Contents

The original version of this document is in English. In case of discrepancy between a translation of this document and the English version, the English version must be used as a reference

Modification	Ae 0	Ae 1	Ae 2	Ae 3	Ae 4	Ae 5	Ae 6		Prepared	2021-02-22	tamburwi
KA No.	120390	120436	xxxxx						Reviewed	2021-02-22	carriest
KA Date	2021-05-29	2021-09-25	xx-xx-xx						Norms chkd	2021-02-22	albertf1
									Released	xx-xx-xx	hugenema

| iSPECI BLE Adapter Technical Information		Remark				
		Replaces / Mod.	Basis Drawing		No Pg. 14	Format A4
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1 Introduction

iSPECI BLE adapter is a device that allows you to connect the elevator controllers, by the means of a "RS232/RS422 – Bluetooth Low Energy (BLE) interface" to the mobile device / iSPECI of the field technicians.

The iSPECI BLE adapter has been developed to radically simplify connecting to elevator controllers using the iSPECI application.
No more cables that can break, no additional adapters to turn communication pins, it is a
plug & play device. It is a Bluetooth BLE device with an approximate range of 10 meters.

2 Overview
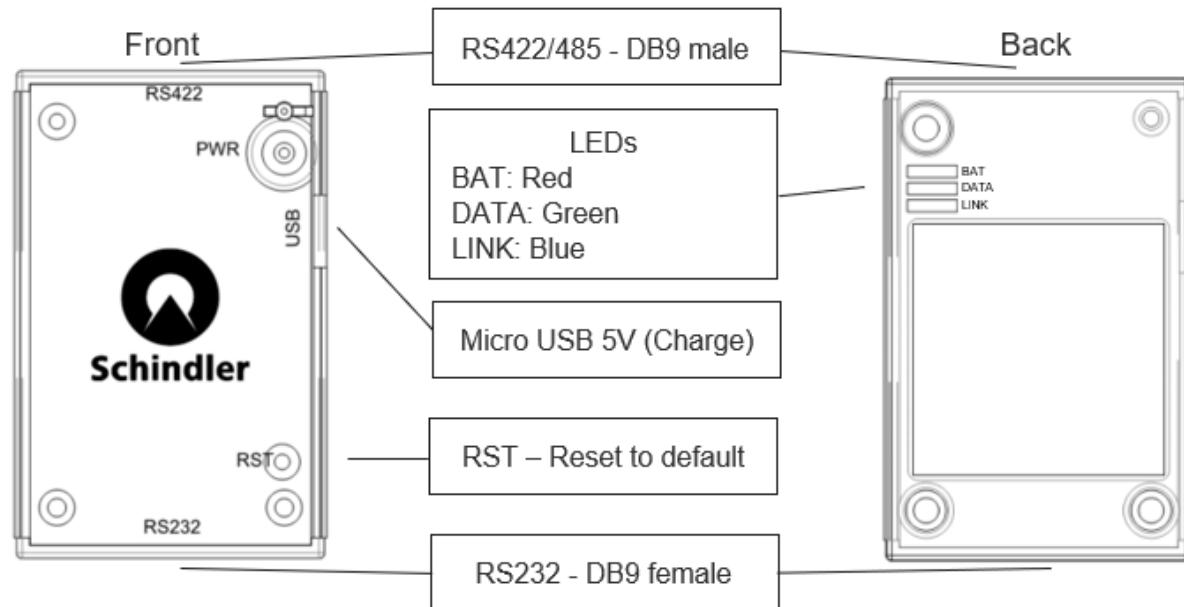
The adapter contains the following:

- ⇨ Bluetooth (BLE) interface 5.2 (see EFR32BG22 from Silicon Labs)
- ⇨ RS232 interface with connector DB9 female
- ⇨ RS422/485 interface with connector DB9 male
- ⇨ Micro USB connector (5VDC) for battery charging
- ⇨ RST button (reset button to be pressed in case the Bluetooth is not working)
- ⇨ PWR button (ON/OFF)
- ⇨ LEDs

LED	Flashing	ON
BAT	Battery Charge Level <20%	Battery Charging
DATA	Data Transmission	
LINK	Not Connected to iSPECI	Connected to iSPECI

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3 How to use the Adapter

1.Click on the PWR button to switch on the device (blue LINK LED will flash)
2.Plug iSPECI BLE Adapter into the diagnostic serial interface on control PCB
3.Activate Bluetooth on your mobile device
4.Open iSPECI app on your mobile device, tap "Connect", choose "Wireless connection" and select "iSPECI BLE Adapter" from the list
5. When done, click on the PWR button for 5 seconds to switch it off manually and unplug the adapter
 (in case the iSPECI BLE Adapter is unplugged from control without switching it off, then it will switch off automatically after 15 min. It is recommended to turn it off manually to save battery time)

4 Charge the Battery

The iSPECI BLE Adapter can be charged with the included (or any other) MicroUSB cable. A full battery charge will last for 8 hours of usage. A full recharge will take around 45 minutes.
The battery has a rated capacity of 300mAh (minimal capacity > 280mAh) and after 300 charging cycles the capacity will have at least 70% of its initial capacity.
Remarks:
Once the battery is defect, the complete adapter has to be replaced; no possibility to replace the battery.

5 Mechanical Dimensions

Remarks: The label shown above is valid for the first released version, in case of modification on this adapter, then the Model version will change (at the moment the version is 1.0)

Important: The label has to be put on the adapter and also on the package.

Length: 58mm (48mm without the connectors)
Width: 31mm
Depth: 8.5mm
Weight: 62g

The housing has to be at least UL94 HB.
The adapter has to be at least IP20.

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6   BLE App. Programming Interface User`s Commands

iSPECI BLE Adapter	
Peripheral Id	5C6DE224-55D3-8629-7F9E-7A2E173DE61D
Services	
Battery Service	180F
Device Information	180A
Schindler Service	BC407FA3-4B83-432A-ABDD-A845B4AFA772
Generic Attribute	1801
Generic Access	1800
OTA Service	1D14D6EE-FD63-4FA1-BFA4-8F47B42119F0
OTA Slot Manager Service	4EC89223-718A-4D0A-BBBD-6173357E6650

Service - Battery Service 180F			
Characteristics	**UUID**	**Description**	**Properties**
Battery level state	2A1B	0x0000 (0%) - 0x6400 (100%)	read only

Service - Device Information 180A			
Characteristics	**UUID**	**Description**	**Properties**
Manufacturer Name String	2A29	uConnect	read only
Model Number String	2A24	1.0	read only
Serial Number String	2A25	Unique BD-Address in HEX format XX-XX-XX-XX-XX-XX	read only
Firmware Revision String	2A26	2.1.9	read only

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Service - Schindler Service BC407FA3-4B83-432A-ABDD-A845B4AFA772			
Characteristics	**UUID**	**Description**	**Properties**
RX (Received Bytes)	64B872C8-DC45-11E8-9F8B-F2801F1B9FD1		notify only
Client Characteristic Configuration	2902		notify only
TX (Byte to Write)	64B86F08-DC45-11E8-9F8B-F2801F1B9FD1	max. 20 Bytes	Write
COM Setting Configuration	64B87444-DC45-11E8-9F8B-F2801F1B9FD1	8 Bytes (see paragraph 6.1/6.2)	read, write
Device Name	64B877DC-DC45-11E8-9F8B-F2801F1B9FD1	15 Bytes for ASCII Code	Read, Write
PIN	64B877DD-DC45-11E8-9F8B-F2801F1B9FD1	max. 6 Bytes in ASCII ("000000" or 0x303030303030 for disable)	Read, Write
MacID	64B87584-DC45-11E8-9F8B-F2801F1B9FD1	Not used yet	Read, Write
Device Control Parameters	64B877EE-DC45-11E8-9F8B-F2801F1B9FD1	2 Bytes	Write

Service – Generic Attribute 1801			
Characteristics	**UUID**	**Description**	**Properties**
Service Changed	2A05		Notify only
Client Characteristic Configuration	2902		
Database Hash	2B2A		Read
Client Supported Features	2B29		Read/Write

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Service – Generic Access
1800

Characteristics	UUID	Description	Properties
Device Name	2A00		Read/Write
Appearance	2A01		Read

Service – OTA Service
1D14D6EE-FD63-4FA1-BFA4-8F47B42119F0

Characteristics	UUID	Description	Properties
OTA Control	F7BF3564-FB6d-4E53-88A4-5E37E0326063		Write
OTA Data	984227F3-34FC-4045-A5D0-2C581F81A153		Write

Service – OTA Slot Manager
4EC89223-718A-4D0A-BBBD-6173357E6650

Characteristics	UUID	Description	Properties
Upload slot	2E31606B-C6B6-469E-B9C1-39335A530ADA		Read/Write
Bootloader Slot	4FAB0BF0-4C27-48C8-807F-D0D094CD1DB3		Write

6.1   Com Setting Config

B0 (binary)	B0 (hex)	Port Selection
0b0000 0000	0x00	RS232 normal
0b0000 0001	0x01	RS232 normal
0b0000 0010	0x02	RS422
0b0001 0001	0x11	RS232 reversed
0b0001 0010	0x12	RS422
B1 (binary)	**B1 (hex)**	**Flow Control**
0b0000 0000	0x00	None
0b0000 0001	0x01	CTS/RTS

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B2 (binary)	B2(hex)	Stop delay [ms]
0b000 00000	0x00	5
0b0000 0001	0x01	7
0b0000 0010	0x02	10
0b0000 0011	0x03	15
0b0000 0100	0x04	30
0b0000 0101	0x05	50
0b0000 0110	0x06	100
0b0000 0111	0x07	200
B3 (binary)	**B3 (hex)**	**Parity**
0b0000 0000	0x00	None
0b0000 0001	0x01	Even
0b0000 0010	0x02	Odd
B4 (binary)	**B4 (hex)**	**Baud rate**
0b0000 0000	0x00	2400
0b0000 0001	0x01	4800
0b0000 0010	0x02	9600
0b0000 0011	0x03	14400
0b0000 0100	0x04	19200
0b0000 0101	0x05	38400
0b0000 0110	0x06	57600
0b0000 0111	0x07	115200
0b0000 1111	0x08	230400
B5 (binary)	**B5 (hex)**	**Stop bits**
0b0000 0000	0x00	1
0b0000 0001	0x01	1,5
0b0000 0010	0x02	2
B6 (binary)	**B6 (hex)**	**Data bits**
0b0000 0000	0x00	8 (fixed)
B7 (binary)	**B7 (hex)**	**BreakTime (ms)***

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0b0000 0000	0x00	disabled
0b0000 0001	0x01	1
0b0111 0000	0x70	112
0b1111 1111	0xFF	255

*After break time (break state duration) there will be a delay of around 1ms before sending a message via Tx. When break time is enabled there will be always a break state before message is sent.
(available only with RS232 interface)

6.2 Device Control Parameters

Function	Bytes to write	Remarks
Reboot device	0xAA01	
Restore Default Setting	0xAA04	
Enable OTA	0xAA08	Not used
Put Device into Sleep	0xAA10	Not used

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7 Connectors on the Adapter

Following connectors are on the Adapter:

RS 232
Connector type: DSUB9 Female

Pin Number	Signal description
1	Not Connected
2	TXD (Transmitted Data)
3	RXD (Received Data)
4	Not Connected
5	GND
6	Not Connected
7	CTS (Clear to Send)
8	RTS (Request to Send)
9	Not Connected

RS 422
Connector type: DSUB9 Male

Pin Number	Signal description
1	Not Connected
2	Not Connected
3	B (differential received data)
4	Y (differential transmitted data)
5	GND
6	Not Connected
7	A (differential received data)
8	Z (differential transmitted data)
9	Not Connected

Battery charging
Connector type: MicroUSB 5 poles

Pin Number	Signal description
1	5V DC
2	Not Connected
3	Not Connected
4	Not Connected
5	GND

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8 Paper to be delivered with the adapter

One paper, with following information, has to be delivered together with the adapter

iSPECI BLE Adapter

LED	Flashing	Solid
BAT	Battery level < 20%	Charging
DATA	Data transmission	
LINK	Not connected to iSPECI	Connected to iSPECI
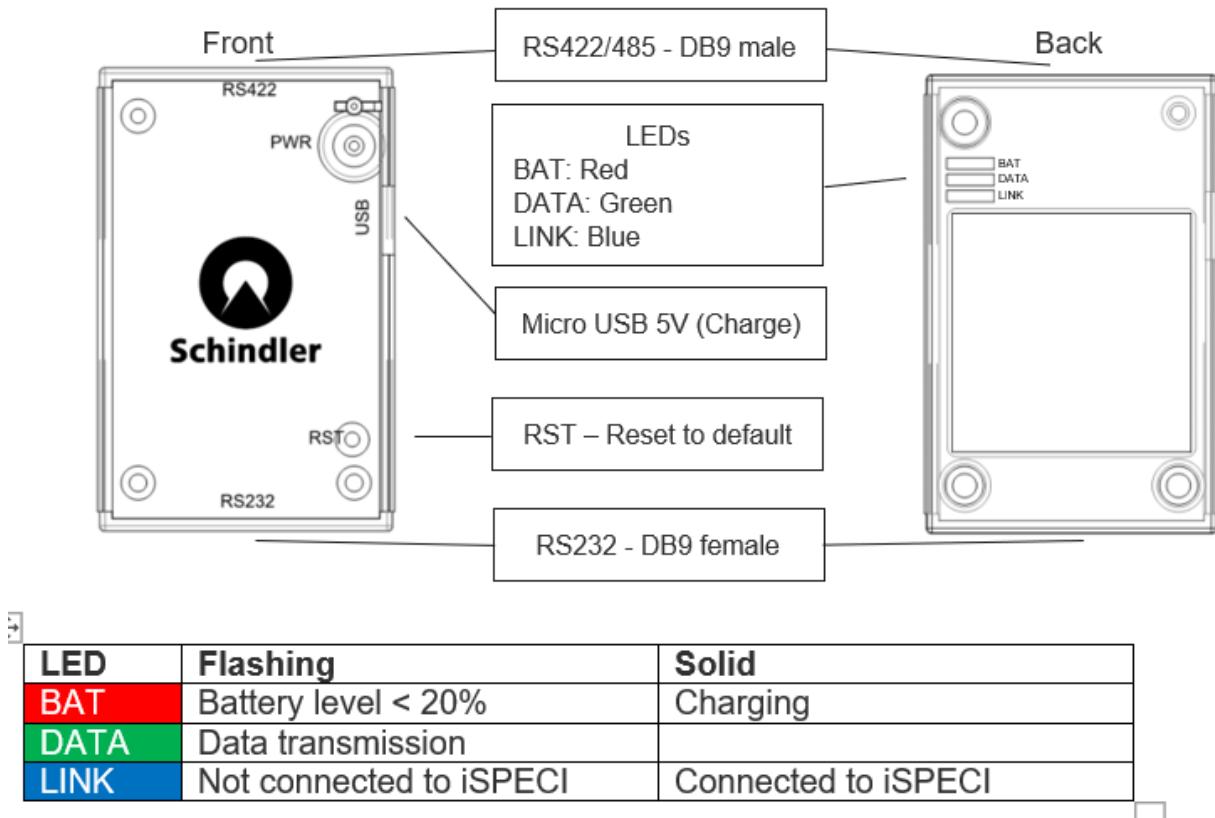
First time charge the module fully (8 hours) as soon as you receive it.
当你获得此模块后尽可能的第一次把电充满（8 小时）

If more information is required, please scan the following QR Code
请扫描图中二维码获取更多信息。

There is a QR code available directly on the adapter. In case you have any problems to read it, please use the zoom function of the mobile phone camera.
二维码会贴在适配器上，如在读取中遇到问题，请使用手机的图像放大功能.

Shorted URL link has been used to generate the QR code on the adapter because of space problems.
If you can not scan QR code that contains shorted URL link, please scan the above QR code on paper.
由于空间问题所以在适配器上粘贴的为压缩过的二维码。如果您的手机无法通过压缩的二维码获取信息，请直接扫描纸上的二维码。(需要连接迅达公司内部网络)

Address of EU Importer:

Schindler Supply Chain Europe Ltd.
Via della Pace 22
6600 Locarno
Switzerland

Address of the China Importer:

Schindler (China) Elevator Co. Ltd.
No. 555 Xingshun Road
Jiading District
201815 Shanghai

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9 Environmental Conditions

Ambient temperature range	-10 to +50 °C
Max Humidity	95%, non-condensing
Application altitude	up to 4000 m above sea level
Chemically active substances	3C2, according IEC 721-3-3

10 Environmental Protection Requirements

The supplier shall ensure the fulfillment of the following ecological requirements
Prohibited Substances:
The product shall not contain any hazardous substances restricted by REACH Regulation 1907/2006/EC and RoHS Directive 2011/65/EC.
Substances to be avoided:
The use of hazardous substances as listed below shall be avoided

- Substances listed on the ECHA candidate list of Substances of Very High Concern (SVHC) above 0.1% w/w
- Chromium VI for metallic surface coatings, zinc layers and pigmented plastics

Declaration
A supplier declaration of hazardous substances shall be provided declaring any substance still existing in the product and confirming legal compliance.

11 Supplier / Manufacturer obligations

The iSPECI BLE adapter shall be provided with manufacturer part number and Schindler logo, engraved or with a label (for part number please refer to the doc E 50000606).
The supplier / manufacturer shall assure the traceability of every supplied material, at the level required by ISO 9000 family standard. In case of claim / failure the supplier shall be able to trace all the units supplied with the same order lot of the failed unit.

The battery FT702025P from Manufacturer Helix Co Ltd has to be used because this battery was tested according to the following standards and passed the tests

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<u>Requested by the CE:</u>

-   IEC62133 Secondary cell and battery containing alkaline or other non-acid electrolytes: safety requirements for portable sealed secondary ithium cells

-   IEC 62368-1 Audio/video, information and communication technology equipment - Part 1: Safety requirements

<u>Requested for global shipping:</u>

-   IEC62281 Safety of primary and secondary lithium cells and battery during transport: Drop Test

-   UN38.3 Test Summary and Supplier Inquiry Form Lithium Battery Service in English for batteries

-   UN38.3 Test Summary and Supplier Inquiry Form Lithium Battery Service in English for cells

-   United Nations "Recommendation on the TRANSPORT OF DANGEROUS GOODS" Manual of Test sand Criteria (ST/SG/AC.10/11/Rev.7 Section 38.3) for cell

-   United Nations "Recommendation on the TRANSPORT OF DANGEROUS GOODS" Manual of Test sand Criteria (ST/SG/AC.10/11/Rev.7 Section 38.3) for pack

No other battery can be used.

A label, with following informations, has to be put directly on the battery:

-   Type of battery
-   Manufacturer and part number
-   Rated capacity
-   Nominal voltage
-   Certifications
-   Polarity (+ and -)
-   Date of manufacture

Polymer Li-ion Rechargeable Battery

Model : FT702025P
- Voltage : 3.7VDC
Capacity : 300mAh_1.11Wh
IEC 62133, UN38.3 Certified

Caution :   1ICP8/21/27
+ Do not incinerate, disassemble, or used in high temp.
Do not charge except on the specified charging condition.
Do not crash or modify.
Date Code : 20A15
Manufactured by HELIX CO.,LTD.

Example of the label:

Remarks: Data Code: 20A15 means:
20 is the year
A is the month
15 is the day

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Considering that the Polymer Li-on rechargeable battery pack (Polymer Li Cells) belongs to the dangerous goods, it is important that a label is placed outside the packaging indicating that contains dangerous goods.

11.1 Compliances

This iSPECI BLE adapter has been designed to be compliant to the following directives:

- For Europe: RED (2014/53/EU) and Electromagnetic Compatibility Directive (2014/30/EU)
- For America: FCC Part 2 Section 2, see also paragraph 11.2
- No SRRC certification required because this device is NOT sold to the Chinese open market
- RoHS : 2011/65/EU and 2015/863/EU

The iSPECI BLE Adapter shall report CE marking and all required indications.

At the moment this component has the CE certification and SRRC certification is not required
FCC certification is on going, not yet finished.

Note: The manufacturer shall ensure the compliance with the Bluetooth 5.2 specification released by the Bluetooth SIG.

In particular, it shall be ensured that each device has a unique BD-Address as described in the specifications.

11.2 Federal Communications Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.

-Increase the separation between the equipment and receiver.

CAUTION:

Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

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RF exposure warning

The equipment complies with FCC RF exposure limits set forth for an uncontrolled environment. The equipment must not be co-located or operating in conjunction with any other antenna or transmitter

11.3   Testing and Final Setup

The adapter has to be tested before being shipped to Schindler, following functions have to be tested:

-Bluetooth interface
-RS232 interface
-RS422 interface
-Connection / Disconnection
-Data transfer
-FW version
-Battery charge

The FW version has to be the 2.1.9

Before shipping the adapter, the battery charge has to be between 20% and 30%, the charge can NOT be more than 30% before shipping.

Unique BD-Address in HEX format XX-XX-XX-XX-XX-XX has to be stored into the UUID 2A25

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