

1 **TYPE EXAMINATION CERTIFICATE**

2 **Equipment Intended for use in Potentially Explosive Atmospheres
Directive 94/9/EC**

3 Type Examination Certificate Number: **Baseefa14ATEX0151X**

4 Equipment: **Wolverine Industrial Ethernet SHDSL Extenders**

5 Manufacturer: **Westermo Teleindustri AB**

6 Address: **SE-640 40 Stora Sundby, Sweden**

7 This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 Baseefa certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment of Category 3 intended for use in potentially explosive atmospheres given in Annex II to European Union Directive 94/9/EC of 23 March 1994.

The examination and test results are recorded in confidential Report No. **GB/BAS/ExTR14.0153/00**

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0: 2012 EN 60079-15: 2010

except in respect of those requirements listed at item 18 of the Schedule.

10 If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

11 This TYPE EXAMINATION CERTIFICATE relates only to the design of the specified equipment and not to specific items of equipment subsequently manufactured.

12 The marking of the equipment shall include the following :

⊕ II 3G Ex nA IIC T4 Gc (-40°C ≤ T_a ≤ +70°C)

Baseefa Customer Reference No. **6934**

Project File No. **12/0227**

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R S SINCLAIR JP ALLAN O C O F E N

GENERAL MANAGER

On behalf of SGS Baseefa Limited

13 **Schedule**

14 **Certificate Number Baseefa14ATEX0151X**

15 **Description of Equipment**

The Wolverine Industrial Ethernet SHDSL Extenders are a range of Ethernet Extenders with integral switch and serial port allowing interconnection with legacy equipment. The equipment provides switching and routing functionality including VLAN support, Layer 2/3 switching, Static Routing, Firewall functions, IGMP Snooping and VPN support. The equipment can also monitor the performance of the SHDSL line. The range covers three models, the Wolverine DDW-142-EX, Wolverine DDW-225-EX & Wolverine DDW-226-EX.

The Wolverine DDW-142-EX Industrial Ethernet SHDSL Extender comprises a DIN Rail mounted metallic enclosure containing a power supply, CPU and SHDSL boards. The equipment is supplied via dual power supply terminals which support redundancy power connection to the equipment. The equipment provides two SHDSL, two 10/100Base Ethernet TX and a RS-232 Serial ports on the front of the equipment for network connections.

The Wolverine DDW-225-EX and DDW-226-EX Industrial Ethernet SHDSL Extenders comprise a larger metallic enclosure that can be either DIN Rail or wall mounted, containing a power supply, CPU and SHDSL boards interconnected via a backplane board. The equipment is supplied via a dual power supply terminals which support redundancy power connection to the equipment. Both variants of the equipment provide two SHDSL and four 10/100Base Ethernet TX ports with the DDW-226-EX variant having an additional RS-232 port all located on the front of the equipment for network connections.

All variants of the equipment have a digital I/O interface to allow the equipment's status to be reported to external equipment and external events to be monitored, a console port to allow connection to a Command Line Interface (CLI) and a USB port, both for service and upgrading of the equipment.

Input Parameters:

Power Connector: +DC1, +DC2 & -COM

Working Voltage Range = 24V to 48V d.c.

I/O Connector: 'Status +'/'Relay output +' & 'Status -'/'Relay output -' and 'Digital in +' and 'Digital in -'

Maximum I/P Voltage = 60V d.c.

16 **Report Number**

GB/BAS/ExTR14.0153/00

17 **Specific Conditions of Use**

1. The equipment must be installed in an area of not more than pollution degree 2 in accordance with EN 60664-1, and in an enclosure that provides a minimum degree of protection of at least IP54 and complies with the relevant requirements of EN 60079-0 and EN 60079-15.
2. External connections to the equipment must not be inserted or removed unless either the area in which the equipment is installed is known to be non-hazardous, or the circuits connected have been de-energised.
3. The network cables once installed must be properly fixed by the use of cable ties or similar to reduce the risk of accidentally withdrawing the plugs.

18 **Essential Health and Safety Requirements**

All relevant Essential Health and Safety Requirements are covered by the standards listed at item 9.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
3642-5300-U-01	1 & 2	01	2014-05-19	DDW-142 EX General Assembly
1212-1560-U-01	1 of 1	1	2014-05-16	Label DDW-142-EX
5011-3000-B	1 to 12	02	2012-11-20	SHDSL DDW-142 CPU
5011-3000-C	1 of 10	02	2012-11-20	DDW-142 CPU - SHDSL Connector
5011-3000-C	2 of 10	02	2012-11-20	DDW-142 CPU - CPU & Memory
5011-3000-C	3 of 10	02	2012-11-20	DDW-142 CPU - MII/USB
5011-3000-C	4 of 10	02	2012-11-20	DDW-142 CPU - Switch Core/Ethernet
5011-3000-C	5 of 10	02	2012-11-20	DDW-142 CPU - FPGA & Clock
5011-3000-C	6 of 10	02	2012-11-20	DDW-142 CPU - RS-232/4xx
5011-3000-C	7 of 10	02	2012-11-20	DDW-142 CPU - Conn Power
5011-3000-C	8 of 10	02	2012-11-20	DDW-142 CPU - DC/DC
5011-3000-C	9 of 10	02	2012-11-20	DDW-142 CPU - Power SHDSL & SC
5011-3000-C	10 of 10	02	2012-11-20	DDW-142 CPU - Power CPU & JTAG
5011-3000-H	1 of 1	02	2012-11-20	SHDSL DDW-142 CPU Top Layer
5011-3000-H	1 of 1	02	2012-11-20	SHDSL DDW-142 CPU Bot Layer
5011-3100-B	1 to 4	01	2012-04-13	SHDSL Linecard Hybrid
5011-3100-C	1 of 2	01	2012-04-13	SHDSL Line Interface - Line Interface
5011-3100-C	2 of 2	01	2012-04-13	SHDSL Line Interface – LED & ID
5011-3100-H	1 of 1	01	2012-04-13	SHDSL Linecard Top Layer
5011-3100-H	1 of 1	01	2012-04-13	SHDSL Linecard Bot Layer
2010-5251-C	1 of 8	01	05/03/11	Lynx Power Module 19-60V DC 10W
2010-5251-C	2 of 8	01	05/03/11	Lynx Power Module 19-60V DC 10W – Fault Relay
2010-5251-C	3 of 8	01	05/03/11	Lynx Power Module 19-60V DC 10W – MMI Block
2010-5251-C	4 of 8	01	05/03/11	Input Power Monitor
2010-5251-C	5 of 8	01	05/03/11	Lynx Power Module 19-60V DC 10W – 3,3V 10W out
2010-5251-C	6 of 8	01	05/03/11	Protection
2010-5251-C	7 of 8	01	05/03/11	Lynx Power Module 19-60V DC 10W – 2,5V Regulator and Reset Circuit
2010-5251-C	8 of 8	01	05/03/11	Lynx Power Module 19-60V DC 10W – ID Memory and Console Connector
2010-5251-H	1 & 2	01	05/03/11	2010-525x Lynx DSS Power
5011-1060-B	1 to 5	01	2011-05-03	Lynx DSS Power 4-Layer
3642-5250-U-02	1 of 1	02	2014-05-28	General Assembly DDW-225-EX
1212-1551-U-02	1 of 1	02	2014-05-28	Label DDW-225-EX
5013-0500-C	1 of 3	REV2	2007-10-26	2 Slot Backplane RedFox – Power Slot
5013-0500-C	2 of 3	REV2	2007-10-26	2 Slot Backplane RedFox – Slot 1
5013-0500-C	3 of 3	REV2	2007-10-26	2 Slot Backplane RedFox – CPU Slot
5013-0510-B-01	1 of 1	01	2009-05-28	Bill of Material 2 Slot Backplane SHDSL
5013-0510-H	1 of 1	01	2009-05-28	Backplane SHDSL
2010-4278	1 of 26	4	12/05/2012	SHDSL_CPU
2010-4278	2 of 26	4	12/05/2012	SHDSL_CPU – Clock
2010-4278	3 of 26	4	12/05/2012	SHDSL_CPU – Flash Interface

Number	Sheet	Issue	Date	Description
2010-4278	4 of 26	4	12/05/2012	SHDSL_CPU – Front Interface
2010-4278	5 of 26	4	12/05/2012	SHDSL_CPU – IO Level Conversion
2010-4278	6 of 26	4	12/05/2012	SHDSL_CPU – Management Light
2010-4278	7 of 26	4	12/05/2012	SHDSL_CPU – Management Boot Conf JTAG
2010-4278	8 of 26	4	12/05/2012	SHDSL_CPU – Management USB, GPIO
2010-4278	9 of 26	4	12/05/2012	SHDSL_CPU – Management UART SDIO
2010-4278	10 of 26	4	12/05/2012	SHDSL_CPU – Management UART, MDIO, I2C
2010-4278	11 of 26	4	12/05/2012	SHDSL_CPU – Management Memory Interface
2010-4278	12 of 26	4	12/05/2012	SHDSL_CPU – Management Power
2010-4278	13 of 26	4	12/05/2012	SHDSL_CPU – Programming Interface
2010-4278	14 of 26	4	12/05/2012	SHDSL_CPU – External Memory
2010-4278	15 of 26	4	12/05/2012	SHDSL_CPU – Points of Load Converters
2010-4278	16 of 26	4	12/05/2012	SHDSL_CPU – Switchcore
2010-4278	17 of 26	4	12/05/2012	SHDSL_CPU – TX-Ports
2010-4278	18 of 26	4	12/05/2012	SHDSL_CPU – TX_Ports 2x1
2010-4278	19 of 26	4	12/05/2012	SHDSL_CPU – TX_Ports 2x2 Port 0
2010-4278	20 of 26	4	12/05/2012	SHDSL_CPU – TX_Ports 2x2 Port 1
2010-4278	21 of 26	4	12/05/2012	SHDSL_CPU – TX_Ports 2x2 Port 2
2010-4278	22 of 26	4	12/05/2012	SHDSL_CPU – TX_Ports 2x2 Port 3
2010-4278	23 of 26	4	12/05/2012	SHDSL_CPU – Daughter Board Connector
2010-4278	24 of 26	4	12/05/2012	SHDSL_CPU – USB Transceiver
2010-4278	25 of 26	4	12/05/2012	SHDSL_CPU – Backplane Ports High Speed and Low Speed
2010-4278	26 of 26	4	12/05/2012	SHDSL_CPU – Backplane Ports Low Speed only
2010-4278-H	1 & 2	Original	2010-12-14	SHDSL / RFI_Lite CPU
5013-0620-B	1 to 8	04	12-12-27	CPU-Board
2010-4612	1 of 5	1	2009-05-06	Redfox Industrial PSU – Top Page
2010-4612	2 of 5	1	2009-05-06	Redfox Industrial PSU – Controll Logic
2010-4612	3 of 5	1	2009-05-06	Redfox Industrial PSU – Power Input, DI and DO Connectors
2010-4612	4 of 5	1	2009-05-06	Redfox Industrial PSU – PSU PWM Part
2010-4612	5 of 5	1	2009-05-06	Redfox Industrial PSU – Input Filter
2010-4613	1 & 2	4	2010-02-02	RedFox Ind Power
5013-0200-B	1 to 8	6	10-07-06	RedFox Industrial Power
5013-0750-B	1 to 8	03	2012-02-16	SHDSL SHDSL-Board
5013-0750-C	1 of 9	03	2012-02-16	SHDSL Card – DSL Line 1
5013-0750-C	2 of 9	03	2012-02-16	SHDSL Card – DSP Line 2
5013-0750-C	3 of 9	03	2012-02-16	SHDSL Card – Switch Core
5013-0750-C	4 of 9	03	2012-02-16	SHDSL Card – FPGA
5013-0750-C	5 of 9	03	2012-02-16	SHDSL Card – DSL Control
5013-0750-C	6 of 9	03	2012-02-16	SHDSL Card – Backplane Interface
5013-0750-C	7 of 9	03	2012-02-16	SHDSL Card – RS232
5013-0750-C	8 of 9	03	2012-02-16	SHDSL Card – DC/DC

Number	Sheet	Issue	Date	Description
5013-0750-C	9 of 9	03	2012-02-16	SHDSL Card – DSL Chip Power
5013-0750-H	1 of 1	03	2012-02-16	DDW-225 “Turbo Speed” Top Layer
5013-0750-H	1 of 1	03	2012-02-16	DDW-225 “Turbo Speed” Bottom Layer
3642-5240-U-02	1 of 1	02	2014-05-28	General Assembly DDW-226-EX
1212-1552-U-02	1 of 1	02	2014-05-28	Label DDW-226-EX
5013-0520-B-01	1 of 1	01	2010-04-26	Bill of Material 2 Slot Backplane SHDSL Serial
5013-0520-C	1 of 3	REV1	2010-04-26	2 Slot Bakplane SHDSL Serial Power Slot
5013-0520-C	2 of 3	REV1	2010-04-26	2 Slot Bakplane SHDSL Serial Slot 1
5013-0520-C	3 of 3	REV1	2010-04-26	2 Slot SHDSL Serial CPU Slot
5013-0520-H	1 of 1	01	2010-04-26	Bakplane SHDSL Serial
5013-0630-B	1 to 8	02	11-01-16	SHDSL CPU RS232
5013-0740-B	1 to 9	03	2012-02-14	SHDSL Board Serial
5013-0740-C	1 of 9	03	2012-02-14	SHDSL Card – DSL Line 1
5013-0740-C	2 of 9	03	2012-02-14	SHDSL Card – DSP Line 2
5013-0740-C	3 of 9	03	2012-02-14	SHDSL Card – Switch Core
5013-0740-C	4 of 9	03	2012-02-14	SHDSL Card – FPGA
5013-0740-C	5 of 9	03	2012-02-14	SHDSL Card – DSL Control
5013-0740-C	6 of 9	03	2012-02-14	SHDSL Card – Backplane Interface
5013-0740-C	7 of 9	03	2012-02-14	SHDSL Card – RS232
5013-0740-C	8 of 9	03	2012-02-14	SHDSL Card – DC/DC
5013-0740-C	9 of 9	03	2012-02-14	SHDSL Card – DSL Chip Power
5013-0740-H	1 of 1	03	2012-02-14	DDW-226 “Turbo Speed” Top Layer
5013-0740-H	1 of 1	03	2012-02-14	DDW-226 “Turbo Speed” Bottom Layer

The above drawings are associated and held with IECEx Certificate No. IECEx BAS 14.0074X