Product training – BCS3678ex IS series overview of possible connections

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BCS3678ex-IS Bluetooth – connection options

Picture	Option
	Option 1 Connection via Universal Supply Module to a PC/Host* in safe area.
	Option 2 Connection via Base station to a PC/Host* in safe area.
	Option 3 Connection via Universal Supply Module to a HMI certified for use in Zone 1/21
	Option 4 Connection via Supply Module Ex i to a HMI certified for use in Zone 1/21
	Option 5 Connection via Smart USB Device Bluetooth to a HMI certified for use in Zone 1/21
	Option 6 Connection via Bluetooth to another Bluetooth device in safe area or hazardous location in Zone 1/21

About PC/Host*:
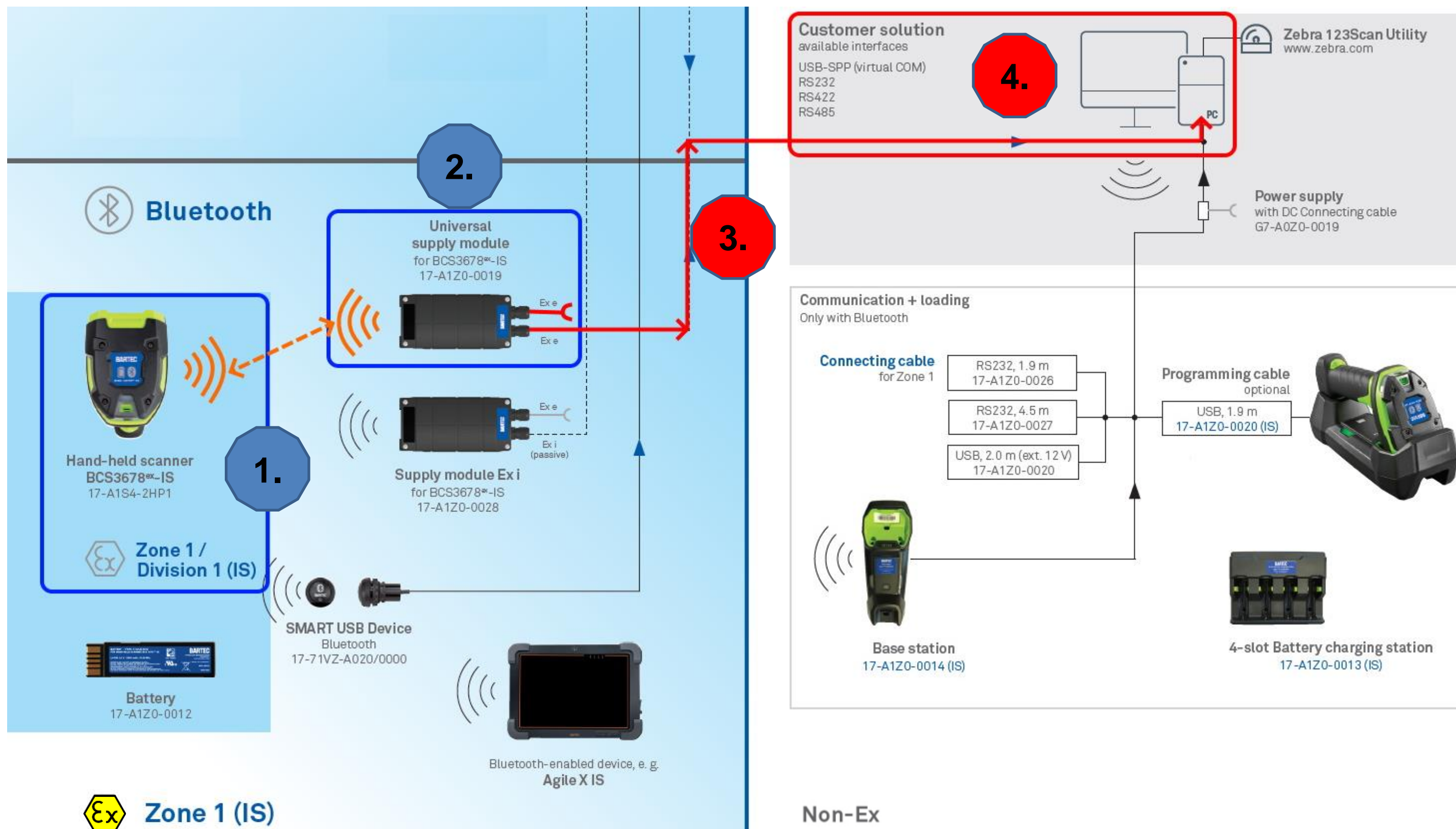
The designation PC/Host covers a wide range of possible devices to which the BCS3678ex-IS can be connected.

- PC with operating system e.g. Windows
- remote station
- PLC
- Scale system
- Any other system with a compatible interface and the ability to process serial data.

Important is that the system need to have a compatible interface that scanner can be connected.
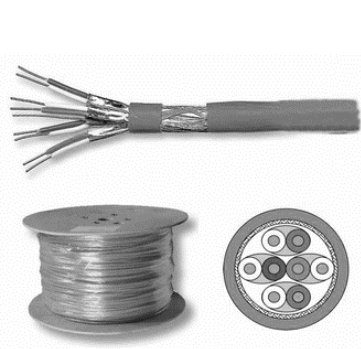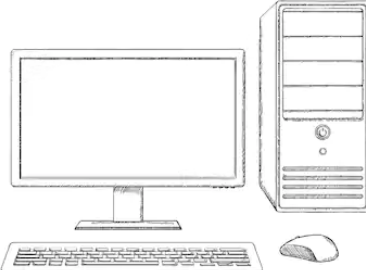
Option 1: BCS3678ex-IS connection via Universal Supply Module to a PC/Host* in safe area.

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Bluetooth

2.

Universal supply module
for BCS3678ex-IS
17-A1Z0-0019

Ex e
Ex e

3.

Supply module Ex i
for BCS3678ex-IS
17-A1Z0-0028

Ex e
Ex i (passive)

Hand-held scanner BCS3678ex-IS
17-A1S4-2HP1

1.

Zone 1 / Division 1 (IS)

SMART USB Device
Bluetooth
17-71VZ-A020/0000

Battery
17-A1Z0-0012

Bluetooth-enabled device, e. g. Agile X IS

Zone 1 (IS)

Customer solution
available interfaces
USB-SPP (virtual COM)
RS232
RS422
RS485

4.

Zebra 123Scan Utility
www.zebra.com

PC

Power supply
with DC Connecting cable
G7-A0Z0-0019

Communication + loading
Only with Bluetooth

Connecting cable
for Zone 1

| RS232, 1.9 m 17-A1Z0-0026 |
| RS232, 4.5 m 17-A1Z0-0027 |
| USB, 2.0 m (ext. 12 V) 17-A1Z0-0020 |

Programming cable
optional
USB, 1.9 m
17-A1Z0-0020 (IS)

Base station
17-A1Z0-0014 (IS)

4-slot Battery charging station
17-A1Z0-0013 (IS)

Non-Ex

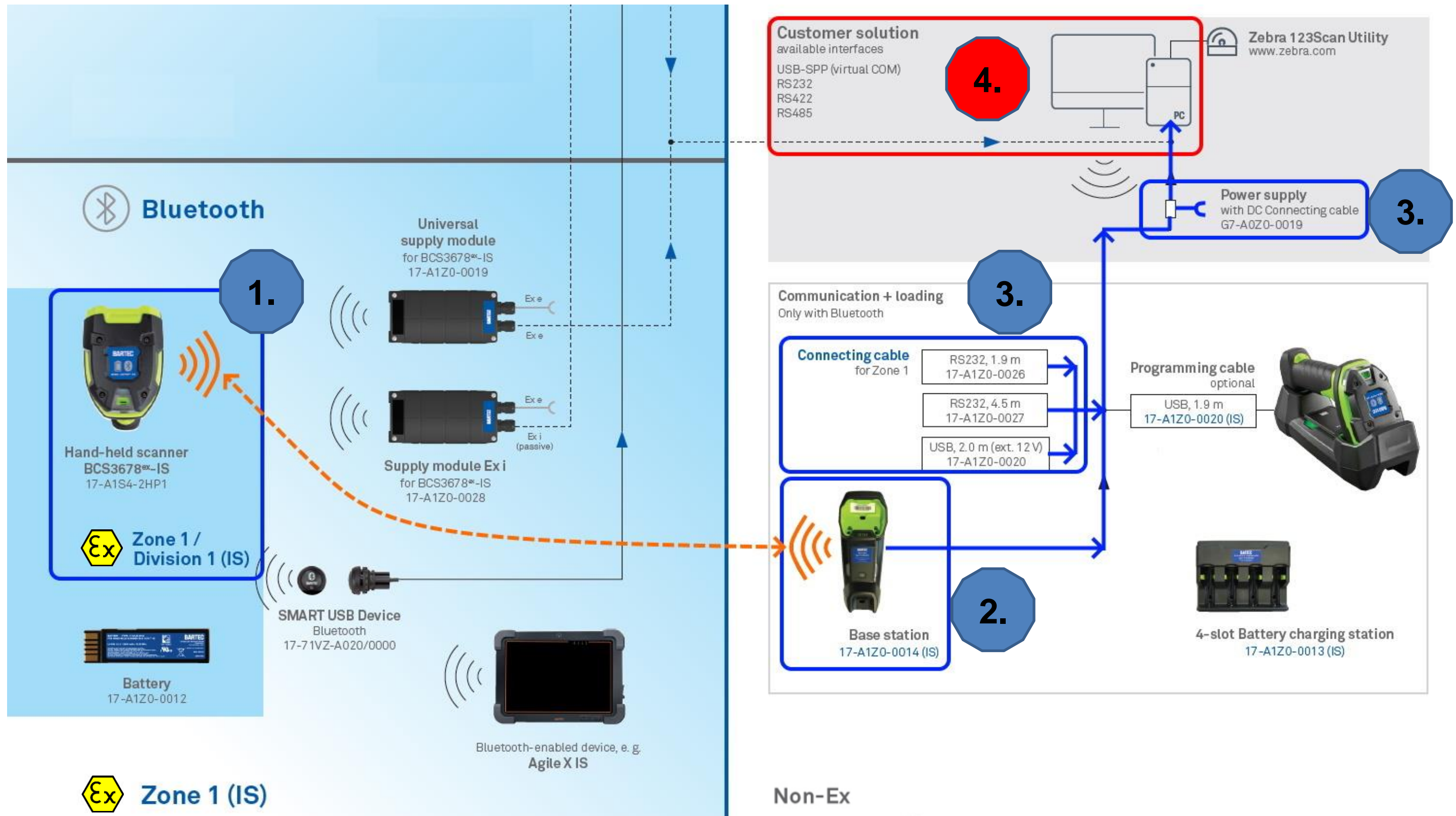Blue = Components from BARTEC for use in hazardous location Zone 1/21
Red = Customer-specific components (not supplied by BARTEC)

Required parts

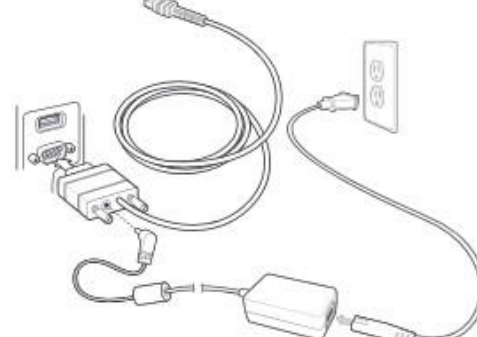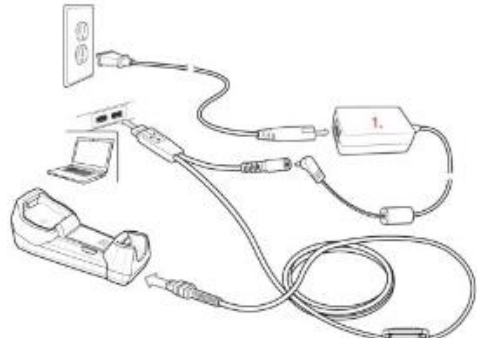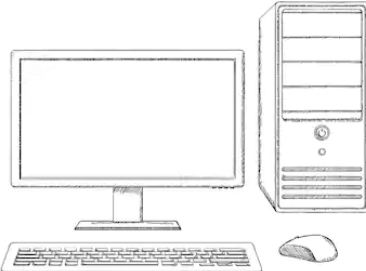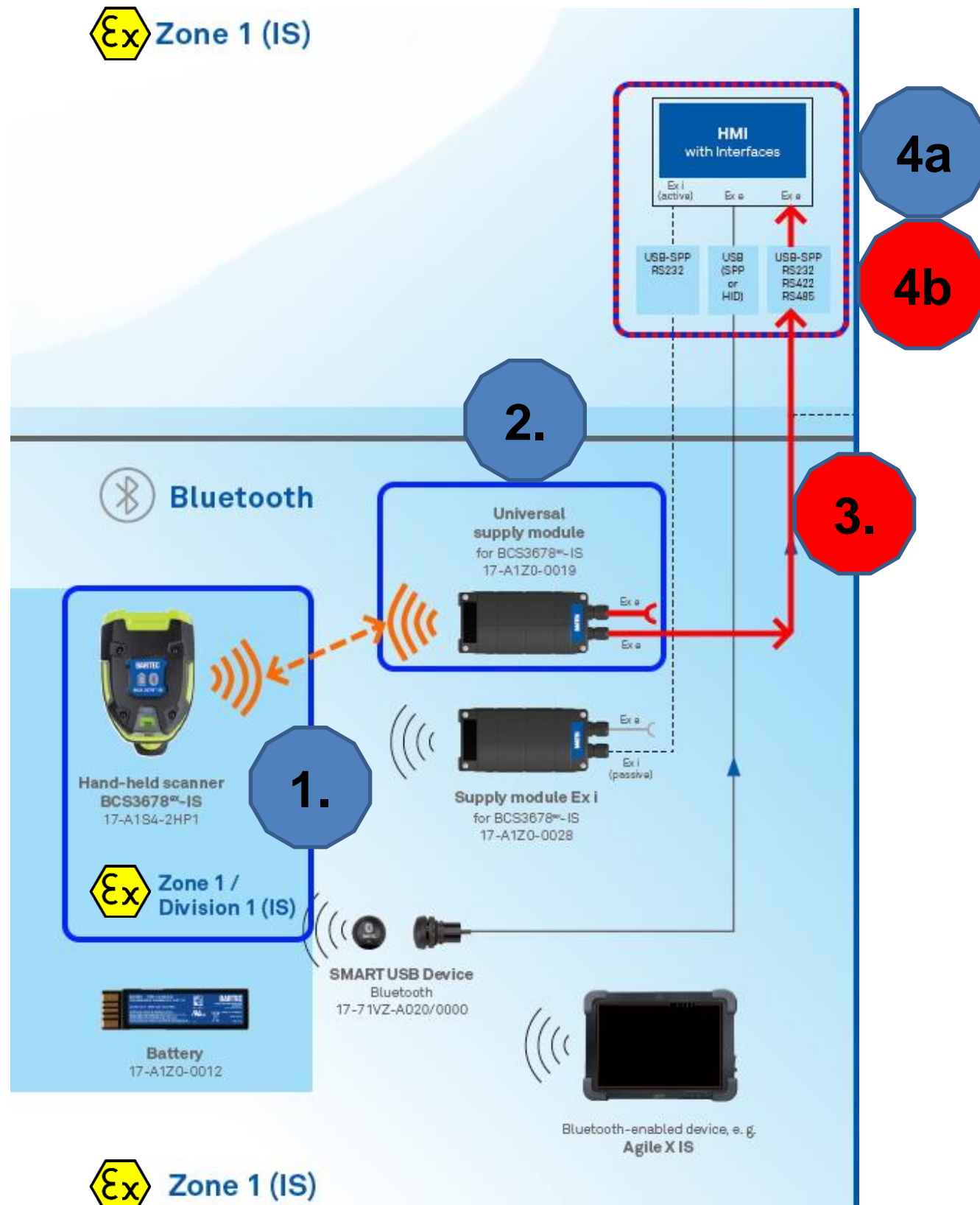| No.	Picture	Part	Interfaces and their Ex-protection type
1.		**BCS3678ex-IS Bluetooth** • ATEX/IECEx Zone 1/21 • NEC/CEC Division 1 P/N: 17-A1S4-2xxx	**Bluetooth interface for:** • Class 1, Version 4.0 (LE)
2.		**Universal supply module Bluetooth** • ATEX/IECEx Zone 1/21 P/N: 17-A1Z0-0019	**Power supply: (Ex e)** • AC 100 V - 240 V ± 10% / 50-60 Hz • DC 24 V ± 10% / 0.4 A **Data line: (Ex e to PC/Host)** • RS232 (TxD from Scanner/USM to PC/host only) • RS422 • RS485 • USB-SPP (Serial Port Profile)
3.	(sample picture)	**Connection cable** Customer specific and not supplied by BARTEC. We recommend shielded cables e.g. CAT5 or higher.	**Data line: (Ex e to PC/Host)** • RS232 (TxD from Scanner/USM to PC/host only) • RS422 • RS485 • USB-SPP (Serial Port Profile) Cable laying is carried out by the customer in accordance with the Ex-protection requirements of Exe.
		Power Cable Customer specific and not supplied by BARTEC.	**Power supply: (Ex e)** • AC 100 V - 240 V ± 10% / 50-60 Hz • DC 24 V ± 10% / 0.4 A
4.		**PC/Host** Customer specific PC/Host with interface for connection to Universal Supply Module (USM).	**PC/Host** Customer specific and installed in safe area.

Option 2: BCS3678ex-IS connection via Base station to a PC/Host* in safe area.

Blue = Components from BARTEC for use in hazardous location Zone 1/21
Red = Customer-specific components (not supplied by BARTEC)

Required parts

No.	Picture	Part	Interfaces and their Ex-protection type
1.		**BCS3678ᵉˣ-IS Bluetooth** • ATEX/IECEx Zone 1/21 • NEC/CEC Division 1 P/N: 17-A1S4-2xxx	**Bluetooth interface for:** • Class 1, Version 4.0 (LE)
2.		**Base station** • Only for use in safe area P/N: 17-A1Z0-0014	**Power supply:** • Input: AC 100 V - 240 V ± 10% / 50-60 Hz • Output: DC 12 V / 4.6 A / 50 W **Data line: (to PC/Host)** • RS232 • USB-HID (Human Interface Device) • USB-SPP (Serial Port Profile)
3.	Sample picture for RS232 cable with power supply	**Connection cable** between base station and PC • Only for use in safe area **Part numbers:** RS232; 1.9 m; plain => 17-A1Z0-0026 RS232; 4.5 m; plain => 17-A1Z0-0027 USB; 1.9 m; plain => 17-A1Z0-0020	**Data line:** • RS232 • USB (supports –HID or –SPP mode)
	Sample picture for USB cable with power supply	**Power Supply with DC connection cable** between connection cable and power outlet • Only for use in safe area P/N: G7-A0Z0-0019	**Power supply:** • AC 100 V - 240 V ± 10% / 50-60 Hz • DC 24 V ± 10% / 0.4 A
4.		**PC/Host** Customer specific PC/Host with interface for connection to Universal Supply Module (USM).	**PC/Host** Customer specific and installed in safe area.

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Option 3: BCS3678ᵉˣ-IS connection via Universal Supply Module to a HMI certified for use in Zone 1/21

Blue = Components from BARTEC for use in hazardous location Zone 1/21
Red = Customer-specific components (not supplied by BARTEC)

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No.	Picture	Part	Interfaces and their Ex-protection type
1.	(Ex)	**BCS3678ex-IS Bluetooth** • ATEX/IECEx Zone 1/21 • NEC/CEC Division 1 P/N: 17-A1S4-2xxx	**Bluetooth interface for:** • Class 1, Version 4.0 (LE)
2.	(Ex)	**Universal supply module Bluetooth** • ATEX/IECEx Zone 1/21 P/N: 17-A1Z0-0019	**Power supply: (Ex e)** • AC 100 V - 240 V ± 10% / 50-60 Hz • DC 24 V ± 10% / 0.4 A<hr>**Data line: (Ex e to PC/Host)** • RS232 (TxD from Scanner/USM to PC/host only) • RS422 • RS485 • USB-SPP (Serial Port Profile)
3.	(Ex) (sample picture)	**Connection cable** Customer specific and not supplied by BARTEC. We recommend shielded cables e.g. CAT5 or higher.<hr>**Power Cable** Customer specific and not supplied by BARTEC.	**Data line: (Ex e to PC/Host)** • RS232 (TxD from Scanner/USM to PC/host only) • RS422 • RS485 • USB-SPP (Serial Port Profile) Cable laying is carried out by the customer in accordance with the Ex-protection requirements of Ex e.<hr>**Power supply: (Ex e)** • AC 100 V - 240 V ± 10% / 50-60 Hz • DC 24 V ± 10% / 0.4 A
4a	(Ex)	**HMI Polaris Series** • ATEX Zone 1/21 P/N: on request by ESS-AUT business unit Compatible Polaris series: • Polaris Professional with "Ex e RS422" or "Ex e USB" • Polaris II Professional with "Ex e RS422" or "Ex e USB" • Polaris Smart HMI with "Ex e USB" • Polaris Remote Digital with "Ex e USB" • Polaris Zero Client with "Ex e RS 422" or "Ex e USB"	**Data line: (Ex e to HMI)** It is important that on the Polaris device is a free interface in "Ex e RS422 or "Ex e USB" available. Then the "Universal Supply Module" interface can be connected to the Polaris device. The "Universal Supply Module" powers the scanner.

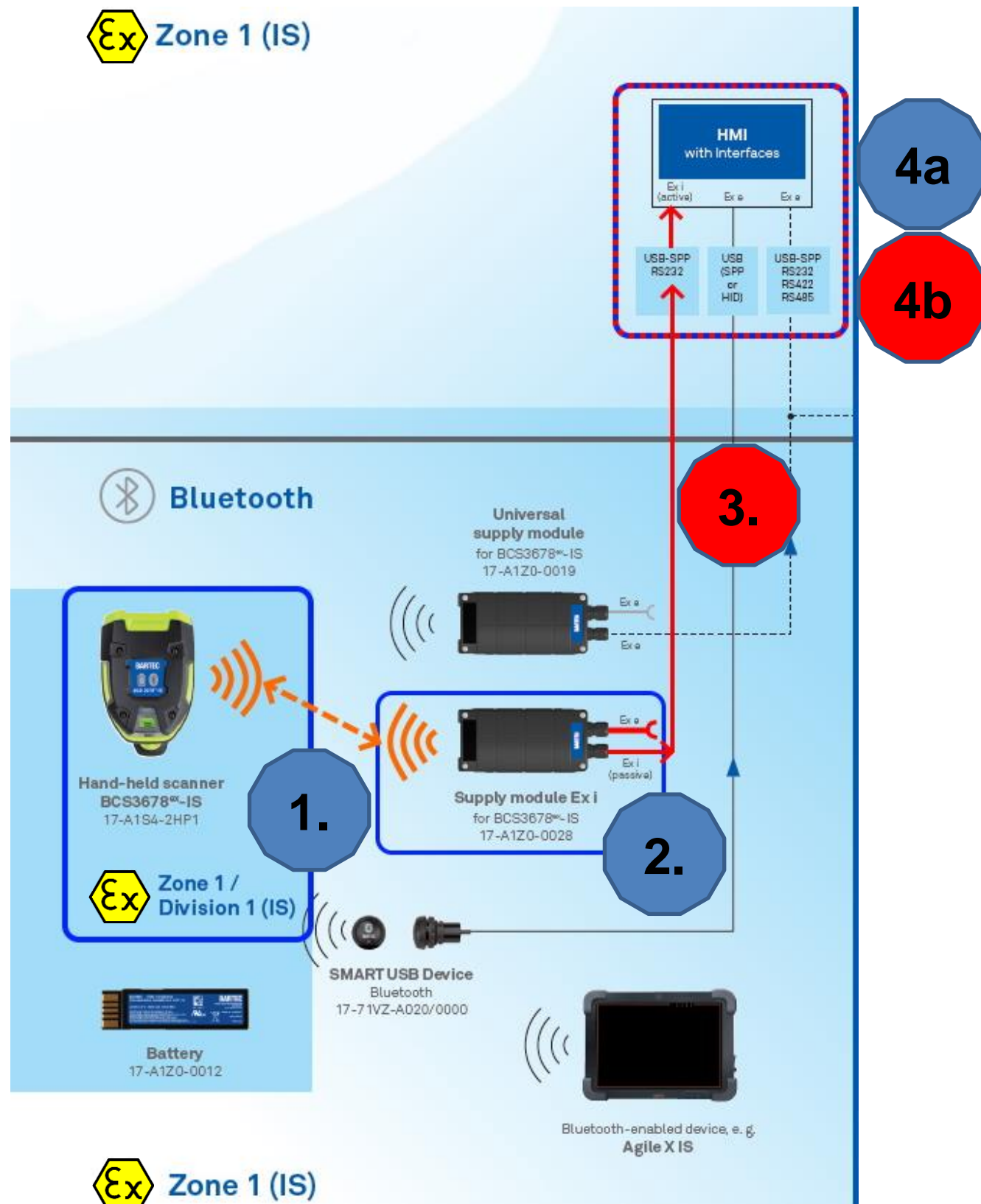|		
4b	**HMI – Ex version of 3rd party manufacturer** • ATEX Zone 1/21	**It is possible but customer need to check that Ex-relevant values are compatible with HMI manufacturer.** **A compatible interface in "Ex e" version must be available** **Data line: (Ex e to HMI)** • RS232 (TxD from Scanner/USM to PC/host only) • RS422 • RS485 • USB-SPP (Serial Port Profile) Ex-relevant input parameter of BARTEC Universal Supply Module 	Input	Ex-Model	 |---|---| | Power supply	Ex e	 | Data interface	Ex e	

Option 4: BCS3678ex-IS connection via Supply Module Ex i to a HMI certified for use in Zone 1/21

Blue = Components from BARTEC for use in hazardous location Zone 1/21
Red = Customer-specific components (not supplied by BARTEC)

Required parts

No.	Picture	Part	Interfaces and their Ex-protection type
1.		**BCS3678ex-IS Bluetooth** • ATEX/IECEx Zone 1/21 • NEC/CEC Division 1 P/N: 17-A1S4-2xxx	**Bluetooth interface for:** • Class 1, Version 4.0 (LE)
2.		**Supply module Ex i Bluetooth** • ATEX/IECEx Zone 1/21 P/N: 17-A1Z0-0028	**Power supply: (Ex e)** • AC 100 V - 240 V ± 10% / 50-60 Hz • DC 24 V ± 10% / 0.4 A **Data line: (Ex i/passive to PC/Host)** • RS232 (TxD from Scanner/USM to PC/host only) • USB-SPP (Serial Port Profile)
3.	(sample picture)	**Connection cable** Customer specific and not supplied by BARTEC. We recommend shielded cables e.g. CAT5 or higher.	**Data line: (Ex i to HMI)** • RS232 (TxD from Scanner/USM to PC/host only) • USB-SPP (Serial Port Profile) Cable laying is carried out by the customer in accordance with the Ex-protection requirements of Ex i.
		Power Cable Customer specific and not supplied by BARTEC.	**Power supply: (Ex e)** • AC 100 V - 240 V ± 10% / 50-60 Hz • DC 24 V ± 10% / 0.4 A
4a		**HMI Polaris Series** • ATEX Zone 1/21 P/N: on request by ESS-AUT business unit Compatible Polaris series: "Ex i scanner interface" required! • Polaris Professional with "Ex i scanner interface" • Polaris II Professional with "Ex i scanner interface" • Polaris Comfort with "Ex i scanner interface" • Polaris Basic with "Ex i scanner interface" • Polaris Remote Analog (without touchscreen) with "Ex i scanner interface" • Polaris Remote Digital with "Ex i scanner interface" • Polaris Zero Client with "Ex i scanner interface"	**Data line: (Ex i to HMI)** It is important that on the Polaris device is a free scanner interface in Ex i available. Then the "Supply Module Ex i" interface can be connected to the Polaris device. The "Supply Module Ex i" powers the scanner. The HMI Ex i interface for the data lines is the active part.

4b

**HMI – Ex version of 3rd party manufacturer**
- ATEX Zone 1/21

It is possible but customer need to check that Ex-relevant values are compatible with HMI manufacturer.
A compatible interface in "Ex i" version must be available
Data line: (Ex i to HMI)
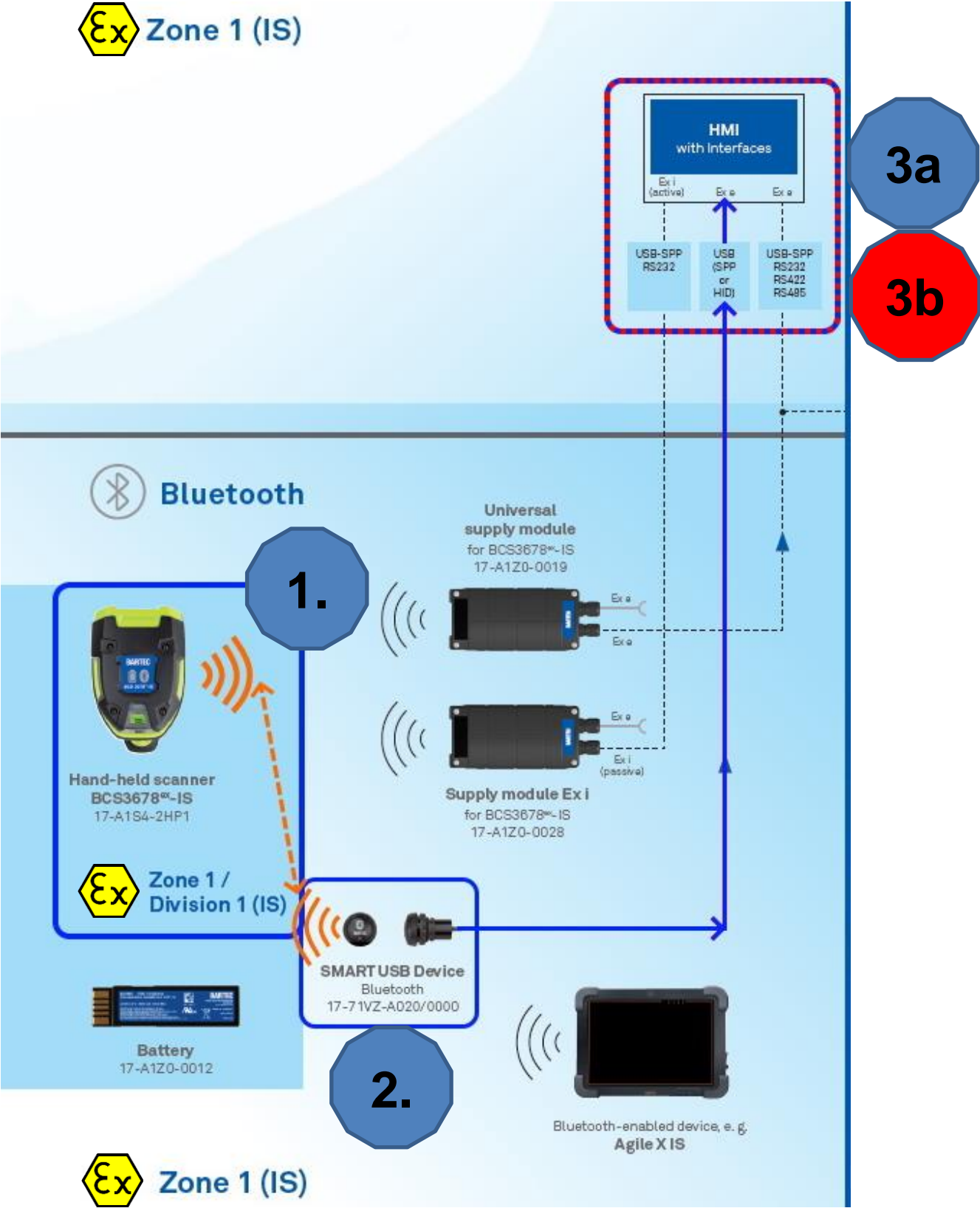- RS232 (TxD from Scanner/USM Ex i to PC/host only)
- USB-SPP (Serial Port Profile)

The HMI interface must be active, because the supply module Ex i interface is passive.
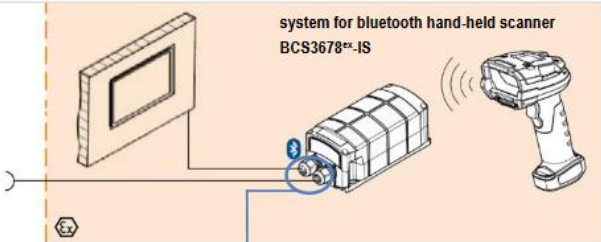
Ex-relevant input parameters for supply module Ex i	
Input	**Ex version**
Power supply	Ex e
Data cable	Ex i (passive)
	USB-SPP (Serial Port Profile)
	RS232 (only TxD)
Type: 17-A1Z0-0025/** + 17-A1Z0-0028/****	
U_i	6 V_{DC}
I_i	500 mA
P_i	2 W
C_i	5,7 µF
L_i	0 µH

Ex i observation: (so it is judged whether the values are compatible to each other)		
Active Interface	Values must relate to each other as follows	Passive Interface
U_o	≤	U_i
I_o	≤	I_i
P_o	≤	P_i
C_o	≥	C_i
L_o	≥	L_i

Option 5: BCS3678ᵉˣ-IS connection via Smart USB Device Bluetooth to a HMI certified for use in Zone 1/21
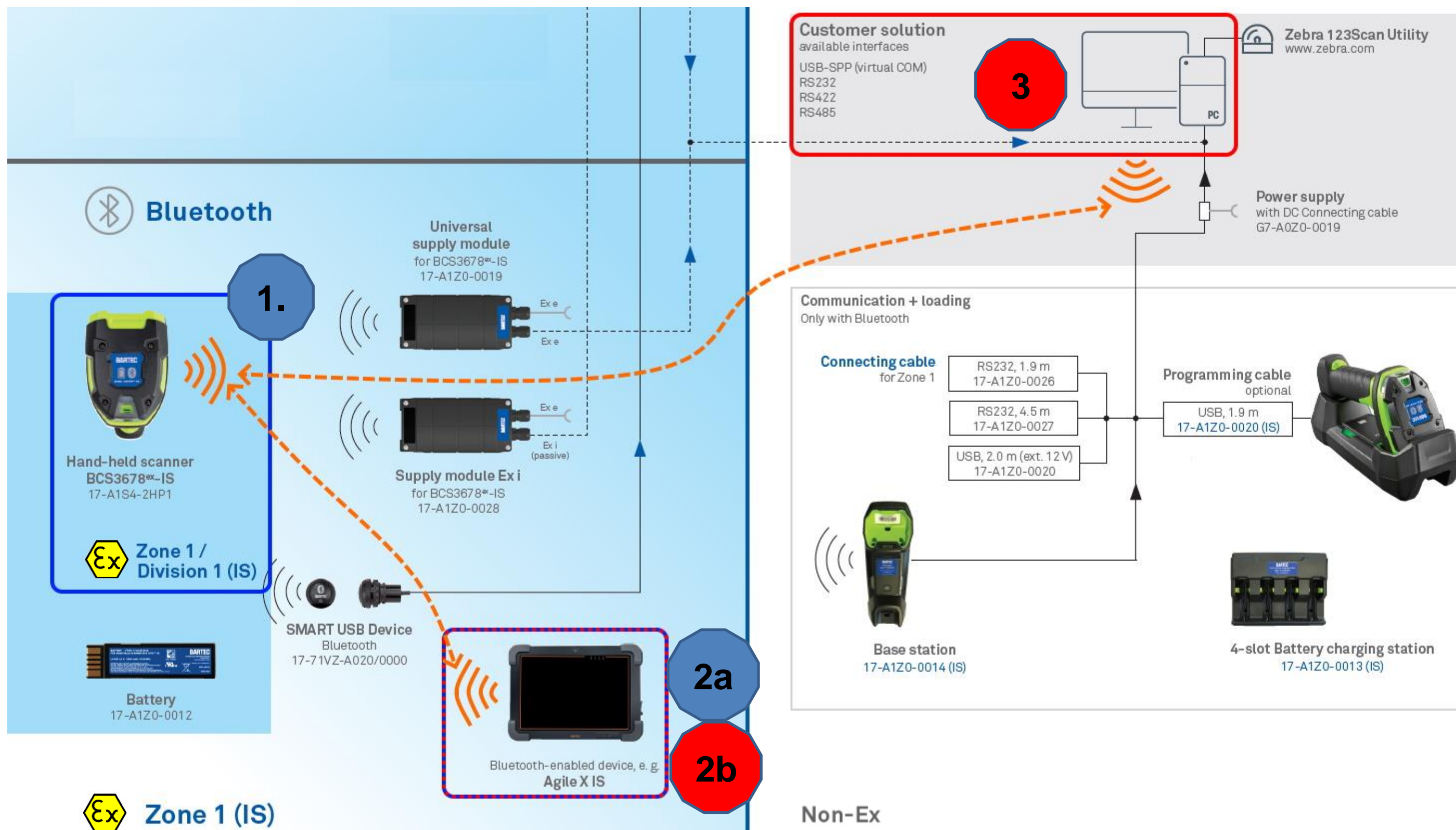

Blue = Components from BARTEC for use in hazardous location Zone 1/21
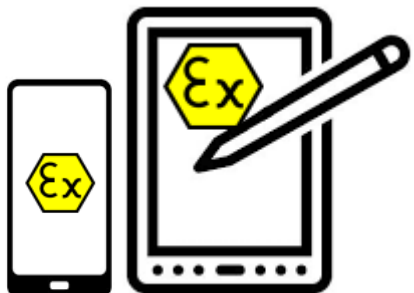**Red = Customer-specific components (not supplied by BARTEC)**

Required parts

No.	Picture	Part	Interfaces and their Ex-protection type
1.		**BCS3678ex-IS Bluetooth** • ATEX/IECEx Zone 1/21 • NEC/CEC Division 1 P/N: 17-A1S4-2xxx	**Bluetooth interface for:** • Class 1, Version 4.0 (LE)
2.		**SMART USB Device Bluetooth** • ATEX/IECEx Zone 1/21 P/N: 17-71VZ-A020/0000	**Data line: (Exe to PC/Host)** • USB-HID (Human Interface Device)
3a		**HMI Polaris Series** • ATEX Zone 1/21 P/N: on request by ESS-AUT business unit Compatible Polaris series: • Polaris Professional with "Ex e USB" • Polaris II Professional with "Ex e USB" • Polaris Zero Client "Ex e USB"	**Data line: (Exe to HMI)** USB-HID (Human Interface Device mode is supported – Incoming data can be processed as keyboard entry) USB interface provides the functional necessary values of $5V_{DC}/500mA$
3b		**HMI – Ex version of 3rd party manufacturer** • ATEX Zone 1/21	**It is possible but customer need to check that Ex-relevant values are compatible with HMI manufacturer.** **A compatible interface in "Ex e" version must be available** **Data line: (Ex e to HMI)** • USB-HID USB interface provides the functional necessary values of $5V_{DC}/500mA$

Option 6: BCS3678ex-IS connection via Bluetooth to another Bluetooth device in safe area or hazardous location in Zone 1/21

Blue = Components from BARTEC for use in hazardous location Zone 1/21
Red = Customer-specific components (not supplied by BARTEC)

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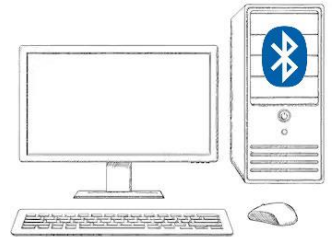
No.	Picture	Part	Interfaces and their Ex-protection type
1.		**BCS3678ex-IS Bluetooth** • ATEX/IECEx Zone 1/21 • NEC/CEC Division 1 P/N: 17-A1S4-2xxx	**Bluetooth interface for:** • Class 1, Version 4.0 (LE)
2a	 Sample picture Agile X IS	**BARTEC device with Bluetooth capability** • ATEX/IECEx Zone 1/21 • NEC Zone 1 / Division 1 Devices as example: • Tablet PC Agile X IS • Mobile Computer MC92N0 • Pixavi Phone • Smart USB Device Bluetooth	**Bluetooth interface for:** Class 1 or 2 Bluetooth Class and version is depending of the Mobile device. Bluetooth connection can be established with any kind of device in all areas.
2b		**Ex-certified 3rd Party PC/Host with Bluetooth capability** Customer specific PC/Host with Bluetooth interface. • Device must be certified for use in hazardous area.	**Bluetooth interface for:** Class 1 or 2 Bluetooth Class and version is depending of the Mobile device. Bluetooth connection can be established with any kind of device in all areas.
3		**3rd Party PC/Host with Bluetooth capability** Customer specific PC/Host with Bluetooth interface. Device can be used only in safe area.	**Bluetooth interface for:** Class 1 or 2 Bluetooth Class and version is depending of the PC/Host device. Bluetooth connection can be established with any kind of device in all areas.