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1) History :

Revision	Date	Author	Comment
1	05/03/2007	JLUC	creation
2	10/11/2007	JLUC	update

2) Purpose:

The purpose of this document is to describe the protocole between DAG SYSTEM EPC long range reader for industrial application and a computer.

3) Communication parameters:

115200 bauds, 8 bits, no parity, 1 stop

4) Structure of frame:

STX + code function + TAB (→) + message + CR (↵)

STX (↵) = 0x02

TAB (→) = 0x09

CR (↵) = 0x0D

All the data are in ASCII.

5) List of commands:

Description	Computer → Slave	Computer ← Slave
Serial number transmissison		↵SN→SERIAL_NUMBER↵
Data transmission		↵00→CPT→DATA_READ→TYPE_CHIP↵
Get output level	pw↵	↵PW→PWR↵
Set output level	PW PWR↵	↵PW→PWR↵
Get number of time slot	ts↵	↵TS→NB_TS↵
Set number of time slot	TS NB_TS↵	↵TS→NB_TS↵
Get version	v? ↵	↵V=→VERSION↵
Get transmission mode	tx↵	↵TX→TX_MODE↵
Set transmission mode	TX TX_MODE ↵	↵TX→TX_MODE↵
Switch output level	AP AP_STATUS↵	↵AP→AP_STATUS↵
Tune Antenna	RA↵	↵#SYSTEM_STATUS↵
Fine tune	DG FINE_TUNE ↵	↵DG→FINE_TUNE↵
Disable all RFID operation	SO↵	↵SO↵
Read data and serial number one time and the chip is halted	UR↵	↵UR↵
Endless read data and serial number	AS↵	↵AS↵
Save the next parameter	SV↵	↵SV→00001↵
Long version transmit by the reader at power on reset		↵#0→LONG_VERSION↵
No interface box detected		↵#4↵
Power on reset from the reader		↵#6↵
Get RFID mode at startup	tl↵	TL→RFID_MODE↵
Set RFID mode at startup	TL RFID_MODE↵	TL→RFID_MODE↵

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Get type of chip used	tc↕	TC → TYPE_CHIP_IN_USE↕
Set RFID mode at startup	TC TYPE_CHIP_IN_USE ↕	TC → TYPE_CHIP_IN_USE ↕
System bootstrap		↕ #1 ↕
Switch interface box power	AA AA_STATUS↕	↕ AP → AA_STATUS↕

6) Fields of variables:

Name	Description	Length	Field
SERIAL_NUMBER	Serial number of the chip	10	HEXA
CPT	Counter	2	HEXA 00 → FF
DATA_READ	Data read from the chip including UD CRC16	28	HEXA
TYPE_CHIP	Type of chip read	1	A → V6a B → V6b
PWR	Output level	5	0 → 1000
NB_TS	Number of time slot	5	0 → 1 slot 1 → 4 slot 2 → 8 slot 3 → 16 slot 4 → 32 slot
VERSION	Firmware version	6	Text
TX_MODE	Mode to transmit detections	5	0 → no transmission 1 → transmission of data (block 0 to block 13) 4 → transmission of serial number (block 14 to block 18) 5 → transmission of data (block 0 to block 13) and serial number (block 14 to block 18) 128 → transmission of data (block 0 to block 13) and type of chip

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			133 → transmission of data (block 0 to block 13) and serial number (block 14 to block 18) and type of chip
AP_STATUS	State of the output driver	5	0 → OFF no output level 1 → ON output level = PWR
SYSTEM_STATUS	Current state of the reader	1	1 → looking for antenna
LONG_VERSION	Version transmit at power on reset	Variable	Text
FINE_TUNE	Fine tune value to set after antenna tuning	5	0 → 15
RFID_MODE	RFID mode used after startup sequence	5	0 → AS 4 → UR
TYPE_CHIP_IN_USE	Type of chip in use	5	0 → V6a 1 → V6b
AA_STATUS	State of the interface box power	5	0 → OFF interface box is switched off 1 → ON interface box is switched on

7) Operating rules:

7-1) Using RFID mode AS, UR:

This command allows you to select the operating RFID mode.
Before each command, you have to stop RFID operation with SO command.

7-2) Saving parameters:

To save a parameter you have to send before each parameter SV ↵
Only NB_TS, RFID_MODE, TYPE_CHIP_IN_USE and PW parameters can be saved.

7-23) Type of chip:

The reader can only work with one kind of chip at same time.
Before changing the kind of chip, you have to stop RFID opération with SO.