**DATA SHEET**

# UTP DIFF2

## Bidirectional RFID Reading System

**References:**

**UTP DIFF2W – SCIBT65**

**UTPDIFF2RS – SCIBT66**

- *Automated System for treatment and detection of active RFID tag's s traffic direction.*
- *Serial Interface : RS232, RS485 or RS422*
- *Options : Ethernet, Wiegand 26 bits or Clock & Data (for Access Controller)*
- *Option : 6VDC backup battery*
- *Applications : bidirectional-ways detection and counting, access control*

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# 1. MAIN SPECIFICATIONS

| Specifications | | |
|---|---|---|
| On-Board Power Supply | 6 to 12 VDC or 230VAC | |
| Average Current | 80 mA @ 6V (2VA @ 230Vac) | |
| Receiving Range | Adjustable up to 80m (open field) | |
| On-board connectors | Pluggable Screw connectors | |
| Access Control Option | 2 indepedant ways (badges for the entrance and for the exit) | |
| Output Protocols | WIEGAND | CLOCK & DATA |
| Connections | Data 0<br>Data 1<br>PRESENCE(OPEN collector) | DATA<br>CLOCK<br>PRESENCE (OPEN collector) |
| Data Format | 26 bits | 10 or 13 characters |
| Serial Interface | 1 RS232 or RS485 | |
| Connectivity Option | External IP converter | |
| Antenna Connectors | 2 BNC female connectors for directive RFID antenna (SLENDER) | |
| Casing | ABS, waterproof, W=180 mm / H= 90 mm / L = 182 mm | |
| Operating Temperature | -20°C to +60°C | |
| Standards | EN 301 489 – 3 : 2002 V1.4.1 ; EN 300 220 – 2007 : V2.1.2 ; CE Mark ; RoHS Certified | |

# 2. SCOPE

This document describes all the available features of the UTP, their settings as well as the way to connect the device for its implementation.

This scope of this equipment is to manage and determinate the sense of passage for all the active tags which could pass through.

# 3. EQUIPMENT SPECIFICATIONS

## 3.1 GENERAL DESCRIPTION

By the internal RS232 connector, all the use variables can be reprogrammed with a PC under a Microsoft Hyperterminal or with any other PDA in what a terminal with serial link is installed.

You can also modify the use parameters thanks to the internal display and its 2 buttons at the right of the display.

**The UTP DIFF2 is composed of :**

- A plastic casing,
- A CPU board and its power supply,
- 2 converter boards RS232 / Wiegand or D&C

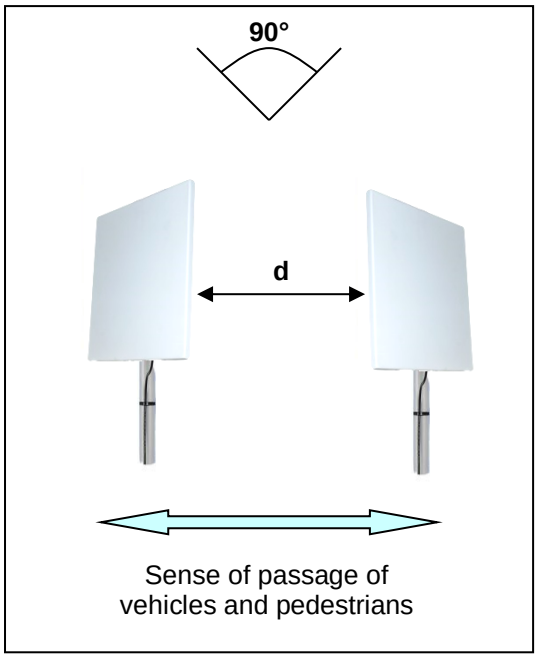
## 3.2 INSTALLATION OF ANTENNAS

The UTP DIFF2 device works with 2 directionnal antennas SLENDER.

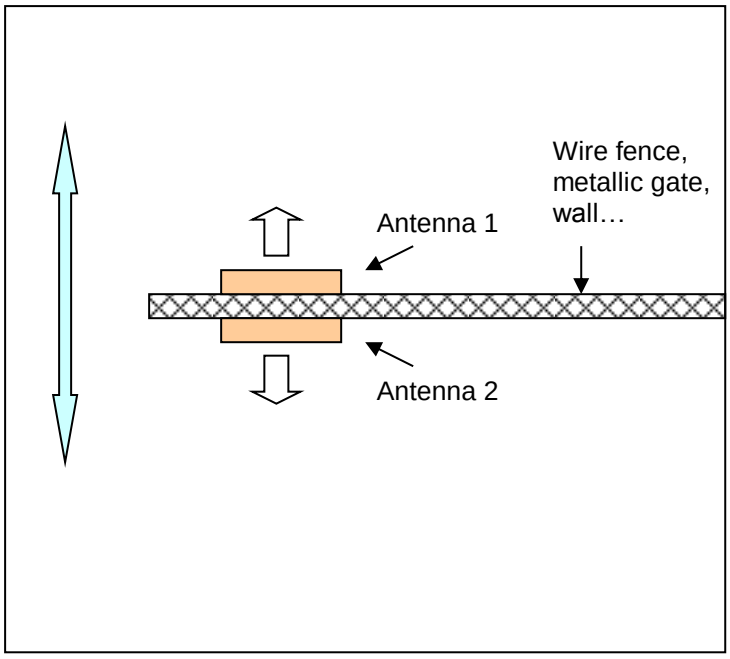
The antennas are connected to the UTP DIFF2 device by 50Ω coaxial cables (RG58).

- The antennas have to be directed the one towards the inside of the site, the other one towards the outside.
- A rough angle of 90° has to be defined between the 2 antennas
- We recommend not to place the antennas with their backs to one another. A distance between the 2 antennas of 0.5 m minimum (d min) is recommended.
- A metallic faceplate between the 2 antennas (like wire netting or wire fence) can be also placed.

**A too long length of coaxial cable could attenuate the tag's received radio signal !**

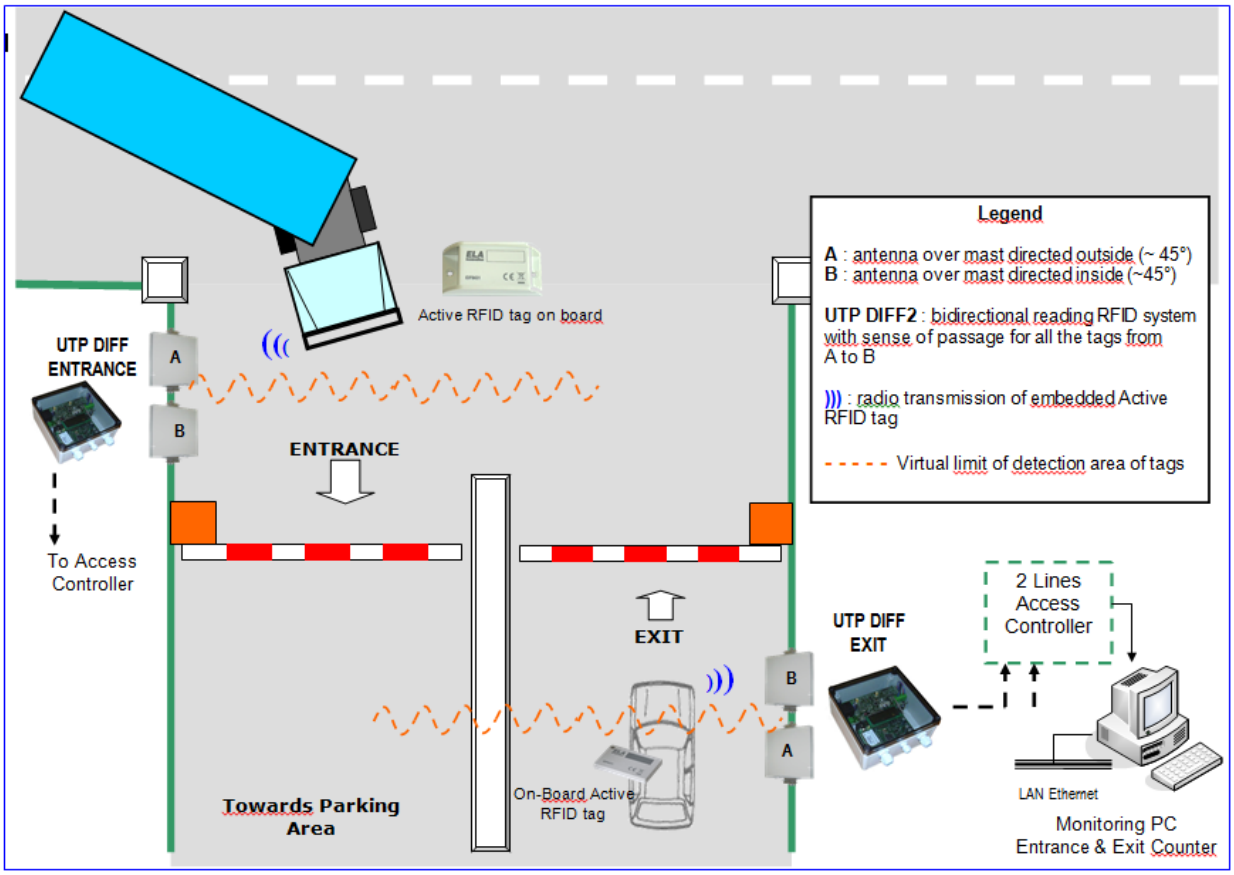



**Example 1**
Directional antennas with minimal distance fixed over masts.



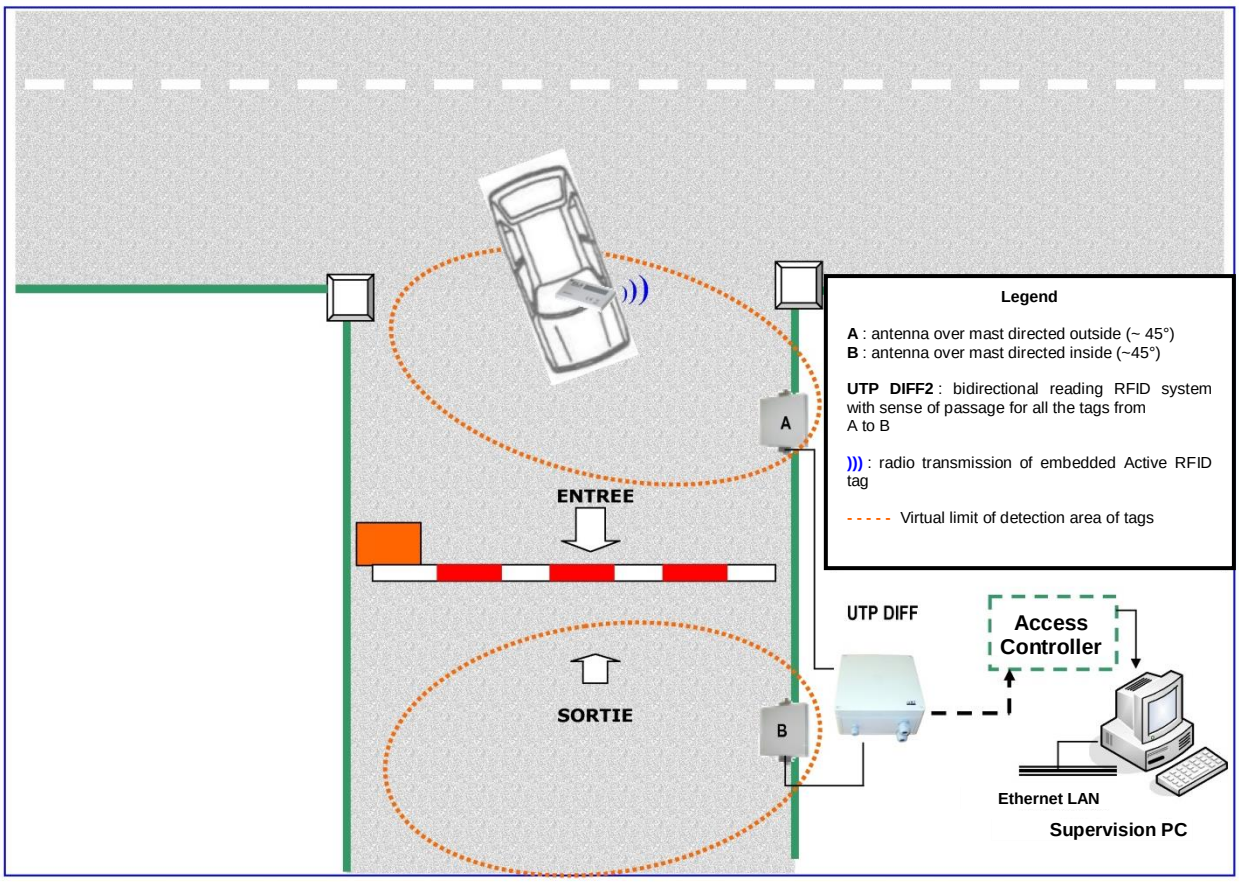

**Example 2**
A back to back assembly, separated by a metallic plate

## 3.3 EXAMPLE OF « DIRECTION OF PASSAGE » MODE



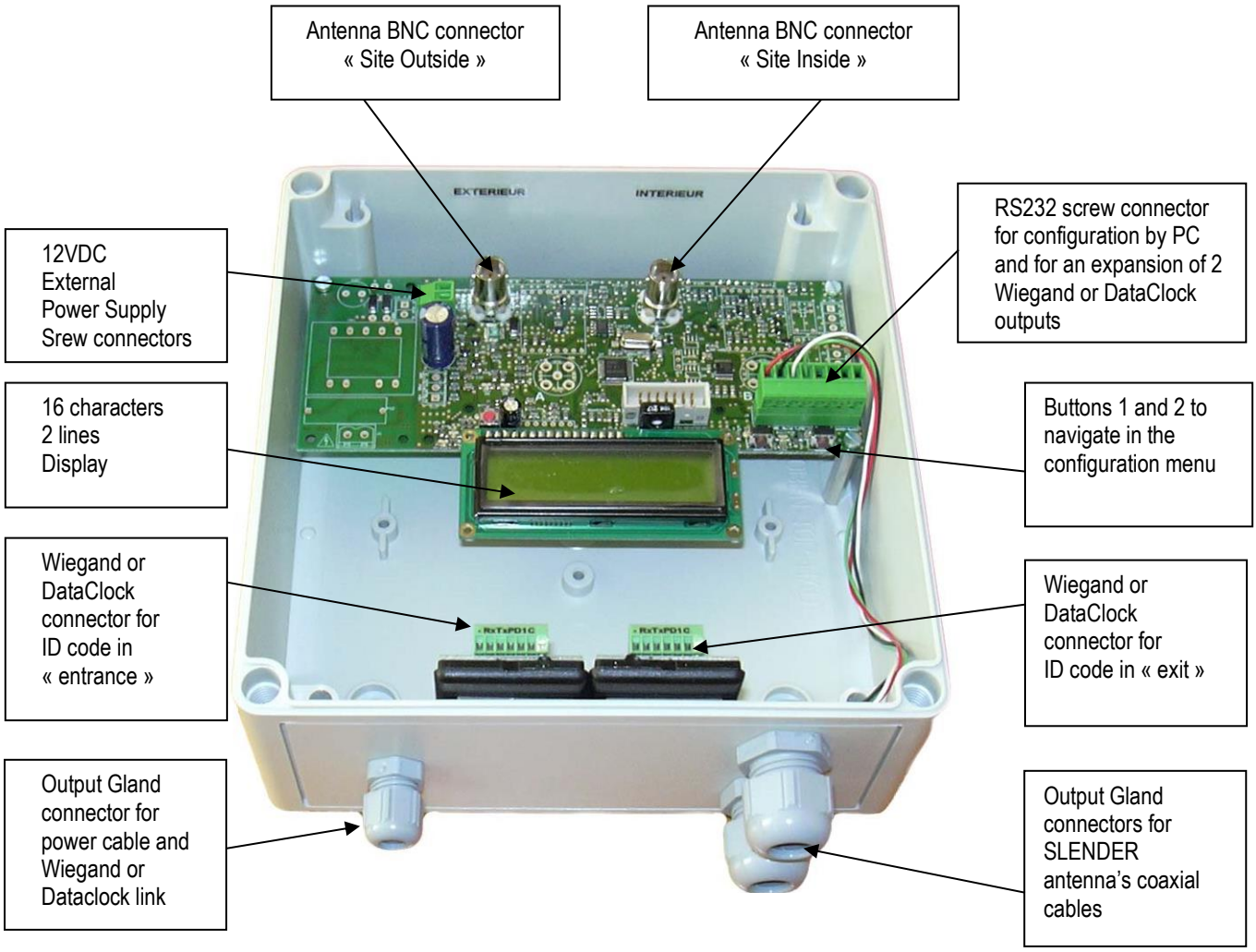

A minimum distance of 4 meters has to be respected between the 2 antennas and the access barrier. The vehicles equipped with an active tag DO NOT have to be parked at 10 meters or less from the antennas.

## 3.4 EXAMPLE OF « BUFFER AREA» MODE




A minimum distance of 4 meters has to be respected between the 2 antennas and the access barrier. The vehicles equipped with an active tag DO NOT have to be parked at 10 meters or less from the antennas.
.

## 3.5 PHYSICAL INFORMATION




SLENDER antenna directed towards the « Outside of the site »

SLENDER antenna directed towards the « Inside of the site »

The UTP DIFF2 is composed of 3 electronic boards and 1 plastic housing.
The main electronic board manages the CPU unit and the power supply unit.

- UTP DIFF2 main board : CPU & Power management
- 2 expansion boards for Wiegand or D&C conversion. The Wiegand or DataClock converter boards are directly powered up by the main CPU board.

**Do not power the Wiegand / Dataclock converter boards directly.**

## 3.6 INTERFACE SPECIFICATIONS

### 3.6.1 SERIAL PORT

- **UTP :** RS232 serial port + RS485 port useful to move away the Wiegand converters over a high distance (a RS485 / RS232 converter is required at the input of the pair of converters)
- **CONVERTER 1 :** UART RS232 link, compatible with the readers SCIBT10 9600 bauds nor parity neither control flow. The direct serial link with the converters enables to change the output'stype : Wiegand or D&C (Wiegand by default).
- **CONVERTER 2 :** UART RS232 link, compatible with the readers SCIBT10 9600 bauds nor parity neither control flow. The direct serial link with the converters enables to change the output'stype : Wiegand or D&C (Wiegand by default).

### 3.6.2 WIEGAND / DATA-CLOCK CONNECTORS

The selection between Dataclock and Wiegand is done by the configuration port and in a software way.

The clock frequency is 1Khz.

In a Wiegand operating mode, the Data signal becomes Data1 and the Clock becomes Data0.

**WIEGAND or DATACLOCK converter version**

| Pin | Signal | Description |
|---|---|---|
| **C** | D0 or Clock | Open collector output D0 in Wiegand mode or Clock in D&C mode |
| **D** | D1 or Data | Open collector output D1 in Wiegand mode or Data in D&C mode |
| **P** | Presence | Open collector output Presence in Wiegand and D&C modes |
| **Tx** | TX | Reader RS232 Output TX |
| **Rx** | RX | Reader RS232 Input RX |
| **⏤** | GND | Ground |

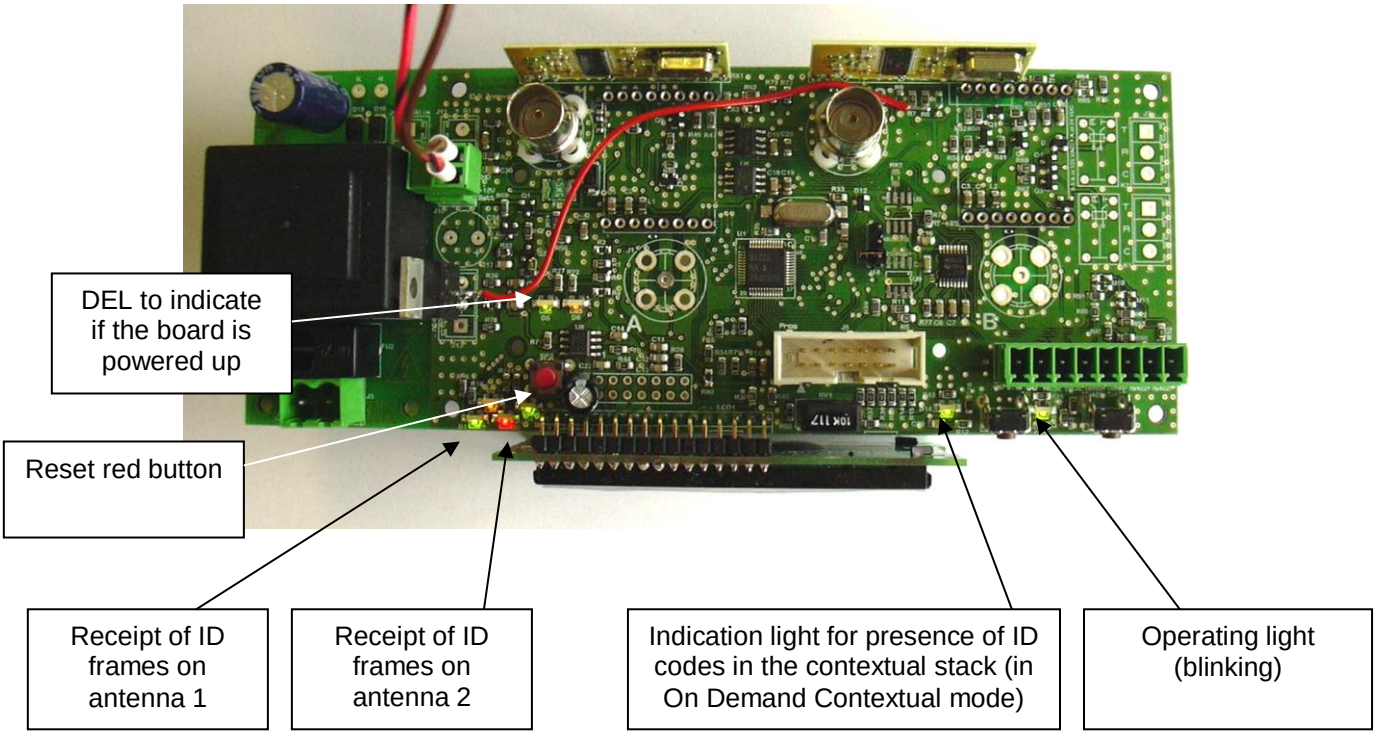
**Table 1 : converter pining**

| Pin | Wiegand | Clock & Data |
|---|---|---|
| C | DATA 0 | CLOCK |
| D | DATA 1 | DATA |
| P | Presence | |

**Table 2 : Wiegand and D&C signal assigment**

The type of Wiegand or D&C outputs is open collector output with Imax = 100 mA

### 3.6.3 CONTROL DELS




### 3.6.4 LCD DISPLAY AND MENU BUTTONS

A LCD display is available on the main board with 2 lines of 16 characters.

In the normal mode : the upper line is dedicated to the last events which occur in entrance (at the left of the display) and in exit (at the right of the display). The tag's identifier is written in hexa :

Example « 0C1A34 » means :

- **In Wiegand 26 bits mode :** Site Code (FC) = 12 (decimal converting of 0C) and Identity = 6708 (decimal converting of 1A34).
- **In D&C mode :** Identity = 793140 (decimal converting of 0C1A34).

In a normal mode, the lower line is dedicated to the direct reading of tags on each antenna. The tags inside the site are displayed at the left, the tags outside the site are displayed at the right.

By keeping one of the 2 buttons pressed down, the following information can be displayed successively:

- Summary of configuration settings page 1
- Summary of configuration settings page 2
- Entry into the configuration menu for normal mode.

Display at the power-up or after a reset :

```
Reset ...
```

```
ELD v0.4.6/C
ELA Innovation
```

```
ELA ELD v0.1.8
Enter Menu ...
```

At this step, either by pushing one of the 2 buttons (1 and 2) you can access to the configuration menu or the following information is displayed to list all the load configuration parameters (please refer to the mnemonic table in the next paragraph).

```
IDR SE1 SE2 DEL
001 160 160 010
```

```
A1 A2 TO RE MOD
00 00 020 00 SDP
```

```
   Menu de
Configuration
```

**The display of the configuration menus comes down like shown below :**

```
Tag Timeout?
1->OK 2->Next
```
TO

```
Threshold 1?
1->OK   2->Next
```
SE1

```
Threshold 2 ?
1->OK 2->Next
```
SE2

| | |
|---|---|
| Diff mode?<br>1->OK 2->Next | MOD |
| Diff Thresh?<br>1->OK 2->Next | DEL |
| Channel 1 atten?<br>1->OK 2->Next | A1 |
| Channel 1 atten?<br>1->OK 2->Next | A2 |
| Debug?<br>1->OK 2->Next | Debug pattern |
| Parity?<br>1->OK 2->Next | |
| Car parking?<br>1->OK 2->Next | |
| Exit?<br>1->Yes 2->No | |

## MNEMONIC TABLE

| Mnemonic value | Description |
|---|---|
| IDR | UTP DIFF2 Identification Code |
| MOD | UTP DIFF2 operating mode which defines the treatment logic for the sense of passage |
| SE1 | Radio threshold of tag's reading : channel 1 |
| SE2 | Radio threshold of tag's reading : channel 2 |
| DEL | Delta = min radio gap between the 2 antennas for an efficient reading of tags |
| A1 | Radio attenuation radio channel 1 (inside) |
| A2 | Radio attenuation radio channel 2 (outside) |
| TO | Time OUT : leadtime to consider active tags out of detection area |

| | |
|---|---|
| RE | Redundancy of tag's reading |

**A full configuration menu, more detailled than the « normal » one, exists.**

**To access to this full configuration menu, you have to reset the UTP DIFF2 main board then to keep pressed one of the 2 buttons when you get the system prompt.**

# 4. MECHANICAL SPECIFICATIONS

Technical specifications:

- Housing size :180mm x 182mm x 90mm
- Waterproof level : IP65 (IEC 529)
- Flammability protection : UL 94-V2
- Standard color : RAL 7035
- UTP DIFF2 operating temperature range : -10° to 60°C

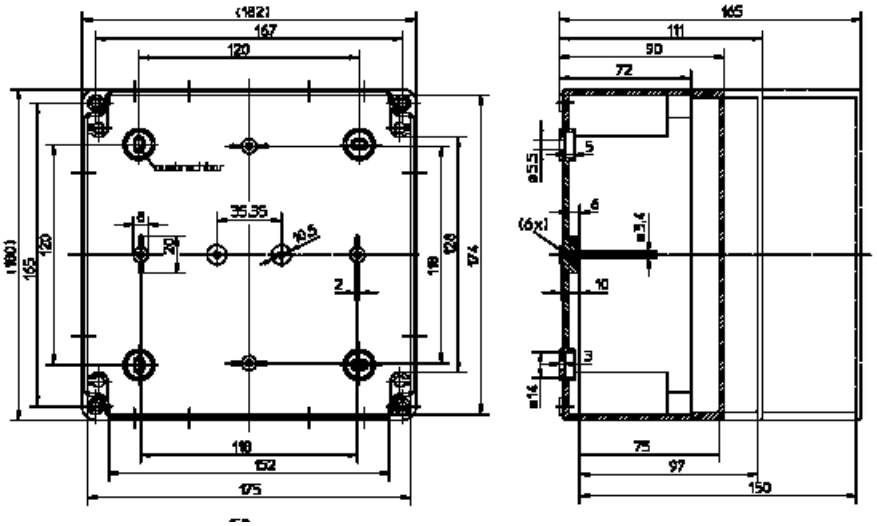



Figure 6 : UTP DIFF2 housing

# 5. CONNECTOR SPECIFICATIONS

## 5.1 EXTERNAL LINKS

| J10 CONNECTOR | |
|---|---|
| **N° Pin** | **Signal** |
| 1 | + 12 VDC |
| 2 | Ground |

**Screw connector J10's pining**

| J4 CONNECTOR | |
|---|---|
| **N° Pin** | **Signal** |
| 1 | +5V DC |
| 2 | Ground |
| 3 | UTP DIFF2's RS232 RX |
| 4 | UTP DIFF2's RS232 TX |
| 5 | RS485 + / TX RS422 + |
| 6 | RS485 - / TX RS422 - |
| 7 | RX RS422 + |
| 8 | RX RS422 + |

**RS232 connector J4's pining**

| WIEGAND – D&C CONVERTER | | |
|---|---|---|
| **N° Pin** | **Signal** | **Description** |
| 1 | Alim + | NOT TO BE CONNECTED |
| 2 | D0 or Clk | Open collector output D0 in Wiegand mode or Clock in D&C mode |
| 3 | D1 or Data | Open collector output D1 in Wiegand mode or DATA in D&C mode |
| 4 | Presence | Open collector output Presence in Wiegand and D&C modes |
| 5 | TX | Reader's RS232 TX |
| 6 | RX | Reader's RS232 RX |
| 7 | GND | Ground |

# 6. SOFTWARE DESCRIPTION

## 6.1 OPERATING PRINCIPLE

### 6.1.1 MODE « DIRECTION OF PASSAGE » OR « CONFIRMATION OF PASSAGE »

**Entrance :**
When a vehicle goes inside in the entrance direction, the tag's ID code will be sent to the **« Entrance » connector** as soon as the vehicle will be detected by the **Exit reader**, after a mandatory passage by the Entrance's detection area.

**Exit :**
Whe a vehicle goes outside in the exit direction, the tag's ID code will be sent to the « Exit » connector as soon as the vehicle will be detected by the Entrance reader, after a mandatory passage by the Exit's detection area.

The Entrance and Exit detection areas can overlap.

**« Time Out » : TO**
The time of passage for a vehicle between the end of the first area and the beginning of the second one has to be shorter than a programmable « Time Out » (see the UTP DIFF2's configuration chapter).

The tag's ID frame is only sent to the appropriate connector once.

### 6.1.2 MODE "BUFFER AREA"

**Entrance :**
When a vehicle goes inside in the Entrance direction, the tag's ID code will be sent to the **« Entrance » connector** as soon as the vehicle will be detected by the **Entrance reader**.
A passage into the detection area of the **Exit reader** during a time shorter than the programmed « Time Out » will inhibit the ID code information on the **« Exit » connector** for this tag.

**Exit :**
When a vehicle goes outside in the Exit direction, the tag's ID code will be sent to the **« Exit» connector** as soon as the vehicle will be detected by the **Exit reader**.
A passage into the detection area of the **Entrance reader** during a time shorter than the programmed « Time Out » will inhibit the ID code information on the **« Entrance » connector** for this tag.

The Entrance and Exit detection areas can overlap.

The tag's ID frame is only sent to the appropriate connector once.

### 6.1.3 U-TURN

Whatever the selected operating mode, an U-turn can be done by the vehicle in the Exit reader's area.
A vehicle which is just entering can turn back in the Exit detection area.
However, in order that the exit be taken into account, it's mandatory that the vehicle has left the Entrance detection area for a time longer than the « Time Out ».

### 6.1.4 SE1 AND SE2: ANTENNA RADIO THRESHOLD

These thresholds enable to limit the tag's reading distance for each antenna.

### 6.1.5 DEL

DEL means DELTA or the radio gap between the 2 antennas.
This value enable not to read a tag if it is located in the medium area of the 2 antennas.

### 6.1.6 A1 AND A2 ATTENUATOR

These 2 parameters enable to balance the radio difference between the 2 antennas.

### 6.1.7 RE REDUNDANCY

This parameter enables to limit the reading of tag only if they exceeded the defined level of redundancy.

### 6.1.8 INVENTORY MODE

In this mode, the UTP DIFF2 device works like an Active RFID reader with 2 antennas, programmed in the CONTEXTUAL mode.

The tags detected in the areas of both antennas have their ID code sent once to the channel 1 (for instance Entrance).
The same tags out of the area, after the Tag Timeout has expired, have their ID code sent to the channel 2 (for instance Exit).

See below examples of ID frames :
[05AB89 01] ID code 056789 read at the entrance
[05AB89 02] ID code 056789 read at the exit

Therefore this mode can be used to update an inventory in a real time.

### 6.1.9 DEBUG MODE

The debug mode can be activated upon request either through the RS232 port (used also through the GPRS connection) or on the radio modem.

The mnemonic fields are :
- RS = GPRS – RS232 port
- RX = radio modem

3 DEBUG modes exist :
- **« PILE» mode :** every second, the UTP DIFF2 device sends the list of detected tags in the contextual stack.
- **« ONLINE » mode :** enables to get the tag's ID code as soon as the tag is detected
- **« MCHD_ » mode :** similar to the « ONLINE » mode with the same frame format as the one used by the SCIEL READER devices.

In the debug mode, the wake-up output of GPRS unit is permanently activated.

#### *6.1.9.1 "PILE" DEBUG MODE*

This **PILE** debug mode enables to display every second the list of all the detected tags.

For each tag, the following information is provided :
- The tag's RSSI power on the external antenna (Pe)
- The tag's RSSI power on the internal antenna (Ps)
- The power difference between the external and internal antennas
- The redundancy for each antenna (max = programmed level of redundancy)
- The Time Out for each tag. This counter is given in hexa. It is automatically reinitialized at its programmed value at each time that the tag is detected, then it decreases every second if the tas is not yet detected.

The placement of the antennas has to be done in order that the radio power difference the 2 antennas be significant enough (approximatively 20h) when the tag is located inside the site as well as it is located outside.

*Example of frame format in the PILE mode :*
[CE 8C -42 0E 0 0 05ABC1]
[C9 7B -4E 0D 0 0 85A17D]
[D1 A0 -31 0D 0 0 07CE24]

#### *6.1.9.2 "ONLINE" DEBUG MODE*

This **ONLINE** debug mode enables to display all the received ID codes.

For each received ID code, the following information is provided :
- The tag's RSSI power on the external antenna (Pe)
- The tag's RSSI power on the internal antenna (Ps)
- The power difference between the external and internal antennas
- The tag's ID code

*Example of frame format in the ONLINE debug mode :*
[9D C3 +26 011212]
[88 99 +11 002222]
[9B BD +22 85B17E]

#### *6.1.9.3 "MCHDiff_" DEBUG MODE*

This **MCHDiff_0x** debug mode is similar to the ONLINE mode with the following frame format :
- The tag's radio power on the antenna which receives the tag for the best
- The tag's ID code
- The antenna's ID which has the highest received radio power (01 = outside and 02 = inside) if the UTP DIFF2's ID code is 1.

Actually, in this differential mode, the first antenna has the same ID as the first antenna's one.

*Example of frame format in MCHDiff_0x mode:*
*[9D011212**0**1] means that the 011212 has been read with a better RSSI level on the external antenna.*

The MCHDiff_4x debug mode is similar to the « MCHDiff_0x » mode, only with another first digit for the antenna's code, in order to avoid some data's conflicts : with **4**1 = external and **4**2 = internal in the case that the UTP's ID code is 1.

*Example of frame format in MCHDiff_**4**x mode:*
*[9D011212**4**1] means that the 011212 tag has been read with a better RSSI level on the external antenna.*

## 6.2 UTP DIFF2 CONFIGURATION AND TESTS

### 6.2.1 CONFIGURATION WITH "NORMAL" MENU

To access to the normal configuration menu, you have to keep pressed one of the two menu buttons until getting the prompt.

Here is the list of all the available parameters :

| DESCRIPTION | DEFAULT VALUE |
|---|---|
| Tag Timeout | 20s (14h) |
| Radio Threshold Channel 1 | A0h |
| Radio Threshold Channel 2 | A0h |
| Diff mode | 0 = SDP |
| Diff threshold | 0Ah |
| Channel 1 attenuator | 0 |
| Channel 2 attenuator | 0 |
| Debug | Deactivated (0) |
| RS232 parity | No parity, 1 stop bit |
| Car parking | Deactivated |

The modifications are recorded when you go out of the configuration menu. If you don't want to record the modifications, you have to go out of the menu by reset.

**You have to to go out of the menu, so that the system could run.**

### 6.2.2 CONFIGURATION WITH FULL MENU

To access to the full configuration menu, you have to reset the UTP DIFF2 main board, then when you get the prompt, you have to keep pressed the 2 menu buttons.

Here is the list of all the available parameters :

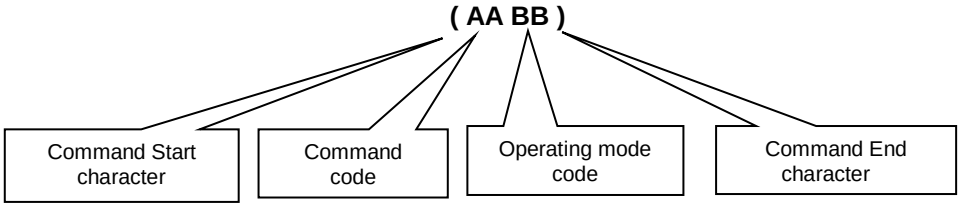
| DESCRIPTION | DEFAULT VALUE |
|---|---|
| Operating mode (ONLINE or ON DEMAND) | ONLINE |
| Converter Output Interface | Wiegand |
| Tag Time Out | 20s (14h) |
| Reader ID | 01 |
| Radio Threshold (1 and 2) | A0h |
| Tag ID length (16 or 24 bits) | 24 bits |
| COM Port speed (9600bds mandatory with Wiegand converters) | 9600 bds |
| Redundancy | 0 |
| Delta CKS | 0 |
| CKS length | 8 bits |
| tSndEv (*100ms) | 5 * 100ms |
| Diff mode (or operating mode for treatment of direction of passage) | 0 = SDP |
| Diff Threshold | 0Ah |
| Channel 1 attenuator | 0 |
| Channel 2 attenuator | 0 |
| RS232 DEBUG mode | Deactivated (0) |
| GPRS Timeout | Deactivated (0) |
| RS232 Parity | No parity, 1 stop bit |
| Car parking | Deactivated |
| Test Tag CKS | 127 |
| Test Rec1 ID or reader ID for the test tag's frames (detected on the external antenna) | 1 |
| Test Rec2 ID or reader ID for the test tag's frames (detected on the internal antenna) | 2 |
| Language | FR |

**You have to to go out of the menu, so that the system could run.**

### 6.2.3 CONFIGURATION PORT

| RS232 PORT SETTINGS | | | | |
|---|---|---|---|---|
| Vitesse | Data | Stop | Parity | Flow control |
| 9600 Bds | 8 bit | 1 | No | No |

Here is the command format :




Examples :

- To send the instruction (0500) enables to know with the command's answer the « Time Out » value of the tags. An answer (0514) means that the « Time Out » is 20 seconds.

- To send the instruction (061E) enables to define the « Time Out » at 30 seconds. The UTP DIFF2 will return OK if the modification has been correctly taken into account.

### 6.2.4 ENTRANCES AND EXITS ON THE RS232 CONFIGURATION PORT

On the RS232 configuration port, an entrance is indicated by the following way :
[XXYYYYYY01]

On the RS232 configuration port, an exit is indicated by the following way :
[XXYYYYYY02]

Where :
- XX : means the RSSI radio power level
- YYYYYY : means the tag's ID code
- 01 : means the Entrance code
- 02 : means the Exit code

*Please note that the values are coded in hexadecimal*

Please find below the list of all the configuration features and commands :

| Ela Innovation - Lecteur Differentiel v0.4.6/C | | | | |
|---|---|---|---|---|
| Parameter | value | Read | Modify | |
| Operating Mode | 02h | (01xx) | (02__) | 1 |
| Output Type Selection | 02h | (03xx) | (04__) | 2 |
| Tag Stack Timeout | 14h | (05xx) | (06__) | Expressed in seconds |
| Receiver ID | 01h | (09xx) | (19__) | 3 |
| Reception Level ch 1 | A0h | (0Bxx) | (0C__) | |
| Reception Level ch 2 | A0h | (C4xx) | (C5__) | |
| Radio Frame Format | 02h | (10xx) | (11__) | 4 |
| UART1 RS232 Speed | 00h | (12xx) | (13__) | 5 |
| UART1 RS232 Parity | 00h | (CAxx) | (CB__) | 6 |
| RS232 Format (ASC/Bin) | 00h | (14xx) | (15__) | 7 |

| | | | | |
|---|---|---|---|---|
| Answer Delay (msec) | 00h | (16xx) | (17__) | 8 |
| Redondancy Level | 00h | (1Cxx) | (1D__) | |
| Delta Checksum | 00h | (C0xx) | (C1__) | |
| Checksum Length 16 bits | 01h | (C2xx) | (C3__) | 9 |
| Diff Mode (SDP=0/SAS/INV) | 00h | (24xx) | (25__) | 13 |
| Differential Threshold | 0Ah | (26xx) | (27__) | |
| Channel 1 Attennuation | 00h | (28xx) | (29__) | |
| Channel 2 Attennuation | 00h | (2Axx) | (2B__) | |
| Ev Send Time (x100msec) | 0Ah | (2Cxx) | (2D__) | |
| Signal Event presence | 01h | (2Exx) | (2F__) | 10 |
| Delta Checksum Test Tag | 7Fh | (82xx) | (83__) | |
| ID Rec Chann. 1 Test Tag | 01h | (84xx) | (85__) | |
| ID Rec Chann. 2 Test Tag | 02h | (86xx) | (87__) | |
| Debug Mode | 00h | (C6xx) | (C7__) | 11 |
| Timeout GPRSOK (x10min) | 00h | (C8xx) | (C9__) | 12 |
| Parking Frames Enabled | 00h | (CCxx) | (CD__) | 14 |
| Language (FR=0/EN) | 01h | (9Exx) | (9F__) | |
| ID Filtering = 000000/FFFFFFh | | (F4/F2) | (F5/F3) | |
| Test Tag ID = 012345h | | (F0) | (F1) | 15 |
| Send radio Levels | | (97xx) | -- | 16 |
| Send Contextual Tag Stack | | (0Ann) | -- | |
| Send/clear Context. Tag Stack | | (AAxx) | -- | 17 |
| Send Input/Output events | | (0Enn) | -- | 18 |
| EEPROM parameters | | (9Axx) | (9B4A) | |
| Recover Default Setup | | -- | (9C5E) | |

To get the above table through the RS232 link, please send the commande [9A0101]

**Any change through the RS232 configuration port is saved in the internal EEPROM memory only after having sent the command (9B4A).**

**Configuration notes :**

1. The operating mode's value is :
   - ✓ either « ONLINE » (02) and un event like Entrance / Exit is sent immediately to the RS232 link
   - ✓ or « ON DEMAND» (04) and the list of events is sent only upon request (command (0E00) ou [0E0000])

2. RS 232 = 01 / Wiegand = 02 / D&C 10 = 03 / D&C 13 = 04

3. The UTP DIFF2's ID code must be odd. Entrance = ID, Exit = ID+1

4. 01 = 16-bits tag / 02 = 24-bits tag

5. 9600 bds = 00 / 14400 bds = 01 / 19200 bds = 02 / 28800 bds = 03 / 31250 bds = 04 / 38400 bds = 05 / 57600 bds = 06 / 115200 bds = 07.

6. Use of parity on the RS232 link : 00 = NONE / 01 = activated parity

7. 00 = RS232 in ASCII / 01 = RS232 frame in binary.

8. Delay between a request and the UTP DIFF2 answer. Value expressed in msec.

9. 8-bits CRC = 00 / 16-bits CRC = 01

10. To be used to wake-up the GPRS module and to indicate the presence of an event in the contextual stack.

11. DEBUG modes :
    - ✓ 00 : no debug
    - ✓ 01 : debug RS PILE (over UART1)
    - ✓ 02 : debug RX PILE (over UART0)
    - ✓ 03 : debug RS ONLINE (over UART1)
    - ✓ 04 : debug RX ONLINE (over UART0)
    - ✓ 05 : debug RS MCHDIFF (over UART1)
    - ✓ 06 : debug RX MCHDIFF (over UART0)

12. To be used of the GPRS's WDT: the GPRS module is reset if this last one hasn't indicated its presence for the value valeur * 10 minutes. To be tuned in function of the GPRS wake-up period. 00 = deactivated reset feature.

13. (24XX) : read the differential mode
    (25YY) : select the differential mode

14. Where YY = 00 (SDP), 01 (SAS) et 02 (INV)

    Where :
    - ✓ SDP means Direction of passage
    - ✓ SAS means Buffer Area
    - ✓ INV means Inventory

15. The information of a tag leaving a static location close to one the 2 antennas can be sent to the RS232 link for treatment.

    The frame format is the following : [XX05AB8981] or [XX05AB8981]
    - ✓ XX : tag's RSSI level
    - ✓ 05AB89 : tag's ID code
    - ✓ 81 : means that the tag 05AB89 has left a static place close to the « ENTRANCE »antenna
    - ✓ 82 : means that the tag 05AB89 has left a static place close to the « EXIT » antenna

    The values are coded in hexadecimal

16. A tag with the same ID code as the Delta CKS Test Tag's one will be ignored by the UTP DIFF2's processing operations and will be sent directly to the RS232 port. By this way, the user has the possibility to get an easy and simple way to test the correct running mode of the complete UTP DIFF2 device.

17. Measurement of background RF noise.

18. Similar to the command 0A (list of tags detected by the antenna 01 or 02) with deletion of the contextual stack after having sent the command on the RS232 link.

19. List of tags being entered and gone out (in ON DEMAND mode).

## 6.3 CONFIGURATION OF WIEGAND AND D&C CONVERTERS

**Configuration by the UTP DIFF2 full configuration menu :**
You can configure the converters directly by the full configuration menu. To do that, the converters have to be connected to the UTP DIFF2 main board.

**Configuration by direct connection to the converters :**

This method requires a specific cable. Please contact our technical support for more details.

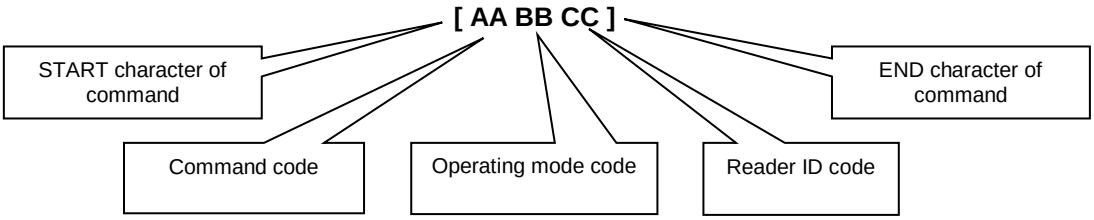
RS232 OUTPUT :
Tx Rx GND available on the screw-connector or on the DB9 Male connector (depending on the UTP DIFF2 version)

| RS232 PORT SETTINGS | | | | |
|---|---|---|---|---|
| Vitesse | Data | Stop | Parity | Flow control |
| 9600 Bds | 8 bit | 1 | No | No |

**Command codes on Microsoft® HyperTerminal**
The following list describes the commands to read and write reader's parameters.

In the Microsoft® Hyper Terminal mode, the keyed code is not displayed at the screen.

Command format :




The Entrance converter is identified 01, the one for the exit is identified 02.

*To send the instruction [040201] enables to select the Entrance reader in RS232 + Wiegand output.*
*To send the instruction [040202] enables to select the Exit reader in RS232 + Wiegand output.*

*To send the instruction [040301] enables to select the Entrance reader in RS232 + D&C 10 char. output*
*To send the instruction [040302] p enables to select the Exit reader in RS232 + D&C 10 char. output*

*To send the instruction [040401] enables to select the Entrance reader in RS232 + D&C 13 char. output*
*To send the instruction [040402] enables to select the Exit reader in RS232 + D&C 13 char. Output*

## 7. DOCUMENT VERSION

| Version | Date | Author | Changes |
|---|---|---|---|
| G | 22/08/14 | WL | First UK document version – Translated from French version in revision G |
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|---|---|---|---|
| **STATUS** | **DRAFT** | **CORRECTION** | **FINAL** |
| | | | |
| **DISTRIBUTION LEVEL** | **CONFIDENTIAL** | **LIMITED** | **GENERAL** |
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