequently Asked Question	Answer
I press the ON/OFF button, why the green indicator is not lighted?	Verify that the corresponding power input is correctly powered. 1 _{PRY} switch corresponds to PRIMARY power input; 2 _{SDY} switch corresponds to SECONDARY power input.
Why, when I press the 1 _{PRY} or 2 _{SDY} button, the button is not yellow illuminated?	The corresponding device (Primary or Secondary) must be powered and ON (ON button green illuminated).

7 APPENDIX

7.1 Version history

Version	Date	Modifications since last version
1.0	26.04.2013	Initial version
1.1	29.04.2013	Front/rear plate updated & connectors
1.2	11.11.2013	Add information about INT264. Add chapter 3 (Ethernet configuration)

NOTES

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