

DAG System

ICODE – INSIDE Long Range Reader Industrial version

Datasheet

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History :

Revision	Date	Modifications
1	03/02/2003	Creation
2	20/04/2004	Update
3	01/06/2004	Update
4	08/29/2005	Add missing order BK, BZ, SH, AS 15693-3 order
5	28/03/2006	Separate 15693-3 order

Communication parameters:

115200 bauds, 8 bits, no parity, 1 stop

Structure of frame:

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

STX (↵) = 0x02

TAB (→) = 0x09

CR (↵) = 0x0D

All the data are in ASCII.



LISTE OF COMMANDS:

Description	Computer → Slave	Computer ← Slave	ICODE	INSIDE
Detection		↵00→CPT→DATA↵	*	*
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 number first block to read	bk↵	↵BK→FIRST_BLOCK ↵	*	*
Set first block to read	BK FIRST_BLOCK↵	↵BK→FIRST_BLOCK ↵	*	*
Get number of block to read	nb↵	↵NB→NB_BLOCK ↵	*	*
Set number of block to read	NB NB_BLOCK↵	↵NB→NB_BLOCK ↵	*	*
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↵	*	*
Unselected Read	UR↵	↵UR↵	*	
Anticoll select	AS↵	↵AS↵	*	
Anticoll select detection		↵SN→ SERIAL_NUMBER ↵	*	
Anticoll select detection when TIME is different as 000000		↵SN→ SERIAL_NUMBER ↵ ↵SN→ SERIAL_NUMBER ↵ ↵SH→ SERIAL_NUMBER ↵	*	
Anticoll select + HALT	AH↵	↵SN→ SERIAL_NUMBER ↵		
Write first time	WD BLOCK DATA_WRITE↵	↵SN→WRITE_SERIAL_NUMBER↵	*	*
Write when DAG is already in the field	W2 BLOCK DATA_WRITE↵	↵SN→WRITE_SERIAL_NUMBER↵	*	*



Disable all RFID operation	SO ↵	↵SO ↵	*	*
Save the next parameter	SV ↵	↵SV → 00001 ↵	*	*
Test buzzer	BZ19	No answer	*	*
Set time to write only in AS mode	TX TIME ↵	No answer	*	*



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FIELDS OF VARIABLES:

Name	Description	Length	Field
CPT	Counter of detection	2	00 → FF (HEXA)
DATA	Data read in the chip	8*NB_BLOCK for ICODE 16*NB_BLOCK for INSIDE	HEXA
PWR	Output level	5	0 → 1000
NB_TS	Number of time slot (only for ICODE)	5	0 → 1 time slot 1 → 4 time slot 2 → 8 time slot 3 → 16 time slot 4 → 32 time slot
NB_BLOCK	(Number-1) of block to be read	5	0 → 15 for ICODE 0 → 30 for INSIDE Be careful FIRST_BLOCK + NB_BLOCK should not be greater than memory space
FIRST_BLOCK	First block to be read	5	0 → 15 for ICODE 0 → 30 for INSIDE Be careful FIRST_BLOCK + NB_BLOCK should not be greater than memory space
VERSION	Firmware version	6	VERSION[0..3] → firmware version VERSION[4] → chip manufacturer 9 → PHILIPS 8 → INSIDE VERSION[5] → Type of chip 0 → ICODE SL1 for PHILIPS 1 → PICOTAG 2K
TX_MODE	Mode to transmit detections	5	0 → no transmission of detection 1 → transmission of detection
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 3 → antenna OK 4 → error antenna tuning 6 → Power on reset X → System LOCK
BLOCK	Block to write	2	00 → 09
DATA_WRITE	Data to write	8 for ICODE 16 for INSIDE	HEXA
SERIAL_NUMBER	Serial number of the chip	16	HEXA
WRITE_SERIAL_NUMBER	Serial number of the chip, response to write operation	16	HEXA 0000000000000001 → No DAG found 0000000000000002 → Write error 0000000000000003 → Read error Other → write OK
TIME	Time to write in block set by BK, only in AS mode	6	The format is HHMMSS, where HH is current hour, MM is current minute, SS is current second



Operating rules:

1) Standard writing operation:

- When power on the reader, it is able to read DAG.
- To transmit data on serial, send **TX1**.
- To write data in DAG:
 - 1) Stop operation: **SO**
 - 2) Put the DAG in the field
 - 3) Start writes: **WD XX XXXXXXXX**
 - 4) To read data go to step 7, else keep the DAG in the field
 - 5) To write another data: **W2 XX XXXXXXXX**
 - 6) To write another data go to step 5
 - 7) To read data put the DAG outside the field
 - 8) Start reading: **UR**
 - 9) When you put the DAG in the field, you read the data for the number of block selected

- You can write one block at each time
- Size block
 - 4 bytes for ICODE
 - 8 bytes for INSIDE

2) Using AS command:

This command allows you to select a DAG and read serial number regardless FIRST_BLOCK and NB_BLOCK parameter.

With ICODE DAG:

If TIME is different as 000000 an automatic write operation is made the reader send 3 messages

- ↳SN→ SERIAL_NUMBER ↵ for selection
- ↳SN→ SERIAL_NUMBER ↵ for write operation
- ↳SH→ SERIAL_NUMBER ↵ for halt operation

After, the DAG is in HALT mode, you should get out the antenna field to make another operation with the same DAG.

3) Using AH command:

With ICODE DAG:

This command allows you to select a DAG and read serial number regardless FIRST_BLOCK and NB_BLOCK parameter after the DAG enter in HALT mode no more operation are available.

4) Saving parameters:

To save a parameter you have to send before each parameter SV1 ↵
Only NB_TS, FIRST_BLOCK, NB_BLOCK and PW parameter can be saved

