Operating Manual

BCSi-1 *

Barcode scanner

Doc.Nr.:60000340
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The barcode scanner BCSI are designed to read all common barcodes 1D & 2D and to transmit these barcode data to an existing ASD (application supporting device) in hazardous or non-hazardous areas.

The BCSI is freely positionable in front of the barcode. A interactive vibration feedback after a successful scan is offered by the BCSI (an advantage for loud environments). There are bi-focus positions for capturing of max. focus-decoding area. The scanner provides exceptional depth of field on all bar code densities.

The BCSI provides built-in illumination which allows work in any ambient lighting condition — from total darkness to bright sunlight.

A wide selection of parameters may be configured to adapt the BCSI settings for your particular application.

The BCSI available as cable and as radio frequency version.

The cable scanner version has an intrinsically safe interface for power and data. The data transmission is realized via a serial interface. The cable version is available for low-power and high-power intrinsically safe power interfaces.

The radio frequency version has an intrinsically safe interface for charging of internal batteries in hazardous areas via intrinsically safe interfaces, such as for instance ExMod-1-2-3. The data transmission is realized via a radio frequency interface (Bluetooth). The radio frequency version is available with integrated 10mW and 100mW Bluetooth modules.

The radio frequency version disable the scanengine when charging is in process.

All versions of the BCSI developed for use in hazardous areas Zone 0, Zone 20, EPL Ga and EPL Da.
Various models of BCSi-1 * can be supplied:

- **C LP**: Cable barcode scanner Low Power.
  Barcode scanner with cable connection and low intrinsically safe input power at the
  power line. The connection interface to the other existing application supporting
  devices is realized via serial intrinsically safe interface.
  This variant is developed with internal energy buffer to provide the necessary power
  for the scanner electronic (duty cycle typ. 5%). A pre-charging of typ. 16h for this
  internal buffer is necessary before first operation.

- **C HP**: Cable barcode scanner High Power.
  Barcode scanner with cable connection and high intrinsically safe input power at the
  power line. The connection interface to the other existing application supporting
  devices is via serial intrinsically safe interface.

- **RF 10**: Radio frequency scanner (Bluetooth)
  Barcode scanner with data transmission by radio frequency with typ. radiated power
  of 10mW.
  This variant is developed with integrated Bluetooth module (Class 2) to transmit
  data to other existing application supporting devices. For charging of this cordless
  barcode scanner a intrinsically safe interface required (e.g. ExMod-1-2-3).

- **RF 100**: Radio frequency scanner (Bluetooth)
  Barcode scanner with data transmission by radio frequency with typ. radiated power
  of 100mW.
  This variant is developed with integrated Bluetooth module (Class 1) to transmit
  data to other existing application supporting devices. For charging of this cordless
  barcode scanner a intrinsically safe interface required (e.g. ExMod-1-2-3).

* : Can be any alphanumeric characters reserved for the manufacturer.

**Example:**

- **BCSi-RF100** = Radio frequency scanner (Bluetooth) with 100mW radiated power (Class 1).

For more details please refer to the attached drawings Nr. # 30100431 and #30100432.
Technical Data

For all BCSI versions:

Housing type: Stainless steel 1.4301 / AISI 304 (or on request)
Ingress protection: IP67
Operating temperature range: -20°C to +60°C (-4°F to 140°F), 15 to 95% rel. humidity, n. cond.
Storage temperature: -20 °C - +35°C (-4°F to 95°F), 15 to 85% rel. humidity, n. cond. -20 °C - +60°C (-4°F to 140°F), 15 to 85% rel. humidity, n. cond. (for one week)
Hazardous areas: Zone 0, Zone 20, EPL Ga, EPL Da (refer certificates)
Dimensions: 220 mm x 42 mm (8.67" x 1.65"), refer attached drawings
Weight: typ. 700g (24.7 oz), depending of variant
Classification of install. and use: Mobile device, hand-held device
Data Interface: RS232, typ.settings 9600bps, 8 data, 1 stop, no parity, no flow control
Scan engine: Bi-focus near 120mm / far 230mm (5" / 9")
Field of view: Horizontal: 32.2°, Vertical: 24.5°
Optical Resolution: 640 (H) x 480 (V) pixels (gray scale)
Barcode decode speed: Linear typ. 100ms or less, 2D typ. 300ms or less
Optical radiation: Aiming Element (VLD) 650 nm ± 5 nm, less than 35mW
Illumination Element (LED): 635 nm ± 20 nm, less than 35mW
Laser Classification: CDRH Class II/IEC 825 Class 1 devices
Min. Print Contrast: Min. 25% absolute dark/light reflectance measured at 650 nm
Ambient Light: Total darkness to 9,000 ft.candles (96,900Lux)
Symbologies: 1-D Symbology : All major 1D bar codes, e.g. UPC/EAN, Code 128, UCC.EAN1128, RSS, Code 39, Code 93, 1 2 of 5, Discrete 2 of 5, Codabar, MSI
2-D Symbology: MaxiCode, PDF417, DataMatrix, QR Code, Aztec & Composite Codes
Postal Codes: US Postnet, US Planet, UK Postal, Australian Postal, Japan Postal

Refer chapter “Barcodesettings” for details.

Scan decode zone: Typical performance @23°C (73°F) on high quality symbols in normal room light for 1D symbology (tested with PDF417):

Near
5 mil: Code 39 - 80% MRD: 8.9 - 17.8 (cm)/ 3.5 - 7 (in)
7.5 mil: Code 39 - 80% MRD: 7 - 19.7 (cm) / 2.75 - 7.75 (in)
13 mil: UPC-A - 80% MRD: 5.7 - 22.2 (cm) / 2.25 - 8.75 (in)
20 mil: Code 39 - 80% MRD: * - 27.9 (cm) / * - 11 (in)
6.7 mil: PDF417 - 80% MRD: 9.5 - 15.2 (cm) / 3.75 - 6.0 (in)
10 mil: PDF417 - 80% MRD: 8.3 - 18.4 (cm) / 3.25 - 7.25 (in)
15 mil: PDF417 - 80% MRD: * - 19.1 (cm) / * - 7.5 (in)
For BCSi –C LP, BCSi –C HP:
Connection: RS232 intrinsically safe interface (interface X91)
Supply: via intrinsically safe interface (interface X91)
Length of spiral cable: typ. 0,5m / 2m (1,64ft / 6,56ft), not extended / extended. Other lengths on request. Cable fixed mounted. Exchangeable by Gecma only.
Note (for BCSi-C LP only): This variant is developed with internal energy buffer to provide the necessary power for the scanner electronic (duty cycle typ. 5%). A pre-charging of typ. 16h for this internal buffer necessary before first operation. Typ. dicharging rate when not connected is typ. 15% to 20% per month @ 20°C (68°F).

For BCSi –RF 10, BCSi –RF 100:
Connection: provide wireless RS232 interface via Bluetooth 1.2 (2,4GHz) specification (transparent RS232 Interface), Class 2 for BCSi –RF 10, Class 1 for BCSi –RF 100
Supply: via internal battery (charging via interface X92) not interchangeable.
Battery capacity: typ. >2000 scans, typ. 36h standby, typ. charging 16h (when complete discharged), conditions @20°C (68°F), >350 cycles (IEC61951-2). Charge battery before using.
Discharging rate: when power down and not used typ. 15% to 20% per month @ 20°C (68°F)
RF distances: max. 10m for BCSi –RF 10 (open field)
max. 100m for BCSi –RF 100 (open field)
Local conditions can affect the RF distances.
Radiated power: max. 2W
Antenna: Integrated antenna
Bluetooth type setting: RS232 interface, accept bound request from remote device, connectable, discoverable
Bluetooth PIN: 0000
## Certificates

### ATEX certification

<table>
<thead>
<tr>
<th>Product</th>
<th>Zone 0 / EPL Ga</th>
<th>Zone 20 / EPL Da</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCSI-1</td>
<td>ATEX ignition protection</td>
<td>Ex II 1G Ex ia op is Ga IIC T4</td>
</tr>
<tr>
<td></td>
<td>Operating/storage T°</td>
<td>Ta: -20°C ... +60°C (-4°F to 140°F)</td>
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<td>ATEX certification</td>
<td>TÜV 08 ATEX 7633</td>
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### IECEx certification

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<th>EPL Ga</th>
<th>EPL Da</th>
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<td>IECEx ignition protection</td>
<td>Ex ia op is IIC T4 Ga</td>
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<td>Operating/storage T°</td>
<td>Ta: -20°C ... +60°C (-4°F to 140°F)</td>
</tr>
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<td>IECEx certification</td>
<td>IECEx TUR 09.001</td>
</tr>
</tbody>
</table>

Further details and certificates can be found in the attached license.
Connections details

BCSi-C LP:

When the distance between the supply line (X91-1) and the data lines (X91-3 and X91-4) at the associated apparatus comply to the clearance / creepage distances and separation on the standard IEC/EN 60079-11:

Supply voltage: X91-1, Intrinsically safe ia:
Contact 1:    +Ui
Contact 2:    GND

Ui    ≤ 5,5 V
li    ≤ not important
Pi    ≤ 4W
Li    ≤ negligible
Ci    ≤ negligible

Uo    ≤ negligible
lo    ≤ negligible
Po    ≤ negligible
Lo    ≤ negligible
Co    ≤ negligible

Data Lines: X91-3, X91-4, Intrinsically safe ia:
Contact 3:    RXD (input)
Contact 4:    TXD (output)

Ui    ≤ 25 V
li    ≤ not important
Pi    ≤ not important
Li    ≤ negligible
Ci    ≤ negligible

Uo    ≤ 5,4 V
lo    ≤ 11,4 mA
Po    ≤ 14,1 mW
Lo    ≤ 0,3 mH
Co    ≤ 65 uF

Recommended max. cable length 5m (16,4ft).
Pay attention to the values listed in corresponding standards.

This variant is developed with internal energy buffer to provide the necessary power for the scanner electronic (duty cycle typ. 5%). A pre-charging of typ. 16h for this internal buffer necessary before first operation.
When the distance between the supply line (X91-1) and the data lines (X91-3 and X91-4) at the associated apparatus not comply to the clearance / creepage distances and separation on the standard IEC/EN 60079-11:

Supply voltage / Data: X91-1, X91-3, X91-4, Intrinsically safe ia:
Contact 1: +Ui
Contact 2: GND
Contact 3: RXD (input)
Contact 4: TXD (output)

Ui ≤ 5,5 V
Li ≤ not important
Pi ≤ 4W
Li ≤ negligible
Ci ≤ negligible

Uo ≤ 5,4 V
Io ≤ 11,4 mA
Po ≤ 14,1 mW
Lo ≤ 0,3 mH
Co ≤ 65 uF

Recommended max. cable length 5m (16.4ft).
Pay attention to the values listed in corresponding standards.

BCSi-C HP:

When the distance between the supply line (X91-1) and the data lines (X91-3 and X91-4) at the associated apparatus comply to the clearance / creepage distances and separation on the standard IEC/EN 60079-11:

Supply voltage: X91-1, Intrinsically safe ia:
Contact 1: +Ui
Contact 2: GND

Ui ≤ 5,5 V
Li ≤ not important
Pi ≤ not important
Li ≤ negligible
Ci ≤ negligible

Uo ≤ negligible
Io ≤ negligible
Po ≤ negligible
Lo ≤ negligible
Co ≤ negligible
**Data Lines:**  
\textbf{X91-3, X91-4, Intrinsically safe ia:}
Contact 3: RXD (input)  
Contact 4: TXD (output)

\begin{align*}
\text{Ui} & \leq 25 \text{ V} \\
\text{li} & \leq \text{not important} \\
\text{Pi} & \leq \text{not important} \\
\text{Li} & \leq \text{negligible} \\
\text{Ci} & \leq \text{negligible} \\
\text{Uo} & \leq 5,4 \text{ V} \\
\text{Io} & \leq 11,4 \text{ mA} \\
\text{Po} & \leq 14,1 \text{ mW} \\
\text{Lo} & \leq 0,3 \text{ mH} \\
\text{Co} & \leq 65 \text{ uF}
\end{align*}

Recommended max. cable length 5m (16,4ft).  
Pay attention to the values listed in corresponding standards.

When the distance between the supply line (X91-1) and the data lines (X91-3 and X91-4) at the associated apparatus **not comply** to the clearance / creepage distances and separation on the standard IEC/EN 60079-11:

**Supply voltage / Data:**  
\textbf{X91-1, X91-3, X91-4, Intrinsically safe ia:}
Contact 1: +Ui  
Contact 2: GND  
Contact 3: RXD (input)  
Contact 4: TXD (output)

\begin{align*}
\text{Ui} & \leq 5,5 \text{ V} \\
\text{li} & \leq \text{not important} \\
\text{Pi} & \leq \text{not important} \\
\text{Li} & \leq \text{negligible} \\
\text{Ci} & \leq \text{negligible} \\
\text{Uo} & \leq 5,4 \text{ V} \\
\text{Io} & \leq 11,4 \text{ mA} \\
\text{Po} & \leq 14,1 \text{ mW} \\
\text{Lo} & \leq 0,3 \text{ mH} \\
\text{Co} & \leq 65 \text{ uF}
\end{align*}

Recommended max. cable length 5m (16,4ft).  
Pay attention to the values listed in corresponding standards.
**BCSi-RF 10 / BCSi-RF100:**

Charging voltage: **X92.** Intrinsically safe ia:
- Contact inside: +Ui
- Contact outside: GND

- \( U_i \leq 10.8 \text{ V} \)
- \( I_i \leq \) not important
- \( P_i \leq \) not important
- \( L_i \leq \) negligible
- \( C_i \leq \) negligible

- \( U_o \leq \) negligible
- \( I_o \leq \) negligible
- \( P_o \leq \) negligible
- \( L_o \leq \) negligible
- \( C_o \leq \) negligible

Recommended max. cable length 5m (16.4ft).
Pay attention to the values listed in corresponding standards.

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**Terminal Connections**

**BCSi-C LP, BCSi-C HP:**

Supply voltage / Data interface X91:

<table>
<thead>
<tr>
<th>X91</th>
<th>Function</th>
<th>Cable</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>+Ui</td>
<td>Brown</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>GND</td>
<td>White</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>RXD (inp.)</td>
<td>Yellow</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>TXT (outp.)</td>
<td>Green</td>
<td>4</td>
<td>3</td>
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</table>

**BCSi-RF 10, BCSi-RF 100:**

Supply voltage interface X92:

<table>
<thead>
<tr>
<th>X91</th>
<th>Function</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>+Ui</td>
<td></td>
<td>Contact inside</td>
</tr>
<tr>
<td>GND</td>
<td></td>
<td>Contact outside</td>
</tr>
</tbody>
</table>

Further details can be found in attached installation plan drawings of different variants.
**Available Barcode symbologies and default settings**

To ensure best barcode reading results we recommend to enable the used barcode only. For flexibility we recommend to disable as few as possible unused barcodes.

To enable or disable a barcode refer associated chapter at “Programming BCSI”.

<table>
<thead>
<tr>
<th>Symbology</th>
<th>Barcode parameter</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UPC/EAN</strong></td>
<td>UPC-A</td>
<td>Enable</td>
</tr>
<tr>
<td></td>
<td>UPC-E</td>
<td>Enable</td>
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<tr>
<td></td>
<td>UPC-E1</td>
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<td></td>
<td>EAN-8/JAN 8</td>
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<td></td>
<td>EAN-13/JAN 13</td>
<td>Enable</td>
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<td></td>
<td>Bookland EAN</td>
<td>Disable</td>
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<td></td>
<td>Decode UPC/EAN/JAN Supplementals (2 and 5 digits)</td>
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<td></td>
<td>UPC/EAN/JAN Supplemental Redundancy</td>
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<td></td>
<td>Transmit UPC-A Check Digit</td>
<td>Enable</td>
</tr>
<tr>
<td></td>
<td>Transmit UPC-E Check Digit</td>
<td>Enable</td>
</tr>
<tr>
<td></td>
<td>Transmit UPC-E1 Check Digit</td>
<td>Enable</td>
</tr>
<tr>
<td></td>
<td>UPC-A Preamble</td>
<td>System Character</td>
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<tr>
<td></td>
<td>UPC-E Preamble</td>
<td>System Character</td>
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<td></td>
<td>UPC-E1 Preamble</td>
<td>System Character</td>
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<td></td>
<td>Convert UPC-E to A</td>
<td>Disable</td>
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<td></td>
<td>Convert UPC-E1 to A</td>
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<td>EAN-8/JAN-8 Extend</td>
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<td>UCC Coupon Extended Code</td>
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<td>Linear UPC/EAN Decode</td>
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<td><strong>Code 128</strong></td>
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<td>UCC/EAN-128</td>
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<td>ISBT 128</td>
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<td><strong>Code 39</strong></td>
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<td>Trioptic Code 39</td>
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<td>Convert Code 39 to Code 32 (Italian Pharmacy Code)</td>
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<table>
<thead>
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<th>Code 39</th>
<th>Set Length(s) for Code 39</th>
<th>2 to 55</th>
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<tbody>
<tr>
<td></td>
<td>Code 39 Check Digit Verification</td>
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<td>Transmit Code 39 Check Digit</td>
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<td>Code 11</td>
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<td>Set Lengths for Code 11</td>
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<td>Code 11 Check Digit Verification</td>
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<td>Transmit Code 11 Check Digit(s)</td>
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<td>Set Lengths for I 2 of 5</td>
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<td>Discrete 2 of 5 (DTF)</td>
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<td>NOTIS Editing</td>
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<td>MSI</td>
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<td>Postal Codes</td>
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<tr>
<td>Feature</td>
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<td>Composite CC-A/B</td>
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<td>UCC/EAN Code 128 Emulation Mode for UCC/EAN</td>
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<tr>
<td>PDF417</td>
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<tr>
<td>MicroPDF417</td>
<td>Disable</td>
<td></td>
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<tr>
<td>Code 128 Emulation</td>
<td>Disable</td>
<td></td>
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<tr>
<td>Data Matrix</td>
<td>Enable</td>
<td></td>
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<tr>
<td>Maxicode</td>
<td>Enable</td>
<td></td>
</tr>
<tr>
<td>QR Code</td>
<td>Enable</td>
<td></td>
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<tr>
<td>Symbology-Specific Security Levels</td>
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<td></td>
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<tr>
<td>Redundancy Level</td>
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<td></td>
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<tr>
<td>Security Level</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Intercharacter Gap Size</td>
<td>Normal</td>
<td></td>
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</table>
Sample barcodes

EAN-13/JAN 13

Code 128

Code 39
Data Matrix

Gecma BCSi Barcode Scanner with vibration feedback

Maxicode

Gecma barcodescanner available as cable and RF version
Programming BCSi

Presets done by Gecma Components GmbH (indicated by **).  
Don’t scale or modify the barcodes.  
We recommend to program “Set Default Parameter” only.  
Changes/adjustments are under owner’s responsibility.

Set Default Parameter

Scan this bar code to return all parameters to the default values

```
| Set all default |
```

Focus Mode

Select the Focus Mode to control the working range of the BCSi. If Far Focus is selected, the BCSi is optimized to read at its far position. With Near Focus, the BCSi is optimized to read at its near position. Smart Focus toggles the focus position after every frame.

```
| * Far Focus |
| Near Focus |
| Smart Focus |
```
**Decoding Illumination**

Selecting Enable Illumination causes the decoder to flash illumination on every image capture to aid decoding. Select Disable Illumination to prevent the decoder from using decoding illumination. Enabling illumination usually results in superior images. The effectiveness of the illumination decreases as the distance to the target increases.

* Enable Decoding Illumination

* Disable Decoding Illumination

---

**Decode Aiming Pattern**

This parameter only applies when in Decode Mode. Select Enable Decode Aiming Pattern to project the aiming pattern during bar code capture, or Disable Decode Aiming Pattern to turn the aiming pattern off.

* Enable Decode Aiming Pattern

* Disable Decode Aiming Pattern
**Prefix/Suffix Values**

A prefix and/or one or two suffixes can be appended to scan data for use in data editing. To set a value for a prefix or suffix, scan a prefix or suffix bar code below, then scan a four-digit number (i.e., four bar codes from Appendix A, Numeric Bar Codes) that corresponds to that value. See Table “ASCII Value Table” for the four-digit codes. To correct an error or change a selection, scan Cancel from Appendix A.

To use Prefix/Suffix values, first set the Scan Data Transmission Format below.

* Scan Prefix

* Scan Suffix 1

* Scan Suffix 2

**Scan Data Transmission Format**

To change the scan data format, scan one of the following eight bar codes corresponding to the desired format. If using this parameter do not use ADF rules to set the prefix/suffix. To set values for the prefix and/or suffix, see Prefix/Suffix Values above.

* Data As Is

* <DATA> <SUFFIX 1>
Appendix A

Numeric Bar Codes

For parameters requiring specific numeric values, scan the appropriately numbered bar code(s).

0
1
2
3
4
5
To correct an error or change a selection, scan the bar code below.

Cancel
### ASCII Value Table

<table>
<thead>
<tr>
<th>ASCII Value</th>
<th>Full ASCII Code 39 Encode Char</th>
<th>Keystroke</th>
</tr>
</thead>
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<td>1000</td>
<td>%U</td>
<td>CTRL 2</td>
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<tr>
<td>1001</td>
<td>$A</td>
<td>CTRL A</td>
</tr>
<tr>
<td>1002</td>
<td>$B</td>
<td>CTRL B</td>
</tr>
<tr>
<td>1003</td>
<td>$C</td>
<td>CTRL C</td>
</tr>
<tr>
<td>1004</td>
<td>$D</td>
<td>CTRL D</td>
</tr>
<tr>
<td>1005</td>
<td>$E</td>
<td>CTRL E</td>
</tr>
<tr>
<td>1006</td>
<td>$F</td>
<td>CTRL F</td>
</tr>
<tr>
<td>1007</td>
<td>$G</td>
<td>CTRL G</td>
</tr>
<tr>
<td>1008</td>
<td>$H</td>
<td>CTRL H/BACKSPACE</td>
</tr>
<tr>
<td>1009</td>
<td>$I</td>
<td>CTRL I/HORIZONTAL TAB</td>
</tr>
<tr>
<td>1010</td>
<td>$J</td>
<td>CTRL J</td>
</tr>
<tr>
<td>1011</td>
<td>$K</td>
<td>CTRL K</td>
</tr>
<tr>
<td>1012</td>
<td>$L</td>
<td>CTRL L</td>
</tr>
<tr>
<td>1013</td>
<td>$M</td>
<td>CTRL M/ENTER</td>
</tr>
<tr>
<td>1014</td>
<td>$N</td>
<td>CTRL N</td>
</tr>
<tr>
<td>1015</td>
<td>$O</td>
<td>CTRL O</td>
</tr>
<tr>
<td>1016</td>
<td>$P</td>
<td>CTRL P</td>
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<td>1017</td>
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<td>1018</td>
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<td>CTRL R</td>
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<tr>
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<td>$S</td>
<td>CTRL S</td>
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<tr>
<td>1020</td>
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<td>CTRL T</td>
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<tr>
<td>1021</td>
<td>$U</td>
<td>CTRL U</td>
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<tr>
<td>1022</td>
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<td>CTRL V</td>
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<tr>
<td>1023</td>
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</tr>
<tr>
<td>1024</td>
<td>$X</td>
<td>CTRL X</td>
</tr>
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</table>

The keystroke in bold is sent only if the Function Key Mapping is enabled. Otherwise, the unbold keystroke is sent.
### ASCII Value Table

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<td>CTRL Z</td>
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<td>CTRL [</td>
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<tr>
<td>1028</td>
<td>%B</td>
<td>CTRL \</td>
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<tr>
<td>1029</td>
<td>%C</td>
<td>CTRL ]</td>
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<tr>
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<td>%D</td>
<td>CTRL 6</td>
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<tr>
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<td>%E</td>
<td>CTRL -</td>
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<td>Space</td>
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<td>!</td>
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<tr>
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<td>/G</td>
<td>'</td>
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<td>/H</td>
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The keystroke in bold is sent only if the Function Key Mapping is enabled. Otherwise, the unbold keystroke is sent.
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<th>ASCII Value</th>
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The keystroke in bold is sent only if the Function Key Mapping is enabled. Otherwise, the unbold keystroke is sent.
### ASCII Value Table

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<tr>
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</tr>
<tr>
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</tr>
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<td>1105</td>
<td>+I</td>
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</tbody>
</table>

The keystroke in bold is sent only if the Function Key Mapping is enabled. Otherwise, the unbold keystroke is sent.
# ASCII Value Table

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<tr>
<th>ASCII Value</th>
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</tr>
<tr>
<td>1126</td>
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</tr>
</tbody>
</table>

The keystroke in bold is sent only if the Function Key Mapping is enabled. Otherwise, the unbold keystroke is sent.
Barcode settings

UPC/EAN

Enable/Disable UPC-A

To enable or disable UPC-A, scan the appropriate bar code below.

* Enable UPC-A

Disable UPC-A

Enable/Disable UPC-E

To enable or disable UPC-E, scan the appropriate bar code below.

* Enable UPC-E

Disable UPC-E
**Enable/Disable UPC-E1**

UPC-E1 is disabled by default.
To enable or disable UPC-E1, scan the appropriate bar code below.
UPC-E1 is not a UCC (Uniform Code Council) approved symbology.

Enable UPC-E1

* Disable UPC-E1

**Enable/Disable EAN-8/JAN-8**

To enable or disable EAN-8/JAN-8, scan the appropriate bar code below.

* Enable EAN-8/JAN-8

Disable EAN-8/JAN-8
Enable/Disable EAN-13/JAN-13

To enable or disable EAN-13/JAN-13, scan the appropriate bar code below.

* Enable EAN-13/JAN-13

Disable EAN-13/JAN-13

Enable/Disable Bookland EAN

To enable or disable Bookland EAN, scan the appropriate bar code below.

Enable Bookland EAN

* Disable Bookland EAN
**Decode UPC/EAN/JAN Supplementals**

Supplementals are bar codes appended according to specific format conventions (e.g., UPC A+2, UPC E+2, EAN 13+2). Six options are available.

- **If Decode UPC/EAN/JAN Only With Supplementals is selected**, UPC/EAN/JAN symbols without supplementals are not decoded.
- **If Ignore Supplementals is selected**, and the decoder is presented with a UPC/EAN/JAN with a supplemental, the UPC/EAN/JAN is decoded and the supplemental bar code is ignored.
- **An Autodiscriminate Option is also available. If this option is selected**, choose an appropriate UPC/EAN/JAN Supplemental Redundancy value from the next page. A value of 5 or more is recommended.
- Enable 378/379 Supplemental Mode to delay only EAN-13/JAN-13 bar codes starting with a ‘378’ or ‘379’ prefix by the supplemental search process. All other UPC/EAN/JAN bar codes are exempt from the search and are reported instantly upon decode.
- Select Enable 978 Supplemental Mode to delay only EAN-13/JAN-13 bar codes starting with a ‘978’ prefix by the supplemental search process. All other UPC/EAN/JAN bar codes are exempt from the search and are reported instantly upon decode.
- Select Enable Smart Supplemental Mode to delay only EAN-13/JAN-13 bar codes starting with a ‘378’, ‘379’, or ‘978’ prefix by the supplemental search process. All other UPC/EAN/JAN bar codes are exempt from the search and are reported instantly upon decode.

To minimize the risk of invalid data transmission, select either to decode or ignore supplemental characters.
Enable 378/379 Supplemental Mode

Enable 978 Supplemental Mode

Enable Smart Supplemental Mode

**UPC/EAN/JAN Supplemental Redundancy**

With **Autodiscriminate UPC/EAN/JAN Supplementals** selected, this option adjusts the number of times a symbol without supplementals is decoded before transmission. The range is from two to thirty times. Five or above is recommended when decoding a mix of UPC/EAN/JAN symbols with and without supplementals, and the autodiscriminate option is selected. The default is set at 10.

Scan the bar code below to set a decode redundancy value. Next, scan two numeric bar codes in **Appendix A, Numeric Bar Codes**. Single digit numbers must have a leading zero. To correct an error or change a selection, scan **Cancel** from Appendix A.
**Transmit UPC-A Check Digit**

The check digit is the last character of the symbol used to verify the integrity of the data. Scan the appropriate bar code below to transmit the bar code data with or without the UPC-A check digit. It is always verified to guarantee the integrity of the data.

* Transmit UPC-A Check Digit

![Barcode]

Do Not Transmit UPC-A Check Digit

**Transmit UPC-E Check Digit**

The check digit is the last character of the symbol used to verify the integrity of the data. Scan the appropriate bar code below to transmit the bar code data with or without the UPC-E check digit. It is always verified to guarantee the integrity of the data.

* Transmit UPC-E Check Digit

![Barcode]

Do Not Transmit UPC-E Check Digit
**Transmit UPC-E1 Check Digit**

The check digit is the last character of the symbol used to verify the integrity of the data. Scan the appropriate bar code below to transmit the bar code data with or without the UPC-E1 check digit. It is always verified to guarantee the integrity of the data.

* Transmit UPC-E1 Check Digit

Do Not Transmit UPC-E1 Check Digit

**UPC-A Preamble**

Preamble characters are part of the UPC symbol, and include Country Code and System Character. There are three options for transmitting a UPC-A preamble to the host device: transmit System Character only, transmit System Character and Country Code ("0" for USA), and transmit no preamble. Select the appropriate option to match the host system.

No Preamble (<DATA>)

* System Character (<SYSTEM CHARACTER> <DATA>)

System Character & Country Code
(<COUNTRY CODE> <SYSTEM CHARACTER> <DATA>)
UPC-E Preamble

Preamble characters are part of the UPC symbol, and include Country Code and System Character. There are three options for transmitting a UPC-E preamble to the host device: transmit System Character only, transmit System Character and Country Code ("0" for USA), and transmit no preamble. Select the appropriate option to match the host system.

No Preamble (<DATA>)

* System Character (<SYSTEM CHARACTER> <DATA>)

System Character & Country Code
(<COUNTRY CODE> <SYSTEM CHARACTER> <DATA>)
UPC-E1 Preamble

Preamble characters are part of the UPC symbol, and include Country Code and System Character. There are three options for transmitting a UPC-E1 preamble to the host device: transmit System Character only, transmit System Character and Country Code ("0" for USA), and transmit no preamble. Select the appropriate option to match the host system.

No Preamble (<DATA>)

* System Character (<SYSTEM CHARACTER> <DATA>)

System Character & Country Code
(<COUNTRY CODE> <SYSTEM CHARACTER> <DATA>)

Convert UPC-E to UPC-A

Enable this to convert UPC-E (zero suppressed) decoded data to UPC-A format before transmission. After conversion, the data follows UPC-A format and is affected by UPC-A programming selections (e.g., Preamble, Check Digit).
When disabled, UPC-E decoded data is transmitted as UPC-E data, without conversion.

Convert UPC-E to UPC-A (Enable)

* Do Not Convert UPC-E to UPC-A (Disable)
**Convert UPC-E1 to UPC-A**

Enable this to convert UPC-E1 decoded data to UPC-A format before transmission. After conversion, the data follows UPC-A format and is affected by UPC-A programming selections (e.g., Preamble, Check Digit). When disabled, UPC-E1 decoded data is transmitted as UPC-E1 data, without conversion.

![Barcode Image]

**EAN-8/JAN-8 Extend**

When enabled, this parameter adds five leading zeros to decoded EAN-8 symbols to make them compatible in format to EAN-13 symbols. When disabled, EAN-8 symbols are transmitted as is.

![Barcode Image]
**UCC Coupon Extended Code**

When enabled, this parameter decodes UPC-A bar codes starting with digit ‘5’, EAN-13 bar codes starting with digit ‘99’, and UPCA/EAN-128 Coupon Codes. UPCA, EAN-13, and EAN-128 must be enabled to scan all types of Coupon Codes. Use the Decode UPC/EAN Supplemental Redundancy parameter to control autodiscrimination of the EAN128 (right half) of a coupon code.

Enable UCC Coupon Extended Code

* Disable UCC Coupon Extended Code

**Linear UPC/EAN Decode**

This option applies to code code types containing two adjacent blocks (e.g., UPCA, EAN-8, EAN-13). When enabled, a bar code is transmitted only when both the left and right blocks are successfully decoded within one scan line. Enable this option when bar codes are in proximity to each other.

Enable Linear UPC/EAN Decode

* Disable Linear UPC/EAN Decode
Code 128

**Enable/Disable Code 128**

To enable or disable Code 128, scan the appropriate bar code below.

```
* Enable Code 128
```

```
Disable Code 128
```

**Enable/Disable UCC/EAN-128**

To enable or disable UCC/EAN-128, scan the appropriate bar code below.

```
* Enable UCC/EAN-128
```

```
Disable UCC/EAN-128
```
Enable/Disable ISBT 128

ISBT 128 is a variant of Code 128 used in the blood bank industry. Scan a bar code below to enable or disable ISBT 128. If necessary, the host must perform concatenation of the ISBT data.

* Enable ISBT 128

* Disable ISBT 128
Code 39

Enable/Disable Code 39

To enable or disable Code 39, scan the appropriate bar code below.

* Enable Code 39

Disable Code 39

Enable/Disable Trioptic Code 39

Trioptic Code 39 is a variant of Code 39 used in the marking of computer tape cartridges. Trioptic Code 39 symbols always contain six characters. To enable or disable Trioptic Code 39, scan the appropriate bar code below.

Enable Trioptic Code 39

* Disable Trioptic Code 39
**Convert Code 39 to Code 32**

Code 32 is a variant of Code 39 used by the Italian pharmaceutical industry. Scan the appropriate bar code below to enable or disable converting Code 39 to Code 32. Code 39 must be enabled for this parameter to function.

![Enable Convert Code 39 to Code 32](image1)

![* Disable Convert Code 39 to Code 32](image2)

**Code 32 Prefix**

Scan the appropriate bar code below to enable or disable adding the prefix character “A” to all Code 32 bar codes. Convert Code 39 to Code 32 must be enabled for this parameter to function.

![Enable Code 32 Prefix](image3)

![* Disable Code 32 Prefix](image4)
### Set Lengths for Code 39

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Set lengths for Code 39 to any length, one or two discrete lengths, or lengths within a specific range. If Code 39 Full ASCII is enabled, Length Within a Range or Any Length are the preferred options. When setting lengths for different bar code types by scanning single digit numbers, single digit numbers must always be preceded by a leading zero.

- **One Discrete Length** - Select this option to decode only Code 39 symbols containing a selected length. Select the length using the numeric bar codes in Appendix A, Numeric Bar Codes. For example, to decode only Code 39 symbols with 14 characters, scan **Code 39 - One Discrete Length**, then scan 1 followed by 4. To correct an error or change a selection, scan **Cancel** from Appendix A.

- **Two Discrete Lengths** - Select this option to decode only Code 39 symbols containing either of two selected lengths. Select lengths using the numeric bar codes in Appendix A, Numeric Bar Codes. For example, to decode only those Code 39 symbols containing either 2 or 14 characters, select **Code 39 - Two Discrete Lengths**, then scan 0, 2, 1, and then 4. To correct an error or change a selection, scan **Cancel** from Appendix A.

- **Length Within Range** - Select this option to decode a Code 39 symbol with a specific length range. Select lengths using numeric bar codes in Appendix A, Numeric Bar Codes. For example, to decode Code 39 symbols containing between 4 and 12 characters, first scan **Code 39 - Length Within Range**. Then scan 0, 4, 1, and 2 (single digit numbers must always be preceded by a leading zero). To correct an error or change a selection, scan **Cancel** from Appendix A.

- **Any Length** - Select this option to decode Code 39 symbols containing any number of characters within the decoder capability.
**Code 39 Check Digit Verification**

When this feature is enabled, the decoder checks the integrity of all Code 39 symbols to verify that the data complies with specified check digit algorithm. Only Code 39 symbols which include a modulo 43 check digit are decoded. Enable this feature if the Code 39 symbols contain a Modulo 43 check digit.
**Transmit Code 39 Check Digit**

Scan a bar code below to transmit Code 39 data with or without the check digit. Code 39 Check Digit Verification must be enabled for this parameter to function.

![Transmit Code 39 Check Digit (Enable)](image1)

* Do Not Transmit Code 39 Check Digit (Disable)

**Code 39 Full ASCII Conversion**

Code 39 Full ASCII is a variant of Code 39 which pairs characters to encode the full ASCII character set. To enable or disable Code 39 Full ASCII, scan the appropriate bar code below. Trioptic Code 39 and Code 39 Full ASCII cannot be enabled simultaneously. Code 39 Full ASCII to Full ASCII Correlation is host-dependent, and is therefore described in the ASCII Character Set Table for the appropriate interface. See Appendix A, ASCII Character Set.

![Enable Code 39 Full ASCII](image2)

* Disable Code 39 Full ASCII
Code 93

Enable/Disable Code 93

To enable or disable Code 93, scan the appropriate bar code below.

![Enable Code 93]

![Disable Code 93]

Set Lengths for Code 93

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Set lengths for Code 93 to any length, one or two discrete lengths, or lengths within a specific range.

- **One Discrete Length** - Select this option to decode only Code 93 symbols containing a selected length. Select the length using the numeric bar codes in Appendix A, Numeric Bar Codes. For example, to decode only Code 93 symbols with 14 characters, scan **Code 93 - One Discrete Length**, then scan 1 followed by 4. To correct an error or change a selection, scan **Cancel** from Appendix A.

- **Two Discrete Lengths** - Select this option to decode only Code 93 symbols containing either of two selected lengths. Select lengths using the numeric bar codes in Appendix A, Numeric Bar Codes. For example, to decode only those Code 93 symbols containing either 2 or 14 characters, select **Code 93 - Two Discrete Lengths**, then scan 0, 2, 1, and then 4. To correct an error or change a selection, scan **Cancel** from Appendix A.

- **Length Within Range** - Select this option to decode a Code 93 symbol with a specific length range. Select lengths using the numeric bar codes in Appendix A, Numeric Bar Codes. For example, to decode Code 93 symbols containing between 4 and 12 characters, first scan **Code 93 - Length Within Range**. Then scan 0, 4, 1, and 2 (single digit numbers must always be preceded by a leading zero). To correct an error or change a selection, scan **Cancel** from Appendix A.

- **Any Length** - Scan this option to decode Code 93 symbols containing any number of characters within the decoder’s capability.
Code 93 – One Discrete Length

Code 93 – Two Discrete Lengths

Code 93 – Length Within Range

Code 93 – Any Length

**Code 11**

**Code 11**

To enable or disable Code 11, scan the appropriate bar code below.

Enable Code 11

* Disable Code 11
Set Lengths for Code 11

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Set lengths for Code 11 to any length, one or two discrete lengths, or lengths within a specific range.

- **One Discrete Length** - Select this option to decode only Code 11 symbols containing a selected length. Select the length using the numeric bar codes in Appendix A, Numeric Bar Codes. For example, to decode only Code 11 symbols with 14 characters, scan **Code 11 - One Discrete Length**, then scan 1 followed by 4. To correct an error or change a selection, scan **Cancel** from Appendix A.

- **Two Discrete Lengths** - Select this option to decode only Code 11 symbols containing either of two selected lengths. Select lengths using the numeric bar codes in Appendix A, Numeric Bar Codes. For example, to decode only those Code 11 symbols containing either 2 or 14 characters, select **Code 11 - Two Discrete Lengths**, then scan 0, 2, 1, and then 4. To correct an error or change a selection, scan **Cancel** from Appendix A.

- **Length Within Range** - Select this option to decode a Code 11 symbol with a specific length range. Select lengths using numeric bar codes in Appendix A, Numeric Bar Codes. For example, to decode Code 11 symbols containing between 4 and 12 characters, first scan **Code 11 - Length Within Range**. Then scan 0, 4, 1, and 2 (single digit numbers must always be preceded by a leading zero). To correct an error or change a selection, scan **Cancel** from Appendix A.

- **Any Length** - Scan this option to decode Code 11 symbols containing any number of characters within the decoder capability.
**Code 11 Check Digit Verification**

This feature allows the decoder to check the integrity of all Code 11 symbols to verify that the data complies with the specified check digit algorithm. This selects the check digit mechanism for the decoded Code 11 bar code. The options are to check for one check digit, check for two check digits, or disable the feature.

To enable this feature, scan the bar code below corresponding to the number of check digits encoded in the Code 11 symbols.

* Disable

One Check Digit

Two Check Digits
**Transmit Code 11 Check Digits**

This feature selects whether or not to transmit the Code 11 check digit(s). Code 11 Check Digit Verification must be enabled for this parameter to function.

*Do Not Transmit Code 11 Check Digit(s) (Disable)*

**Interleaved 2 of 5 (ITF)**

**Enable/Disable Interleaved 2 of 5**

To enable or disable Interleaved 2 of 5, scan the appropriate bar code below, and select an Interleaved 2 of 5 length from the following pages.

*Enable Interleaved 2 or 5*
Set Lengths for Interleaved 2 of 5

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Set lengths for I 2 of 5 to any length, one or two discrete lengths, or lengths within a specific range.

- **One Discrete Length** - Select this option to decode only I 2 of 5 symbols containing a selected length. Select the length using the numeric bar codes in Appendix A, Numeric Bar Codes. For example, to decode only I 2 of 5 symbols with 14 characters, scan **I 2 of 5 - One Discrete Length**, then scan 1 followed by 4. To correct an error or change a selection, scan **Cancel** from Appendix A.

- **Two Discrete Lengths** - Select this option to decode only I 2 of 5 symbols containing either of two selected lengths. Select lengths using the numeric bar codes in Appendix A, Numeric Bar Codes. For example, to decode only those I 2 of 5 symbols containing either 2 or 14 characters, select **I 2 of 5 - Two Discrete Lengths**, then scan 0, 2, 1, and then 4. To correct an error or change a selection, scan **Cancel** from Appendix A.

- **Length Within Range** - Select this option to decode an I 2 of 5 symbol with a specific length range. Select lengths using numeric bar codes in Appendix A, Numeric Bar Codes. For example, to decode I 2 of 5 symbols containing between 4 and 12 characters, first scan **I 2 of 5 - Length Within Range**, then scan 0, 4, 1, and 2 (single digit numbers must always be preceded by a leading zero). To correct an error or change a selection, scan **Cancel** from Appendix A.

- **Any Length** - Scan this option to decode I 2 of 5 symbols containing any number of characters within the decoder capability.

Due to the construction of the I 2 of 5 symbology, it is possible for a scan line covering only a portion of the code to be interpreted as a complete scan, yielding less data than is encoded in the bar code. To prevent this, select specific lengths (I 2 of 5 - One Discrete Length - Two Discrete Lengths) for I 2 of 5 applications.

---

12 of 5 – One Discrete Length

12 of 5 – Two Discrete Lengths
I 2 of 5 Check Digit Verification

When this feature is enabled, the decoder checks the integrity of all I 2 of 5 symbols to verify the data complies with either the specified Uniform Symbology Specification (USS), or the Optical Product Code Council (OPCC) check digit algorithm.

* Disable

USS Check Digit

OPCC Check Digit
**Transmit I 2 of 5 Check Digit**

Scan the appropriate bar code below to transmit I 2 of 5 data with or without the check digit.

![Barcode for Transmit I 2 of 5 Check Digit (Enable)]

* Do Not Transmit I 2 of 5 Check Digit (Disable)

**Convert I 2 of 5 to EAN-13**

Enable this parameter to convert 14-character I 2 of 5 codes to EAN-13, and transmit to the host as EAN-13. To accomplish this, the I 2 of 5 code must be enabled, and the code must have a leading zero and a valid EAN-13 check digit.

![Barcode for Convert I 2 of 5 to EAN-13 (Enable)]

* Do Not Convert I 2 of 5 to EAN-13 (Disable)
Discrete 2 of 5 (DTF)

Enable/Disable Discrete 2 of 5

To enable or disable Discrete 2 of 5, scan the appropriate bar code below.

* Enable Discrete 2 of 5

* Disable Discrete 2 of 5

Set Lengths for Discrete 2 of 5

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Set lengths for D 2 of 5 to any length, one or two discrete lengths, or lengths within a specific range.

- **One Discrete Length** - Select this option to decode only D 2 of 5 symbols containing a selected length. Select the length using the numeric bar codes in Appendix A, Numeric Bar Codes. For example, to decode only D 2 of 5 symbols with 14 characters, scan **D 2 of 5 - One Discrete Length**, then scan 1 followed by 4. To correct an error or change a selection, scan **Cancel** from Appendix A.

- **Two Discrete Lengths** - Select this option to decode only D 2 of 5 symbols containing either of two selected lengths. Select lengths using the numeric bar codes in Appendix A, Numeric Bar Codes. For example, to decode only those D 2 of 5 symbols containing either 2 or 14 characters, select **D 2 of 5 - Two Discrete Lengths**, then scan 0, 2, 1, and then 4. To correct an error or change a selection, scan **Cancel** from Appendix A.

- **Length Within Range** - Select this option to decode a D 2 of 5 symbol with a specific length range. Select lengths using numeric bar codes in Appendix A, Numeric Bar Codes. For example, to decode D 2 of 5 symbols containing between 4 and 12 characters, first scan **D 2 of 5 - Length Within Range**. Then scan 0, 4, 1, and 2 (single digit numbers must always be preceded by a leading zero). To correct an error or change a selection, scan **Cancel** from Appendix A.

- **Any Length** - Scan this option to decode D 2 of 5 symbols containing any number of characters within the decoder capability.

Due to the construction of the D 2 of 5 symbology, it is possible for a scan line covering only a portion of the code to be interpreted as a complete scan, yielding less data than is encoded in the bar code. To prevent this, select specific lengths (D 2 of 5 - One Discrete Length - Two Discrete Lengths) for D 2 of 5 applications.
**Codabar (NW - 7)**

**Enable/Disable Codabar**

To enable or disable Codabar, scan the appropriate bar code below.

---

* Disable Codabar
**Set Lengths for Codabar**

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Set lengths for Codabar to any length, one or two discrete lengths, or lengths within a specific range.

- **One Discrete Length** - Select this option to decode only Codabar symbols containing a selected length. Select the length using the numeric bar codes in Appendix A, Numeric Bar Codes. For example, to decode only Codabar symbols with 14 characters, scan **Codabar - One Discrete Length**, then scan 1 followed by 4. To correct an error or change a selection, scan **Cancel** from Appendix A.

- **Two Discrete Lengths** - Select this option to decode only Codabar symbols containing either of two selected lengths. Select lengths using the numeric bar codes in Appendix A, Numeric Bar Codes. For example, to decode only Codabar symbols containing either 2 or 14 characters, select **Codabar - Two Discrete Lengths**, then scan 0, 2, 1, and then 4. To correct an error or change a selection, scan **Cancel** from Appendix A.

- **Length Within Range** - Select this option to decode a Codabar symbol with a specific length range. Select lengths using numeric bar codes in Appendix A, Numeric Bar Codes. For example, to decode Codabar symbols containing between 4 and 12 characters, first scan **Codabar - Length Within Range**. Then scan 0, 4, 1, and 2 (single digit numbers must always be preceded by a leading zero). To correct an error or change a selection, scan **Cancel** from Appendix A.

- **Any Length** - Scan this option to decode Codabar symbols containing any number of characters within the decoder capability.
**CLSI Editing**

When enabled, this parameter strips the start and stop characters and inserts a space after the first, fifth, and tenth characters of a 14-character Codabar symbol. Enable this feature if the host system requires this data format. Symbol length does not include start and stop characters.

Enable CLSI Editing

* Disable CLSI Editing

**NOTIS Editing**

When enabled, this parameter strips the start and stop characters from a decoded Codabar symbol. Enable this feature if the host system requires this data format.

Enable NOTIS Editing

* Disable NOTIS Editing
MSI

Enable/Disable MSI

To enable or disable MSI, scan the appropriate bar code below.

Enable MSI

Set Lengths for MSI

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Set lengths for MSI to any length, one or two discrete lengths, or lengths within a specific range.

- **One Discrete Length** - Select this option to decode only MSI symbols containing a selected length. Select the length using the numeric bar codes in Appendix A, Numeric Bar Codes. For example, to decode only MSI symbols with 14 characters, scan **MSI - One Discrete Length**, then scan 1 followed by 4. To correct an error or change a selection, scan **Cancel** from Appendix A.

- **Two Discrete Lengths** - Select this option to decode only MSI symbols containing either of two selected lengths. Select lengths using the numeric bar codes in Appendix A, Numeric Bar Codes. For example, to decode only MSI symbols containing either 2 or 14 characters, select **MSI - Two Discrete Lengths**, then scan 0, 2, 1, and then 4. To correct an error or change a selection, scan **Cancel** from Appendix A.

- **Length Within Range** - Select this option to decode a MSI symbol with a specific length range. Select lengths using numeric bar codes in Appendix A, Numeric Bar Codes. For example, to decode MSI symbols containing between 4 and 12 characters, first scan **MSI - Length Within Range**. Then scan 0, 4, 1, and 2 (single digit numbers must always be preceded by a leading zero). To correct an error or change a selection, scan **Cancel** from Appendix A.

- **Any Length** - Scan this option to decode MSI symbols containing any number of characters within the decoder capability.

Due to the construction of the MSI symbology, it is possible for a scan line covering only a portion of the code to be interpreted as a complete scan, yielding less data than is encoded in the bar code. To prevent this, select specific lengths (MSI - One Discrete Length - Two Discrete Lengths) for MSI applications.
**MSI Check Digits**

With MSI symbols, one check digit is mandatory and always verified by the reader. The second check digit is optional. If the MSI codes include two check digits, scan the Two MSI Check Digits bar code to enable verification of the second check digit.

See MSI Check Digit Algorithm on next page for the selection of second digit algorithms.
**Transmit MSI Check Digit(s)**

Scan a bar code below to transmit MSI data with or without the check digit.

- Transmit MSI Check Digit(s) (Enable)
- * Do Not Transmit MSI Check Digit(s) (Disable)

**MSI Check Digit Algorithm**

Two algorithms are possible for the verification of the second MSI check digit. Select the bar code below corresponding to the algorithm used to encode the check digit.

- MOD 10/MOD 11
- * MOD 10/MOD 10
Postal Codes

**US Postnet**

To enable or disable US Postnet, scan the appropriate bar code below.

* Enable US Postnet

Disable US Postnet

**US Planet**

To enable or disable US Planet, scan the appropriate bar code below.

* Enable US Planet

Disable US Planet
**UK Postal**

To enable or disable UK Postal, scan the appropriate bar code below.

* Enable UK Postal

* Disable UK Postal

**Transmit UK Postal Check Digit**

Select whether to transmit UK Postal data with or without the check digit.

* Transmit UK Postal Check Digit

* Do Not Transmit UK Postal Check Digit
**Japan Postal**

To enable or disable Japan Postal, scan the appropriate bar code below.

* Enable Japan Postal

---

**Australian Postal**

To enable or disable Australian Postal, scan the appropriate bar code below.

* Enable Australian Postal

---
Dutch Postal

To enable or disable Dutch Postal, scan the appropriate bar code below.

* Enable Dutch Postal

Disable Dutch Postal

Transmit US Postal Check Digit

Select whether to transmit US Postal data with or without the check digit.

* Transmit US Postal Check Digit

Do Not Transmit US Postal Check Digit
**RSS (Reduced Space Symbology)**

The variants of RSS are RSS 14, RSS Expanded, and RSS Limited. The limited and expanded versions have stacked variants. Scan the appropriate bar code below to enable or disable each variant of RSS.

**RSS-14**

* Enable RSS 14

* Disable RSS 14

**RSS Limited**

* Enable RSS Limited

* Disable RSS Limited
**RSS Expanded**

* Enable RSS Expanded

Disable RSS Expanded

**Convert RSS to UPC/EAN**

This parameter only applies to RSS-14 and RSS Limited symbols not decoded as part of a Composite symbol. Enable this to strip the leading ‘010’ from RSS-14 and RSS Limited symbols encoding a single zero as the first digit, and report the bar code as EAN-13.

For bar codes beginning with two or more zeros but not six zeros, this parameter strips the leading ‘0100’ and reports the bar code as UPC-A. The UPC-A Preamble parameter that transmits the system character and country code applies to converted bar codes. Note that neither the system character nor the check digit can be stripped.

Enable Convert RSS to UPC/EAN

* Disable Convert RSS to UPC/EAN
Composite

Composite CC-C
Scan a bar code below to enable or disable Composite bar codes of type CC-C.

Enable CC-C

* Disable CC-C

Composite CC-A/B
Scan a bar code below to enable or disable Composite bar codes of type CC-A/B.

Enable CC-A/B

* Disable CC-A/B
**Composite TLC-39**

Scan a bar code below to enable or disable Composite bar codes of type TLC-39.

![Enable TLC39](image1)

![Disable TLC39](image2)
**UPC Composite Mode**

UPC symbols can be “linked” with a 2D symbol during transmission as if they were one symbol. There are three options for these symbols:

- Select **UPC Never Linked** to transmit UPC bar codes regardless of whether a 2D symbol is detected.
- Select **UPC Always Linked** to transmit UPC bar codes and the 2D portion. If 2D is not present, the UPC bar code does not transmit.
- If **Autodiscriminate UPC Composites** is selected, the BCSI determines if there is a 2D portion, then transmits the UPC, as well as the 2D portion if present.

---

**UPC Never Linked**

---

**UPC Always Linked**

---

**Autodiscriminate UPC Composites**

---

**UCC/EAN Code 128 Emulation Mode for UCC/EAN Composite Codes**

Select whether to enable or disable this mode.

---

**Enable UCC/EAN Code 128 Emulation Mode for UCC/EAN Composite Codes**

---

**Disable UCC/EAN Code 128 Emulation Mode for UCC/EAN Composite Codes**
2D Symbologies

Enable/Disable PDF417

To enable or disable PDF417, scan the appropriate bar code below.

* Enable PDF417

Disable PDF417

Enable/Disable MicroPDF417

To enable or disable MicroPDF417, scan the appropriate bar code below.

Enable MicroPDF417

* Disable MicroPDF417
**Code 128 Emulation**

When this parameter is enabled, the BCSI transmits data from certain MicroPDF417 symbols as if it was encoded in Code 128 symbols. Transmit AIM Symbology Identifiers must be enabled for this parameter to work.

If Code 128 Emulation is enabled, these MicroPDF417 symbols are transmitted with one of the following prefixes:

- C1 if the first codeword is 903-907, 912, 914, 915
- C2 if the first codeword is 908 or 909
- C0 if the first codeword is 910 or 911

If disabled, they are transmitted with one of the following prefixes:

- L3 if the first codeword is 903-907, 912, 914, 915
- L4 if the first codeword is 908 or 909
- L5 if the first codeword is 910 or 911

Scan a bar code below to enable or disable Code 128 Emulation.

Enable Code 128 Emulation

* Disable Code 128 Emulation
Data Matrix

To enable or disable Data Matrix, scan the appropriate bar code below.

* Enable Data Matrix

Disable Data Matrix

Maxicode

To enable or disable Maxicode, scan the appropriate bar code below.

* Enable Maxicode

Disable Maxicode
QR Code

To enable or disable QR Code, scan the appropriate bar code below.

* Enable QR Code

Disable QR Code
**Redundancy Level**

The decoder offers four levels of decode redundancy. Select higher redundancy levels for decreasing levels of bar code quality. As redundancy levels increase, the decoder’s aggressiveness decreases.

Select the redundancy level appropriate for the bar code quality.

**Redundancy Level 1**

The following code types must be successfully read twice before being decoded:

<table>
<thead>
<tr>
<th>Code Type</th>
<th>Code Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Codabar</td>
<td>8 characters or less</td>
</tr>
<tr>
<td>MSI</td>
<td>4 characters or less</td>
</tr>
<tr>
<td>D 2 of 5</td>
<td>8 characters or less</td>
</tr>
<tr>
<td>I 2 of 5</td>
<td>8 characters or less</td>
</tr>
</tbody>
</table>

**Redundancy Level 2**

The following code types must be successfully read twice before being decoded:

<table>
<thead>
<tr>
<th>Code Type</th>
<th>Code Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>All</td>
</tr>
</tbody>
</table>

**Redundancy Level 3**

Code types other than the following must be successfully read twice before being decoded. The following codes must be read three times:

<table>
<thead>
<tr>
<th>Code Type</th>
<th>Code Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSI Plessey</td>
<td>4 characters or less</td>
</tr>
<tr>
<td>D 2 of 5</td>
<td>8 characters or less</td>
</tr>
<tr>
<td>I 2 of 5</td>
<td>8 characters or less</td>
</tr>
<tr>
<td>Codabar</td>
<td>8 characters or less</td>
</tr>
</tbody>
</table>

**Redundancy Level 4**

The following code types must be successfully read three times before being decoded:

<table>
<thead>
<tr>
<th>Code Type</th>
<th>Code Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>All</td>
</tr>
</tbody>
</table>
Security Level

The decoder offers four levels of decode security for delta bar codes, which include the Code 128 family, UPC/EAN, and Code 93. Select increasing levels of security for decreasing levels of bar code quality. There is an inverse relationship between security and decoder aggressiveness, so choose only that level of security necessary for any given application.

- **Security Level 0**: This default setting allows the decoder to operate in its most aggressive state, while providing sufficient security in decoding most “in-spec” bar codes.

- **Security Level 1**: Select this option if misdecodes occur. This security level should eliminate most misdecodes.

- **Security Level 2**: Select this option if Security level 1 fails to eliminate misdecodes.

- **Security Level 3**: If Security Level 2 was selected and misdecodes still occur, select this security level. Be advised, selecting this option is an extreme measure against mis-decoding severely out of spec bar codes. Selecting this level of security significantly impairs the decoding ability of the decoder. If this level of security is necessary, try to improve the quality of the bar codes.
Intercharacter Gap Size

The Code 39 and Codabar symbologies have an intercharacter gap that is typically quite small. Due to various bar code-printing technologies, this gap can grow larger than the maximum size allowed, preventing the decoder from decoding the symbol. If this problem occurs, scan the Large Intercharacter Gaps parameter to tolerate these out-of-specification bar codes.

* Normal Intercharacter Gaps

Large Intercharacter Gaps

Report Version

Scan the bar code below to report the version of software currently installed in the decoder.

Report Software Version
Safety Instructions

General Safety Instructions
The instructions stated in this chapter are to be followed accurately to ensure a safe and reliable operation. The license and the special conditions included in it are to be observed. Follow the national safety regulations and the accident prevention regulations. The installation is only to be performed by specialists. These specialist must be familiar with the characteristics of explosion-endangered facilities. Incorrect or inadmissible application as well as non-observance of the instructions of this operating manual make the guarantee void.

For BCSI-RF10/RF100 only: The BT-modul has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules and with RSS-210 of IndustryCanada as LMO. This device contains transmitter with FCCID: RFR- C11G2, IC ID: 4957A-C11G2. The BT-modul is a qualified design according to the Bluetooth Qualification Program Reference Document (PRD) V2.0. The Qualified Design ID (QDID) is: B012419.

The products BCSI-C LP, BCSI-RF 10 and BCSI-RF 100 contain NiMH cells. Handle / recycle product regarding local safety rules.

Only use this device for the approved purpose.

Conversions and modifications to the device are inadmissible.

The housing is only to be opened by the company GeCma Components GmbH.

The first two digits of the serial number located at the nameplate identify the year of manufacture.

Assembly
The national assembly and installation regulations are to be observed.
The generally accepted rules of engineering are to be observed.
The entire equipment is to be connected and operated correctly and properly according to the applicable standards, guidelines and installation instructions.

Shielded cables are recommended for use in combination with this device.

Before putting the device into operation make sure that the device has been installed as prescribed and that the device and its wiring are not damaged.

If the power supply of the device is not intrinsically safe, the license will become void and it must not be operated as an intrinsically safe device. If the device was operated intrinsically safely with a low level of international protection (e.g. ib), it must not be operated afterwards in applications for a higher level of international protection (e.g. ia).

Operation
The device is only to be operated in an undamaged and clean condition.

If the device has suffered any damages which might affect the international protection (e.g. cracks, holes or broken component8) it must be taken out of service immediately. The device can only be put into operation again after the defect components have been exchanged.

When the device is damaged, do not touch it any longer! Risk of injury!

If the device is to be used in a dust atmosphere dust layers >5mm have to be removed.

In the event of non-observance & non-compliance the stipulated explosion protection cannot be guaranteed and/or the guarantee will become void!

This laser component emits CDRH Class II/IEC Class I laser light. Do not stare into beam.

CLASS 1 LASER PRODUCT
LASER KLASSE 1
APPAREIL À LASER DE CLASSE 1

Modifications require the written approval by the company GeCma Components GmbH.
General Instructions

Before starting the assembly read the entire operating manual!

In cases of doubt (in the form of mistranslation) the German operating manual is to be applied. We do not assume liability for misprints and errors in this operating manual.

The housings shall only be opened by personnel of Gecma Components GmbH.

Should you have any questions or suggestions please feel free to contact us any time:

GeCma Components GmbH
Heisenbergstraße 26 – 40
D-50169 Kerpen

Tel.: +49 (0)22 37 / 69 96 0
Fax: +49 (0)22 37 / 69 96 99
mailto:info@gecma.com
http://www.gecma.com

Technical progress

The manufacturer reserves the right to adjust all technical data without special announcement according to the technical progress.
Manual are subject to modifications and amendments / No liability for misprints and errors.

Repair work, hazardous material

The description of the respective fault(s) is in any case to be included with the devices which are sent to GeCma Components GmbH for repair.

The following measures are to be taken before sending a device in for repair:

Please remove the entire adhering medium residue. Pay special attention to sealing grooves and gaps which might contain medium residue. We have to ask you to refrain from sending the device back if it is impossible for you to definitely guarantee that all health-endangering material has completely been removed.
Costs which arise due to inadequate cleaning of the device for a potential disposal or for personal injury (cauterisation, etc.) will be charged to the proprietor of the device.

Used trademarks
AT, IBM and PS/2 are registered trademarks of the International Business Machines Corporation.
Bluetooth is a registered trademark of Bluetooth SIG, Inc.
Microsoft, Windows and Windows NT are registered trademarks of Microsoft Corporation.
All other trademarks mentioned and depicted in the text are trademarks of the respective owners and are recognized as registered.

Drawings and certifications
X92:
Intrinsically safe charging interface
Ex ia

Note 1:
All dimensions can slide variantly.
Modifications who are unaffected to the used protection methode are allowed.

Note 2:
For more detail, refer to the manual

<table>
<thead>
<tr>
<th>X92</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inside</td>
<td>+UI</td>
</tr>
<tr>
<td>Outside</td>
<td>GND</td>
</tr>
</tbody>
</table>
Output cable for Power and serial data interface X91
Ex ia

Note 1:
All dimensions can slide variability. Modifications who are unaffected to the used protection methods are allowed.
X91: Connector

To ASD (Application supporting device)
e.g. Explorer, ExMod-1-2-3, Challenger, etc

<table>
<thead>
<tr>
<th>Cable</th>
<th>Pin Nr. at Connector</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brown</td>
<td>1</td>
<td>+UI</td>
</tr>
<tr>
<td>White</td>
<td>2</td>
<td>GND</td>
</tr>
<tr>
<td>Yellow</td>
<td>3</td>
<td>RXD(INP)</td>
</tr>
<tr>
<td>Green</td>
<td>4</td>
<td>TXD(OUT)</td>
</tr>
</tbody>
</table>

X91: Cable

To ASD (Application supporting device)
e.g. Explorer, ExMod-1-2-3, Challenger, etc

Note 1:
All alterations can slide voluntarily. Modifications who are unsifted to the used protection methods are allowed.

Note 2:
For more detail, refer to the manual.
EC-TYPE-EXAMINATION CERTIFICATE


(3) EC-Type-Examination Certificate Number

TÜV 08 ATEX 7633

(4) Equipment: BCSI-1*

(5) Manufacturer: GECMA Components GmbH

(6) Address: Halsenbergstr. 26-40, 50159 Kerpen, Germany

(7) This equipment and any acceptable variation thereof are specified in the schedule to this certificate and the documents therein referred to.

(8) The TÜV CERT-Zertifizierungsstelle for ex-protected products of TÜV Rheinland Industrie Service GmbH, TÜV Rheinland Group, notified body No. 0035 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmosphere, given in Annex II to the Directive.

The examination and test results are recorded in the confidential report 10023466 296 /Ex7633-08-00
Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule of this certificate, has been assessed by reference to:

EN 61241-11: 2008

(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 EC-type-examination Certificate relates only to the design and construction of the specified equipment in accordance with Directive 94/9/EC. Further requirements of this Directive apply to the manufacture and supply of this equipment.

(12) The marking of the equipment shall include the following:

B I G Ex ia op IIC T4 Ga

B I D Ex iaD 20 T130°C

TÜV CERT-Zertifizierungsstelle für Explosionsschutz Cologne, 2008-12-18

Dipl. Ing. K. W. H. Schütz

This EC-type-examination Certificate without signature and stamp shall not be valid.

(13) Annex

(14) EC-Type Examination Certificate

TÜV 08 ATEX 7633

(15) Equipment and type:

Barcode scanner: BCSI-1*

15.1 Description:

The barcode scanner BCSI-1* are intrinsically safe apparatus designed to read all common barcodes 1D & 2D and to transmit this barcode data to an existing ASD (application supporting device).

The BCSI-1* are developed for use in area Zone 0 and Zone 20.

The BCSI-1* is available as cable and as radio frequency version.

The scanner as cable version has two variants: BCSI-C LP and BCSI-C HP (for Low Power and High Power respective).

The scanner as radio frequency version has two variants: BCSI-RF 10 and BCSI-RF 100 (for 10mW and 100mW respective).

The character * at the name BCSI-1* defines the versions of the scanner = C LP or C HP or RF 10 or RF 100

The character * at the name BCSI-1* is reserved for the manufacturer and can be any alphanumeric characters.

Description of variants:

1. C LP : Cable barcode scanner Low Power,
Barcode scanner with cable connection and low intrinsically safe input power at the power line. The connection interface to the other existing application supporting devices is made via serial intrinsically safe interface.

This variant is developed with additional batteries to provide the needed power for the scanner electronic.

2. C HP : Cable barcode scanner High Power,
Barcode scanner with cable connection and high intrinsically safe input power at the power line. The connection interface to the other existing application supporting devices is made via serial intrinsically safe interface.

3. RF 10 : Radio frequency scanner (Bluetooth)
Barcode scanner with data transmission by radio frequency with maximum radiated power of 10mW.

This variant is developed with integrated Bluetooth module to transmit a data to other existing supporting devices. The charging of this cordless

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TÜV Rheinland®
Genau. Richtig.
15.3 Technical Data

15.3.1 Electrical parameter of the X91 Interface BCSI- C LP:

In general:
All parameters for the intrinsically safe circuits are calculated as mixed circuits (with inductance and capacitance) in accordance to IEC 60079-11 clause 10.1.5.2.
It's only allowed to connect intrinsically safe signals to the interfaces with following electrical parameters.

In case that all data lines and supply circuits are short circuited the maximum output voltage is identical. The currents and the power are added.
The below listed parameters concerning the clearance / creepage distances are related to the external circuitry, which can be connected to the terminals:

15.3.1.1 When the distance between the supply line (X91-1) and the data lines (X91-3 and X91-4) at the associated apparatus complies to the clearance / creepage distances and separation on the standard IEC/EN 60079-11:

<table>
<thead>
<tr>
<th>Input parameters for the supply line: X91-1 (UI) X91-2 (GND)</th>
<th>Output parameters for the supply line: X91-1 (UI) X91-2 (GND)</th>
</tr>
</thead>
<tbody>
<tr>
<td>U_{\text{max}} \leq 5.5 \text{ V}</td>
<td>U_{\text{max}} = \text{negligible}</td>
</tr>
<tr>
<td>I_{\text{max}} \leq \text{not important}</td>
<td>I_{\text{max}} = \text{negligible}</td>
</tr>
<tr>
<td>P_{\text{max}} \leq 4\text{ W}</td>
<td>P_{\text{max}} = \text{negligible}</td>
</tr>
<tr>
<td>L_{\text{max}} = \text{negligible}</td>
<td>L_{\text{max}} = \text{negligible}</td>
</tr>
<tr>
<td>C_{\text{max}} = \text{negligible}</td>
<td>C_{\text{max}} = \text{negligible}</td>
</tr>
</tbody>
</table>

15.3.2 Electrical parameter of the X91 Interface BCSI- C HP:

15.3.2.1 When the distance between the supply line (X91-1) and the data lines (X91-3 and X91-4) at the associated apparatus complies to the clearance / creepage distances and separation on the standard IEC/EN 60079-11:

<table>
<thead>
<tr>
<th>Input parameters for the supply line: X91-1 (UI) X91-2 (GND)</th>
<th>Output parameters for the supply line: X91-1 (UI) X91-2 (GND)</th>
</tr>
</thead>
<tbody>
<tr>
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<td>U_{\text{max}} = \text{negligible}</td>
</tr>
<tr>
<td>I_{\text{max}} \leq \text{not important}</td>
<td>I_{\text{max}} = \text{negligible}</td>
</tr>
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<td>P_{\text{max}} \leq 4\text{ W}</td>
<td>P_{\text{max}} = \text{negligible}</td>
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<td>L_{\text{max}} = \text{negligible}</td>
</tr>
<tr>
<td>C_{\text{max}} = \text{negligible}</td>
<td>C_{\text{max}} = \text{negligible}</td>
</tr>
</tbody>
</table>
### 15.4 Additional Information

1. The device fulfills the impact test according to IEC 60079-0:2007 clause 26.4.2 table 12 for group II with high risk of mechanical damage.

2. The device fulfills the drop test according to IEC 60079-0:2007 clause 26.4.3 dropped four times from a height of at least 1 m onto horizontal concrete surface.

3. The device fulfills the thermal shock test according to IEC 60079-0:2007 clause 26.5.2.


### (16) Test Report No.: 2096Ex7633.08.00

### (17) Special Conditions for safe use

None.

### (18) Basic Safety and Health Requirements

covered by above mentioned standards

TÜV CERT Zertifizierungsstelle

Köln, den 08/2018

Dipl.-Ing. Klaus Wetterfeld

---

### 15.3.2.2

When the distance between the supply line (X91-1) and the data lines (X91-3 and X91-4) at the associated apparatus does not comply to the clearance / creepage distances and separation on the standard IEC/EN 60079-11:

### 15.3.3

Electrical parameter X02 interface of BCSI-RF10, BCSI-RF100

- $U_{\text{max}} \leq 10.8 \text{ V}$
- $I_{\text{max}} \leq \text{ not important}$
- $P_{\text{max}} \leq \text{ not important}$
- $U_{\text{max}} \leq \text{ negligible}$
- $C_{\text{max}} \leq \text{ negligible}$

The charger terminals are blocked with 3 diodes in reverse-biasing. Therefore the inner electric energy is not effective. Values for $U_0$, $I_0$, $P_0$, $L_0$ and $C_0$ are not relevant.
IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

Certificate No.: IECEx TUR 09.0001
Issue No.: 0
Certificate history: 

Status: Current

Date of issue: 2009-02-17
Page 1 of 3

Applicant: Geoma Components GmbH
Heisenberg Str. 26 - 40
D - 50169 Koeln
Germany

Electrical Apparatus: Bar Code Scanner BCSI-1 *
Optional accessories: 

Type of Protection: Intrinsic safety - Ex i, Intrinsic safety - Ex d, Optical radiation - Ex op is

Marking: Ex ia op is IIC T4 Ga
Ex ia IIC T130°C Da IP67

Approved for issue on behalf of the IECEx
Certification Body: Dipl.-Ing. Klaus Walingfield
Position: Head of ExGB

Signature: (for printed version)
Date: 17.02.2009

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the IECEx Website.

Certificate issued by:
TUV Rheinland Industrie Service GmbH
Am Grunen Stein
61103 Cologne
Germany

IECEx Certificate of Conformity

Certificate No.: IECEx TUR 09.0001
Date of issue: 2009-02-17
Issue No.: 0
Page 2 of 3

Manufacturer: Geoma Components GmbH
Heisenberg Str. 26 - 40
D - 50169 Koeln
Germany

Manufacturing location(s):
This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard(s) below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality System requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:
The electrical apparatus and any acceptable variation to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2007-10
IEC 60079-11 : 2006
IEC 60079-26 : 2006
IEC 60079-28 : 2006-09
IEC 61241-0 : 2004
IEC 61241-1 : 2005

Test & Assessment Reports:
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:
DE/UV/ExT/09.00100
DE/UV/CA/R06.0006/02
DE/UV/QM/R07.0001/00
IECEx Certificate of Conformity

Certificate No.: IECEx TUR 08.0001
Date of issue: 2009-02-17
Issue No.: 0
Page 3 of 3

Schedule

EQUIPMENT:
Equipment and systems covered by this certificate are as follows:

The barcode scanner BCSI is designed to read all common barcodes 1D & 2D and to transmit these barcode data to an existing ABD (application supporting device) in hazardous or non-hazardous areas. The BCSI is available as cable and as radio frequency version.

The cable scanner version has an intrinsically safe interface for power and data. The data transmission is realized via a serial interface. The cable version is available for low-power and high-power intrinsically safe power interfaces. The radio frequency version has an intrinsically safe interface for charging of internal batteries in hazardous areas via intrinsically safe interfaces, such as for instance ExMod-1-2-3. The data transmission is realized via a radio frequency Interface (Bluetooth). All versions of the BCSI are developed for use in hazardous areas Zone 0, Zone 20, EPL Ga and EPL Da.

CONDITIONS OF CERTIFICATION: NO
Erklärung der EG-Konformität

/ Denkmittel EG - Goûtferment / Abolition de Conformité CE

Wir / Wir / Nouns GECMA Components GmbH
Meldebrief Nr.: 2640
50169 Düsseldorf, Germany

erklären in alleiniger Verantwortung, dass unser Produkt / declare under our sole responsibility that the product / attester sous notre responsabilité que le produit

auf welches sich diese Erklärung bezieht, den Beibehalten der folgenden Richtlinien entspricht / to which this declaration relates is in accordance with the provision of the following directives / ce à l'intérieur de laquelle correspond aux dispositions des directives suivantes:

<table>
<thead>
<tr>
<th>Produktname</th>
<th>Produkt</th>
<th>Certificate</th>
<th>Standard</th>
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</thead>
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<tr>
<td>Challenge 18-3-PR2</td>
<td>Challenge 20-3-PR2</td>
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<td>EN 50014-1, EN 50014-2, EN 50014-3, EN 50014-4</td>
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</table>

Diese Zertifizierung ist Bestandteil der Konformitätserklärung welcher weitere Details zu entnehmen sind. / The respective certificate is a part of this declaration of conformity of which further details are to be referred. / chaque certificat indique de manière plus détaillé cette présente déclaration. Pour plus de détails, veuillez se référer au document de chaque certificat.

94/9/EG / ATEX Richtlinie
801/93/EWG / EG-Zweckbestimmung
72/238/EG Miedernungsandrohnn

GECMA Components GmbH
Hofmarkstrasse 25/40
50169 Düsseldorf, Germany
Web: www.gecma.com
E-mail: info@gecma.com
Telefon: +49 211/271 / 5016-30
Fax: +49 211/271 / 5016-99


Geprüfte Komponenten / Folgende / Verantwortlich / Entwurfs / Einführung / Development

Grafik: / Bild: / Diagram: / Figure: / Sketch: / Design / Entwicklung / Entwurf / Planung / Design

Datum: 16.12.2006 / Date: / Date of Import: / Date of Approval: / Date of publication: / Date of issue: / Date of delivery

Für Bestellungen und Verfügbarkeit von unserem "Allgemeinen Geschäftsbedingungen" / All orders are subject to the GECMA Components GmbH Terms and Conditions of Sale / sans autre accord écrit / sans autres conditions.