

2.4 Process data

The process data for one channel is organized:

2.4.1 Process input data

CH	Byte	7	6	5	4	3	2	1	0
1	0	DONE	BUSY	ERROR	XCVR_CON	XCVR_ON	TP	TFR	reserved
1	1	ErrCode_7	ErrCode_6	ErrCode_5	ErrCode_4	ErrCode_3	ErrCode_2	ErrCode_1	ErrCode_0
1	2	ErrCode1_7	ErrCode1_6	ErrCode1_5	ErrCode1_4	ErrCode1_3	ErrCode1_2	ErrCode1_1	ErrCode1_0
1	3	reserved	reserved	reserved	reserved	reserved	reserved	reserved	reserved
1	4								
1	5								
1	6				8 Byte Net READ_DATA				
1	7								
1	8								
1	9								
1	10								
1	11								
2	12	DONE	BUSY	ERROR	XCVR_CON	XCVR_ON	TP	TFR	reserved
2	13	ErrCode_7	ErrCode_6	ErrCode_5	ErrCode_4	ErrCode_3	ErrCode_2	ErrCode_1	ErrCode_0
2	14	ErrCode1_7	ErrCode1_6	ErrCode1_5	ErrCode1_4	ErrCode1_3	ErrCode1_2	ErrCode1_1	ErrCode1_0
2	15	reserved	reserved	reserved	reserved	reserved	reserved	reserved	reserved
2	16								
2	17								
2	18								
2	19				8 Byte Net READ_DATA				
2	20								
2	21								
2	22								
2	23								

DONE **BOOL** – DONE indicates that the system is not processing any commands and is ready to receive the next command. The system will ignore all incoming commands if DONE is false, except the RESET command. DONE can only change to TRUE if all command bits (READ, WRITE ...) are false. Please see diagram below for details of handshake sequence.

BUSY **BOOL** indicates that the system is currently executing a command. If the command is done but the command bit is not reset, BUSY and DONE are false. BUSY has not the same meaning of NOT DONE.

ERROR **BOOL** – The ERROR flag indicates that an error occurred while executing a command. I.e. If this flag is high after a WRITE command, the data in the transmit buffers was not written to the tag. If this flag is high after a READ command, the data was not read from the tag and the receive buffers are not updated with new values. If there is no ERROR flag after a WRITE or READ command, the data was successfully written to or read from the tag and the data in the receive buffers is valid. See ErrCode and ErrCode1 for description of the error.

XCVR_CON **BOOL** – Transceiver connected. The transceiver is connected correctly to the

	RFID module.
XCVR_ON	BOOL – Transceiver On. The transceiver is transmitting the 13.56 MHz signal to a tag.
TP	BOOL – Tag Present. A tag is in the transceiver air interface and it is recognized by the transceiver.
TFR	BOOL – Tag Fully Read. All the memory locations on the tag have been successfully read by the BLident system. The time between TAG_PRESENT and TAG_FULLY_READ does not indicate the time required to execute a READ or WRITE command. A READ or WRITE command that only reads or writes a few bytes will execute much faster than the time required for a TAG_FULLY_READ for a tag with 2000 bytes of memory.
ErrCode	Refer to PNO Profile for Identification Systems, Proxy Ident Function Block, Error and Warning Concept, Table 6, Column 1
ErrCode1	Refer to PNO Profile for Identification Systems, Proxy Ident Function Block, Error and Warning Concept, Table 6, Column 2

ErrCode	ErrCode1 (decimal)	Meaning
1	1	Tag memory error (e.g. CRC error)
1	2	Presence error (indicated by Ident Unit), tag has left the transmission window
1	3	Address or command does not fit the tag characteristics (memory size) (indicated by Ident Unit)
1	4	Tag is defective. (replace tag or battery)
1	5	Tag memory overflow.
1	6	Unformatted tag.
1	7	Inconsistent tag data structure. Reformat tag.
1	8	tag within the transmission window does not have the expected UID (indicated by Ident Unit)
1	9	Command not supported by the Tag
1	10	Access violation (e.g. block locked) refer to ISO18000-x
1	11..127	Reserved for future profile use
1	128..255	Vendor specific
2	1	Communication timeout at air interface (indicated by Ident Unit)
2	2	More tags/barcodes within transmission window than allowed. (indicated by Ident Unit)
2	3..127	Reserved for future profile use
2	128	Vendor specific: CRC error in air interface
2	129..255	Vendor specific
3	1	Uncorrect file name (indicated by Ident Unit)
3	2	File does not exist (indicated by Ident Unit)
3	3	The Tag type is incorrect or unsuitable for the selected mode of operation. No file system available on tag. (indicated by Ident Unit)
3	4	Create command; no more directory entries available. (indicated by Ident Unit)

2.4.2 Process output data

CH		7	6	5	4	3	2	1	0
1	0	XCVR	NEXT	TAG_ID	READ	WRITE	TAG_INFO	XCVR_INFO	RESET
1	1	reserved	reserved	reserved	reserved	reserved	ByteCount2	ByteCount1	ByteCount0
1	2	AddrHi_7	AddrHi_6	AddrHi_5	AddrHi_4	AddrHi_3	AddrHi_2	AddrHi_1	AddrHi_0
1	3	AddrLo_7	AddrLo_6	AddrLo_5	AddrLo_4	AddrLo_3	AddrLo_2	AddrLo_1	AddrLo_0
1	4								
1	5								
1	6								
1	7				8 Byte Net WRITE_DATA				
1	8								
1	9								
1	10								
1	11								
2	12	XCVR	NEXT	TAG_ID	READ	WRITE	TAG_INFO	XCVR_INFO	RESET
2	13	reserved	reserved	reserved	reserved	reserved	ByteCount2	ByteCount1	ByteCount0
2	14	AddrHi_7	AddrHi_6	AddrHi_5	AddrHi_4	AddrHi_3	AddrHi_2	AddrHi_1	AddrHi_0
2	15	AddrLo_7	AddrLo_6	AddrLo_5	AddrLo_4	AddrLo_3	AddrLo_2	AddrLo_1	AddrLo_0
2	16								
2	17								
2	18								
2	19				8 Byte Net WRITE_DATA				
2	20								
2	21								
2	22								
2	23								

XCVR

BOOL – TRANSCEIVER =

- 1 – The transceiver is on (13.56 MHz signal is being transmitted).
- 0 – The transceiver is turned off (no signal is being transmitted).

If the transceiver input is set to 0 while the BLident system is in the BUSY state, the transceiver will not be turned off until the BLident system is finished executing the command and returns to the DONE state. (See example below)

If more than one flag of XCVR, TAG_ID, READ, WRITE, TRANSCEIVER_INFO and TAG_INFO is set at one time the slice should answer with an error.

NEXT

BOOL – If the NEXT mode is turned on, the BLident system will only execute one command per tag. If a second command is initiated on the same tag, the BLident system will remain in the BUSY state. The BLident system will either need to be reset or another tag must be introduced for the command to execute.

TAG_ID

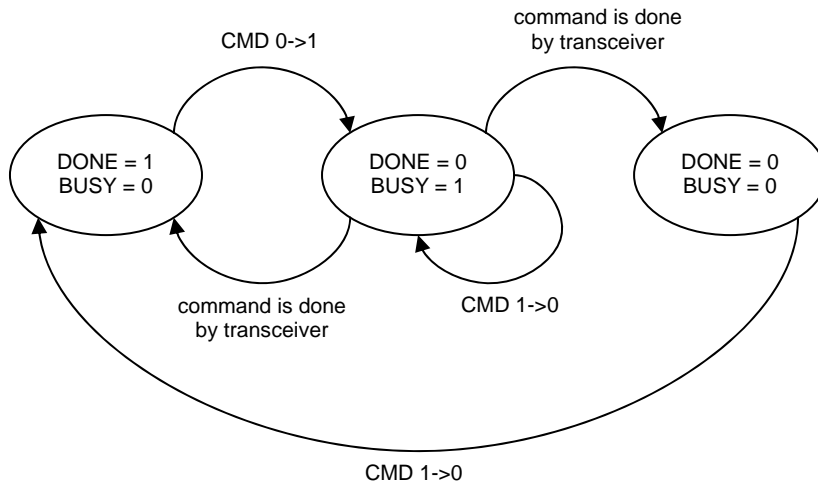
BOOL – Initiates the TAG_ID command on the rising edge. The command is executed when a tag is present in the air interface. The command returns 8 bytes of information in the READ_DATA. These 8 bytes are the UID, a unique tag identification number which will not be duplicated on any other RFID tag.

READ

BOOL – Initiates the READ command on the rising edge. The command is executed when a tag is present in the air interface. The command reads

	ByteCount0..2 number of bytes starting at AddrHi,AddrLo from the tag and returns the data in the READ_DATA.
WRITE	BOOL – Initiates the WRITE command on the rising edge. The command is executed when a tag is present in the air interface. The command writes ByteCount0..2 number of bytes from the WRITE_DATA to the tag memory starting at AddrHi,AddrLo.
TAG_INFO	<p>BOOL – Initiates the TAG_INFO command on the rising edge. The command is executed when a tag is present in the air interface. The command returns 8 bytes of information in the READ_DATA.</p> <ul style="list-style-type: none"> • BYTE 0: Memory Size – number of blocks (Byte 10 of PIB MemoryStatus command) • BYTE 1: Memory size – bytes per block (Byte 11 of PIB MemoryStatus command) • BYTE 2: DSFID (Byte 8 of PIB MemoryStatus command) • BYTE 3: AFI (Byte 9 of PIB MemoryStatus command) • BYTE 4: ICID (Byte 12 of PIB MemoryStatus command) • BYTE 5: blank • BYTE 6: blank • BYTE 7: blank
TRANSCEIVER_INFO	<p>BOOL– Initiates the TRANSCEIVER_INFO command on the rising edge. The command is executed immediately. Depending on the attribute in 'StartAddress' the command returns 8 bytes of information in the READ_DATA.</p> <p>StartAddress = 0xF0: READ_DATA contains the 1st 8 bytes of the ORDER_ID of the transceiver. I.E. 'TNER-Q80'</p> <p>StartAddress = 0xF1: READ_DATA contains the 2nd 8 bytes of the ORDER_ID of the transceiver. I.E. '-H1147\00'</p> <p>StartAddress = 0xF2: READ_DATA contains the 3rd 8 bytes of the ORDER_ID of the transceiver.</p> <p>StartAddress = 0xF3: READ_DATA contains the 4th 8 bytes of the ORDER_ID of the transceiver.</p> <p>StartAddress = 0xF4: READ_DATA contains the hardware and firmware revision of the transceiver: BYTE 0: digit x of the HW revision x.y (Byte 48 of PIB DevStatus) BYTE 1: digit y of the HW revision x.y (Byte 49 of PIB DevStatus) BYTE 2: character 'V' (Byte 50 of PIB MemoryStatus) BYTE 3: digit x of the FW revision Vx.y.Z (Byte 51 of PIB DevStatus) BYTE 4: digit y of the FW revision Vx.y.Z (Byte 52 of PIB DevStatus) BYTE 5: digit z of the FW revision Vx.y.Z (Byte 53 of PIB DevStatus) BYTE 6: blank BYTE 7: blank</p>
RESET	BOOL – Resets the BLident system on the rising edge. If BUSY, the current command will be aborted and the BLident system will return to the DONE mode. Any ERROR flags will be reset (Note: the STATUS output may still indicate an error message, however if the ERROR flag is not set, the error message is not relevant.)
ByteCount0..2	BOOL – (0-7) The number of consecutive tag memory areas (minus 1, i.e. 0 = 1 byte written to/read from, ... 7 = 8 bytes written to/read from) that are going to be written to (WRITE command) or read from (READ command). This will consequently determine how many WRITE_DATA and

	READ_DATA bytes will be used by the WRITE and READ commands respectively.
AddrHi, AddrLo	ARRAY of 2 BYTES – (0- maximum value depends on tag memory) The index that points to the first tag memory area that will be written to or read from by the WRITE and READ commands respectively.
WRITE_DATA	ARRAY of 8 BYTES – Transmit buffer



CMD 0->1 means a positive edge on the command bit (i.E. READ)
 READ 1->0 means a negative edge on command bit (i.E. READ)

