REVISIONS

REV	ECO#	DESCRIPTION	E. DATE	I. DATE	DFTR	CHKR	ENGR	DOC
D	-		-				-	-

PROTOCOL SPECIFICATION
SeGo

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Drafter		
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Quality Assurance		

TITLE

PROTOCOL SPEC, SeGo

SIZE	DRAWING NO.	SHEET
A		1 of 35

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1 General

1.1 Format

Consider italicized text to be descriptive (informational only).

2 Requirements

2.1 SeGo Protocol Parameters

Table 1 . SeGo Forward Link Specifications

Parameter	Specification	Note
ON-OFF Ratio For ON-OFF Key (OOK) Data	24 dB Dynamic Range @ 25 dB DOM – 40 dB DOM	
OOK Duty Cycle Expected	50%	
OOK Duty Cycle Tolerance	±10%	
OOK Rise Time	850 ns max.	
OOK Fall Time	850 ns max	
Carrier Frequencies	915 MHz Band	
Data Rate	80 +/- .5 kbps	
Maximum Field Off-Time Without Loss Of State	40 μs	
Maximum Undetected Field Off-Time	0.5 μs	
Time Required To Execute A Write	8.55 ms Maximum	
Data Format	Manchester	
Sensitivity (Read/Write)	See Section 2.1.1	
Rate of RF Change	1.5 dB/ms Maximum .02 dB/ms Minimum	1

Table 2. SeGo Return Link Specifications

Parameter	Specification	Note
Nominal Return Data Rate	+6% of Forward Data Rate	
Return Data Rate Tolerance	± 9% of the Nominal Return Data Rate	
OOK Duty Cycle	Worst case ± 5%	
Data Format	FM0	
Conversion Factor	See Section 2.1.4	

Table 3. SeGo Timing Specification Between Transceivers

Parameter	Specification	Note
Time Required For Tag To Store Data	8.55 ms Maximum	
Field on time between packets @ 80kbps	214.3 us Minimum	

Table 4. Preamble Detect and Quiet Time Specification

Parameter	Conditions	Minimum	Typical	Maximum
Preamble Detect Time	After Boot Up	87.5µs		
Quiet Time	Normal SeGo commands	390 µs		490 µs
Power up boot time	Time from CW on to tag ready to receive command			940 µs

Table 5. Notes

No.	Note
1	Does not include the change in RF level that will occur during reader modulation or backscatter modulation.

2.1.1 Sensitivity and Conversion Factor

2.1.2 Read Sensitivity

The wake-up/read sensitivity is -11 dBm +/- 2.5dB nominal for tag on upper center windshield location

This sensitivity level applies to the entire 915 MHz frequency band (902 MHz – 928 MHz)

2.1.3 Write Sensitivity

The wake-up/write sensitivity must take no more than 1.5 dB more power than the read.

2.1.4 Conversion Gain

The tag transmits data to the reader by modulating the signal it reflects and subsequently re-radiates to the reader through the tag antenna. The ratio between the matched power incident on the tag and the power of the modulation signal reflected is the tag conversion gain. This conversion gainshould be as stated in table 6.

Table 6. Summary of RF Performance Characteristics

Specification	Details	Test Conditions	Units	min	typ	max
Beam Wakeup Sensitivity limits over temperature SeGo		Nominal, Tag in upper center winshield location	dBm	-13.5		-8.5
Manchester Duty Cycle Acceptance Range	SeGo		%	45		55
Beam Dynamic Range	SeGo	Minimum modulation depth 25 dB 50% duty cycle input signal .625 μsec maximum 10%-90% rise time	dB above wakeup	24		
Conversion Factor	SeGo	@ Wakeup, Nominal Tag in top center windshield location @ Wakeup +15dBm	dB	-8.5 -20.5		

2.2 Commands and Responses Defined

2.2.1 Command General Description

The details of the communication protocol itself, such as start delimiters, preambles, data encoding techniques, and so forth are presented in Figure 1.

The SeGo commands begin with a preamble and a start delimiter that, when taken together, enable the tag to perform clock and data recovery on the incoming signal. Data to and from the tag is checked for errors using CRC; therefore, CRC fields are present in all reader interrogations and in all tag responses. The reader can execute a number of functions on tags in its field. For example, the reader can send a command sequence, which allows it to identify multiple tags simultaneously in its RF field. Alternately, it can select a subset of the tags in the field based on tag memory contents. It can also read data stored on a tag in its field, as well as write data to such a tag. In addition, it can simultaneously write data to an arbitrary subset of the tags in the field.

2.2.2 Command and Response Protocol

A given SeGo command must include the following elements: a reader to tag preamble detect field, a reader to tag preamble, a reader to tag start delimiter, a command field, and a CRC-16 field. It may also include subsets of the following, depending on the command: a tag identification field, a byte mask, an address, byte data, 8-byte word data, etc. Tags may respond to commands, where all responses include a quiet time, a return preamble, either return data or an acknowledgement code, and a CRC-16. See Figure 1.

2.2.3 Transmission Errors

There are two types of transmission errors: modulation coding errors (detectable per bit) and CRC errors (detectable per command). Both errors cause all commands to be aborted. The tag does not respond. For all CRC errors, the tag returns to the ready state; for all coding errors, the tag returns to the ready state only if a valid start delimiter had been detected. Otherwise, it maintains its current state. Further, if the tag receives a valid start delimiter, it returns to the READY state, so that it ignores a subsequent write multiple command.

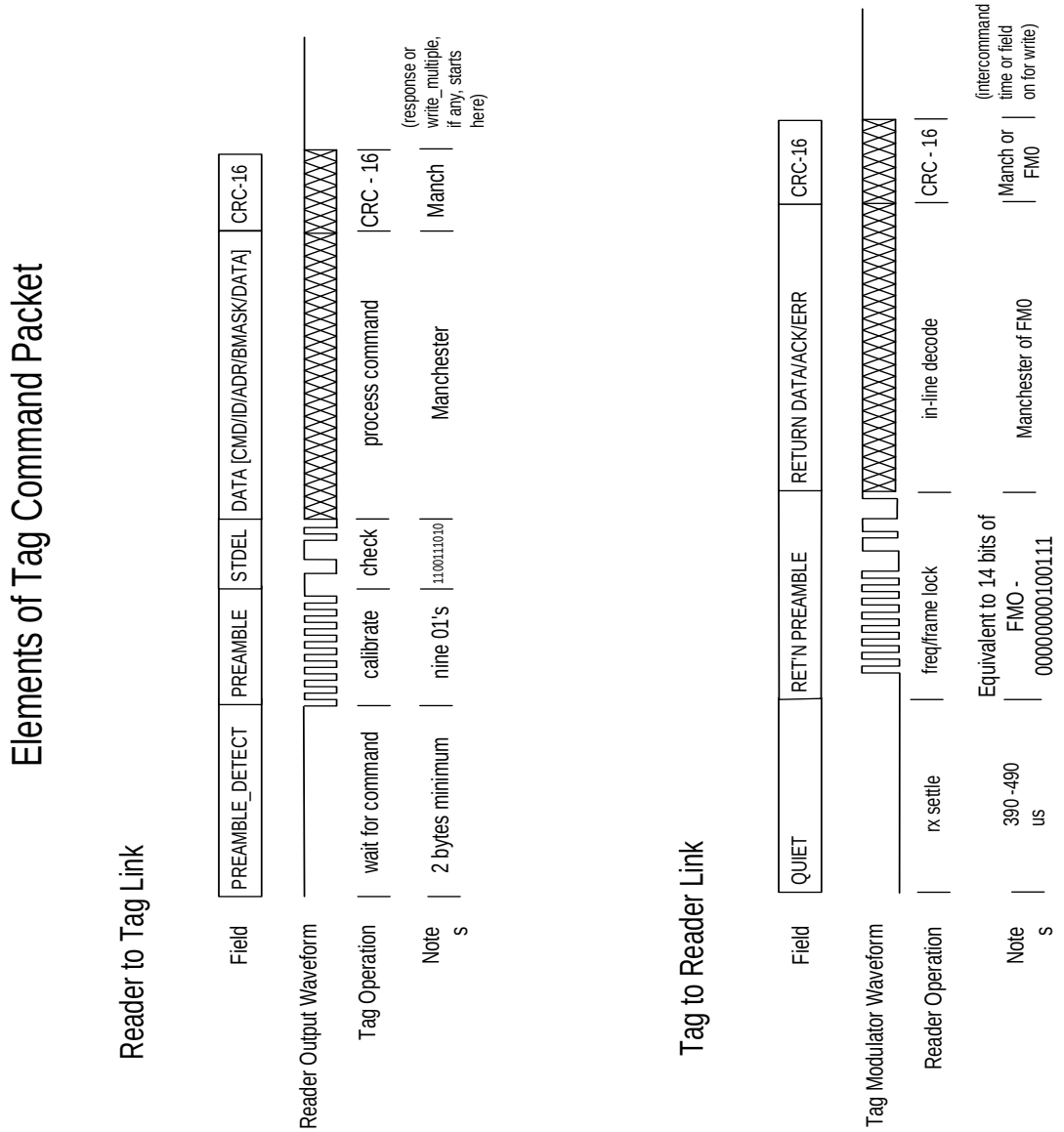


Figure 1. Elements of Tag Command Packet

2.2.4 Bit and Byte Ordering

For SeGo operations, in all byte fields, the most significant bit (MSB) is transmitted first, proceeding to the least significant bit (LSB).

In all word (8 byte) data fields, the most significant byte is transmitted first. The most significant byte is the byte at the specified address. The least significant byte is the byte at the specified address plus seven. That is, bytes are transmitted in incrementing address order.

The byte significance is relevant to data transmission and the GROUP_SELECT and GROUP_UNSELECT greater than and less than comparisons. The MSB of the byte mask corresponds to the most significant data byte, the byte at the specified address.

There is no requirement that word (8 byte) addresses must be on word boundaries during read operations, but it is required when performing a Write_Page.

2.2.5 Bit Coding Definitions

2.2.5.1 Forward Link Bit Definition

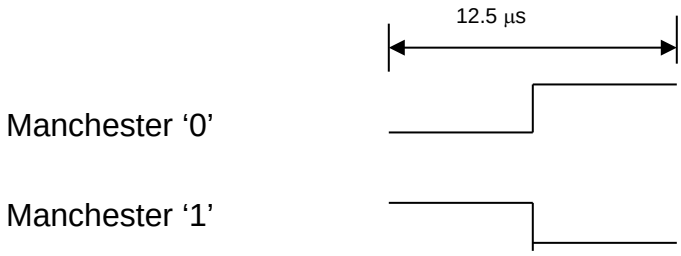


Figure 2. Forward Link Bit Definition

2.2.5.2 Return Link Bit Definition (seen on Mod_Out)

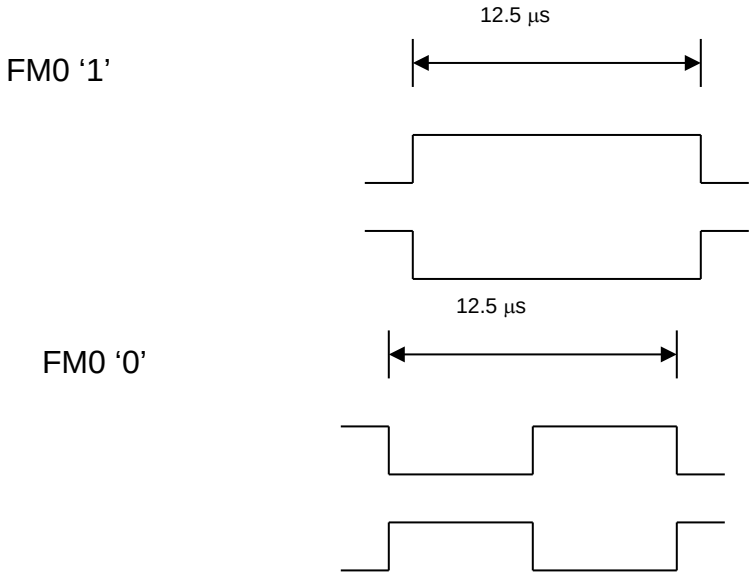


Figure 3 . Return Link Bit Definition

2.2.6 Command Types

Tag commands can be functionally divided into four groups.

Selection commands define a subset of tags in the field to be identified or written to.
INITIALIZE
GROUP_SELECT_EQ
GROUP_SELECT_NE
GROUP_SELECT_GT
GROUP_SELECT_LT
GROUP_UNSELECT_EQ
GROUP_UNSELECT_NE
GROUP_UNSELECT_GT
GROUP_UNSELECT_LT

Multiple tag commands
MULTIPLE_UNSELECT

Identification commands run the multiple tag identification protocol.
FAIL
SUCCESS
RESEND
DATA_READ

Data Transfer commands read, write, and verify EEPROM data.
READ
READ_VERIFY
WRITE_PAGE
READ_VERIFY_PAGE
STREAMLINED_GROUP_SELECT_EQUAL_PAGE_READ
STREAMLINED_GROUP_SELECT_EQUAL_PAGE_WRITE

2.2.7 Commands Detailed Description

2.2.7.1 Group Select xx

GROUP_SELECT_xx is used to select a class of tags in the field to participate in the identification process. It moves a subset of tags from READY to ID. The counters are set to 0, and the tags transmit. Those already in the ID state reset their counters to 0 and transmit.

If the address is invalid, no response is sent, and the state remains the same.

GROUP_SELECT_EQ:
GROUP_SELECT_NE:
GROUP_SELECT_GT:
GROUP_SELECT_LT:

2.2.7.2 Group Unselect xx

GROUP_UNSELECT_xx is used to unselect a class of tags in the field from participating in the identification process. It moves a subset of tags from ID to READY. Those left in the ID state reset their counters to 0 and transmit.

The subset is determined by comparing the data at the specified memory address to the data received. The compare operation is based on the actual group select command. Bytes whose byte mask is 0 are ignored in the comparison.

- _EQ: Tag data EQUAL TO received data
- _NE: Tag data NOT EQUAL TO received data
- _GT: Tag data GREATER THAN received data
- _LT: Tag data LESS THAN received data

Note that if the byte mask is zero, GROUP_SELECT_EQ selects all tags and GROUP_UNSELECT_EQ unselects all tags.

If the address is invalid, no response is sent, and the state remains the same.

GROUP_UNSELECT_EQ:
GROUP_UNSELECT_NE:
GROUP_UNSELECT_GT:
GROUP_UNSELECT_LT:

2.2.7.3 MULTIPLE_UNSELECT

MULTIPLE_UNSELECT is used to unselect a class of tags in the field from participating in a write multiple process. It moves a subset of tagss from ID to READY. Those left in the ID state reset their counters to 0 and transmit.

The subset is determined by the tag comparing the data at the specified memory address to the data received in the multiple unselect command. If the tag data is equal to the received data and the previous write multiple was successful (not a weak write), the tag is unselected. If the address is invalid, no response is sent, and the state remains the same.

2.2.7.4 FAIL

The identification algorithm uses FAIL when more than one tag tries to identify itself at the same time. Some tags back off, and some tags re-transmit according to an algorithm described later.

2.2.7.5 SUCCESS

SUCCESS initiates identification of the next set of tags. It is used in two cases. When all tags receiving FAIL backed off and did not transmit, SUCCESS causes those same tags to transmit again. After a DATA_READ moves an identified tag to DATA_EXCHANGE, SUCCESS causes the next subset of selected but unidentified tags to transmit.

2.2.7.6 RESEND

The identification algorithm uses RESEND when only one tag transmitted, but the ID was received in error. The tag that transmitted resends its ID.

2.2.7.7 STREAMLINED_GROUP_SELECT_EQUAL_PAGE_READ (SGSEPR):

From any state, SGSEPR obtains both the ID and Page Data from a certain class (group) of tags in a single command/response transaction.

If the address is invalid, no response is sent and the state remains the same.

2.2.7.8 STREAMLINED_GROUP_SELECT_EQUAL_PAGE_WRITE (SGSEPW)

From any state, SGSEPW obtains both the ID and write page data to a certain class (group) of tags in a single command/response transaction.

The memory that is being targeted for the write must be on page boundaries, i.e. 00, 08, 10, 18, etc., and the specified address must be valid as defined by the Memory Access Map. If not, no response is sent.

2.2.7.9 INITIALIZE

From any state, INITIALIZE moves all tags in the field back to READY.

From any state, READ reads the specified address of the specified tag and moves the tag to the DATA_EXCHANGE state.

If the address is invalid, no response is sent, and the state remains the same.

2.2.7.10 DATA_READ

From ID or DATA_EXCHANGE, DATA_READ reads the specified address of the specified tag and moves it to the DATA_EXCHANGE state. It is typically used during the ID protocol.

If the address is invalid, no response is sent, and the state remains the same.

2.2.7.11 READ_VERIFY

From any state, if the most recent write was successful (not a weak write), READ_VERIFY reads the specified address of the specified tag and moves it to DATA_EXCHANGE.

If the address is invalid, no response is sent, and the state remains the same.

2.2.7.12 READ_VERIFY_PAGE

From any state, if the most recent write was successful (not a weak write), READ_VERIFY_PAGE reads the specified address of the specified tag and moves it to DATA_EXCHANGE.

If the address is invalid, no response is sent, and the state remains the same.

2.2.7.13 WRITE_PAGE

From any state, WRITE_PAGE writes the specified address of the specified tag with the specified data page and moves it to the DATA_EXCHANGE state. The memory that is being targeted for the write must be on page boundaries, i.e. 00, 08, 10, 18, etc., or the tag will not execute the command.

2.2.8 Responses Detailed Description

2.2.8.1 ACKNOWLEDGE

ACKNOWLEDGE indicates the successful reception of a WRITE, or a WRITE_PAGE command.

2.2.8.2 ERROR

ERROR indicates an error in the WRITE, WRITE_PAGE, or STREAMLINED_GROUP_SELECT_EQUAL-PAGE-WRITE command.

2.2.8.3 ACKNOWLEDGE_OK

ACKNOWLEDGE_OK is the data match and successful write response to a STREAMLINED_GROUP_SELECT_EQUAL_PAGE_WRITE.

2.2.8.4 ACKNOWLEDGE_NOK

ACKNOWLEDGE_NOK is the data match and unsuccessful write response to a STREAMLINED_GROUP_SELECT_EQUAL_PAGE_WRITE.

2.2.8.5 ERROR_OK

ERROR_OK is the data no match and successful write response to a STREAMLINED_GROUP_SELECT_EQUAL_PAGE_WRITE.

2.2.8.6 ERROR_NOK

ERROR_NOK is the data no match and unsuccessful write response to a STREAMLINED_GROUP_SELECT_EQUAL_PAGE_WRITE.

2.2.8.7 ID

ID is the unique ID of the tag located in address 00 – 07 that is returned in response to a STREAMLINED_GROUP_SELECT_EQUAL_PAGE_WRITE and STREAMLINED_GROUP_SELECT_EQUAL_PAGE_READ command.

2.2.8.8 WORD_DATA or PAGE_DATA

WORD_DATA is eight bytes returned in response to a GROUP_SELECT, GROUP_UNSELECT, FAIL, SUCCESS, RESEND, DATA_READ, or STREAMLINED_GROUP_SELECT_EQUAL_PAGE_READ command.

NOTE: WORD_DATA can be from address 00-07, i.e. the unique ID space in the tag.

2.2.8.9 BYTE_DATA

BYTE_DATA is one byte returned in response to the READ_VERIFY command.

2.2.9 Summary of Commands (Base Station to Tag)

Table 7. Base Station to Tag Commands

Command Code & Name	ID	Compare Address	Key Address	Byte Mask	Byte Data	Starting Address	Word, Page Byte or RN Data	CRC
(00) GROUP_SELECT_EQ		ADDRESS		MASK			WORD	CRC
(01) GROUP_SELECT_NE		ADDRESS		MASK			WORD	CRC
(01) GROUP_SELECT_NE		ADDRESS		MASK			WORD	CRC
(02) GROUP_SELECT_GT		ADDRESS		MASK			WORD	CRC
(03) GROUP_SELECT_LT		ADDRESS		MASK			WORD	CRC
(04) GROUP_UNSEL_EQ		ADDRESS		MASK			WORD	CRC
(05) GROUP_UNSEL_NE		ADDRESS		MASK			WORD	CRC
(06) GROUP_UNSEL_GT		ADDRESS		MASK			WORD	CRC
(07) GROUP_UNSEL_LT		ADDRESS		MASK			WORD	CRC
(0A) INITIALIZE								CRC
(13) MULTIPLE_UNSEL		ADDRESS			DATA			CRC
(08) FAIL								CRC
(09) SUCCESS								CRC
(15) RESEND								CRC
(0B) DATA_READ	ID					ADDRESS		CRC
(0C) READ	ID					ADDRESS		CRC
(92) READ_VERIFY_PAGE	ID					ADDRESS		CRC
(12) READ_VERIFY	ID					ADDRESS		CRC
(8D) WRITE_PAGE	ID					ADDRESS	PAGE	CRC
(93) SGSEPW		ADDRESS			DATA	ADDRESS	PAGE	CRC
(80) SGSEPR		ADDRESS			DATA	ADDRESS		CRC

2.2.10 Summary of Responses (Tag to Base Station)

Table 8. Tag to Base Station Response

Command	Response Code & Name	ID	Word, Page, Byte, or RN Data	CRC
GROUP_SELECT_EQ			WORD	CRC
GROUP_SELECT_EQ			WORD	CRC
GROUP_SELECT_NE			WORD	CRC
GROUP_SELECT_GT			WORD	CRC
GROUP_SELECT_LT			WORD	CRC
GROUP_UNSEL_EQ			WORD	CRC
GROUP_UNSEL_NE			WORD	CRC
GROUP_UNSEL_GT			WORD	CRC
GROUP_UNSEL_LT			WORD	CRC
INITIALIZE				
MULTIPLE_UNSEL			WORD	CRC
FAIL			WORD	CRC
SUCCESS			WORD	CRC
RESEND			WORD	CRC
DATA_READ			WORD	CRC
READ			WORD	CRC
READ_VERIFY_PAGE			WORD	CRC
READ_VERIFY			BYTE	CRC
WRITE_PAGE	(00) ACKNOWLEDGE			CRC
	(FF) ERROR			CRC
SGSEPW	(01) ACKNOWLEDGE_OK	ID		CRC
	(00) ACKNOWLEDGE_NOK	ID		CRC
	(FF) ERROR_OK	ID		CRC
	(FE) ERROR_NOK	ID		CRC

Command	Response Code & Name	ID	Word, Page, Byte, or RN Data	CRC
	(FF) ERROR			CRC
SGSEPR		ID	PAGE	CRC

2.2.11 Field Lengths

Table 9. Field Lengths

Field	Length
Command Field	1 byte
Response Code Field	1 byte
Compare Address Field	1 byte
Key Address Field	1 byte
Starting Address Field	1 byte
Byte Mask Field	1 byte
ID Field	8 bytes
Word Data Field	8 bytes
Page Data Field	8 bytes
Byte Data Field	1 byte

2.2.12 Command Codes

Table 10. Command Codes

Command	Value (Hex)
GROUP_SELECT_EQ	0x00
GROUP_SELECT_NE	0x01
GROUP_SELECT_GT	0x02
GROUP_SELECT_LT	0x03
GROUP_UNSELECT_EQ	0x04
GROUP_UNSELECT_NE	0x05
GROUP_UNSELECT_GT	0x06
GROUP_UNSELECT_LT	0x07
INITIALIZE	0x0A
MULTIPLE_UNSELECT	0x13
FAIL	0x08
SUCCESS	0x09
RESEND	0x15
DATA_READ	0x0B
READ	0x0C
READ_VERIFY_PAGE	0x92
READ_VERIFY	0x12
WRITE_PAGE	0x8D
STREAMLINED_GROUP_SELECT_EQUAL_PAGE_WRITE	0x93
STREAMLINED_GROUP_SELECT_EQUAL_PAGE_READ	0x80

2.2.13 Response Codes

Table 11. Response Codes

Response	Value (Hex)
ACKNOWLEDGE	0x00
ACKNOWLEDGE_OK	0x01
ACKNOWLEDGE_NOK	0x00
ERROR	0xFF
ERROR_OK	0xFF
ERROR_NOK	0xFE

2.2.14 Detailed Command and Response Definition

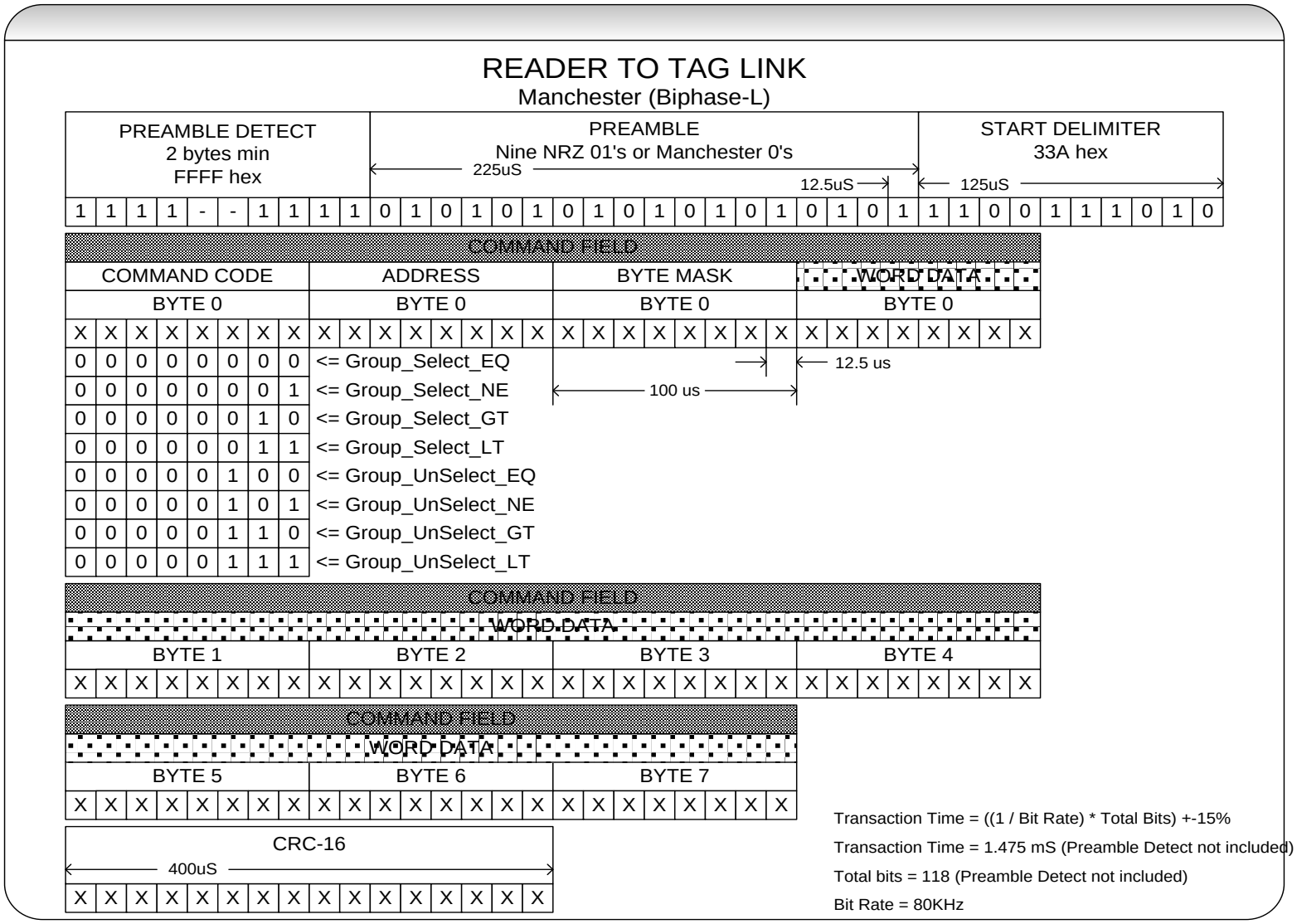


Figure 4. Detailed Command and Response Definition

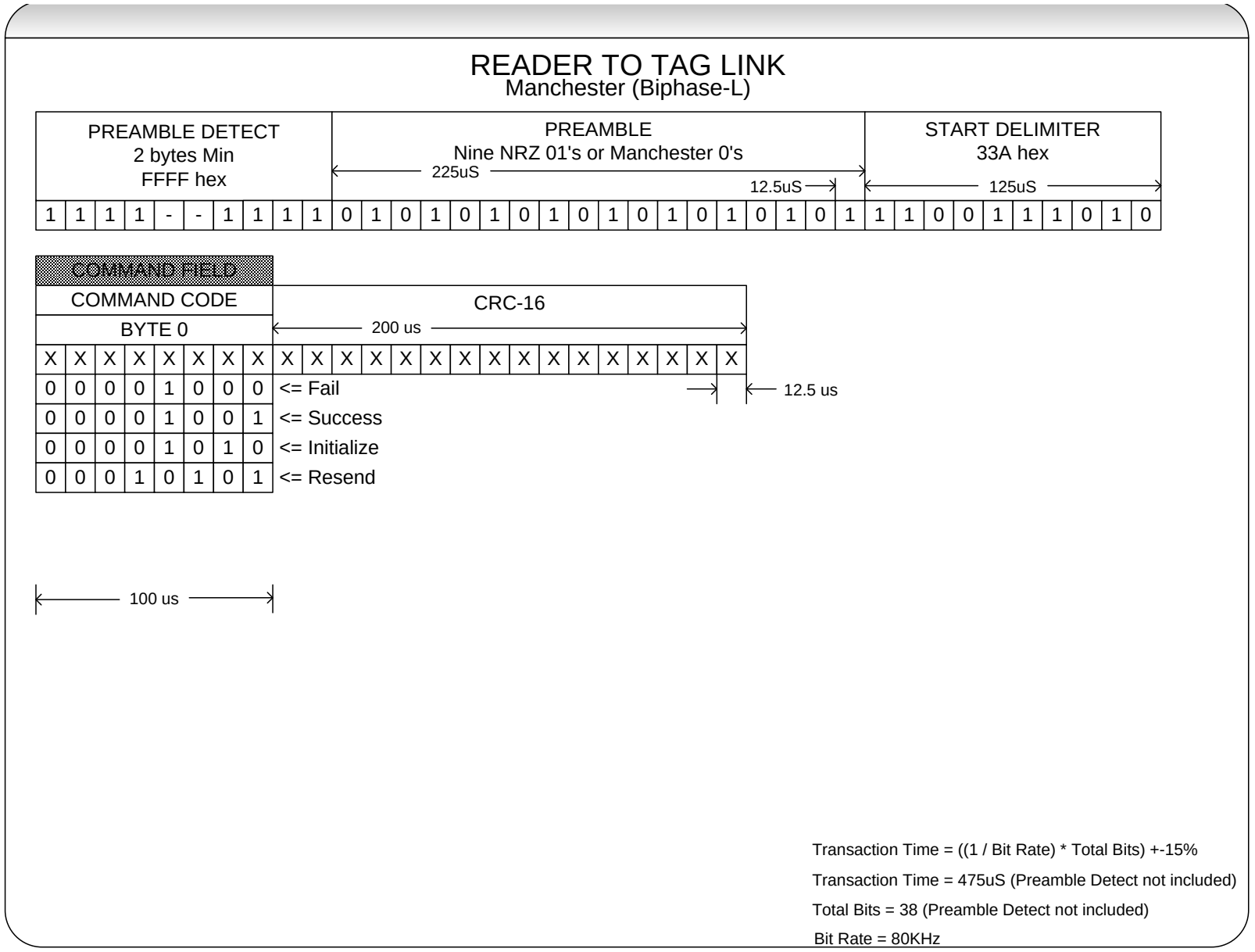
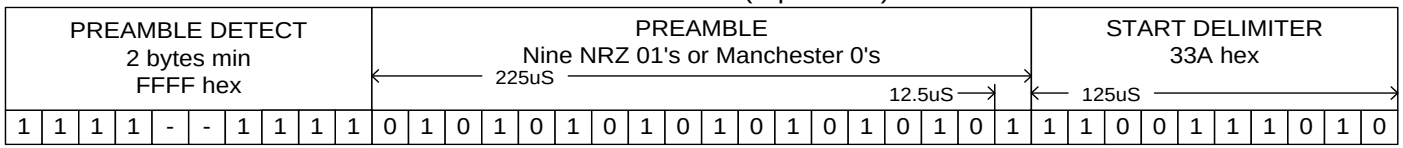
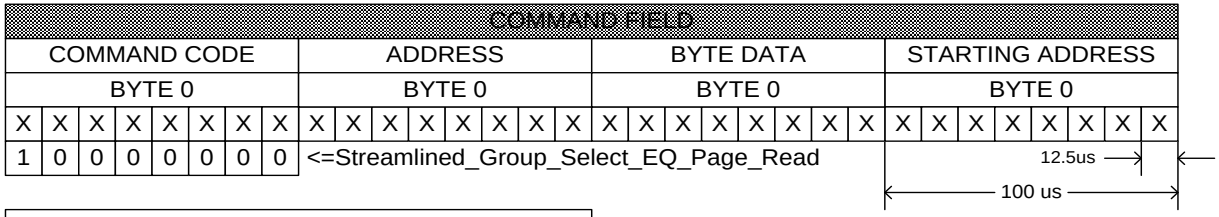


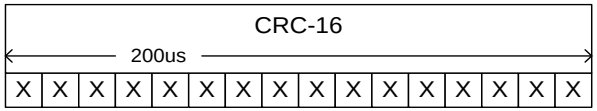
Figure 5. Detailed Command and Response Definition

READER TO TAG LINK

Manchester (Biphase-L)







Transaction Time = ((1 / Bit Rate) * Total Bits) +-15%

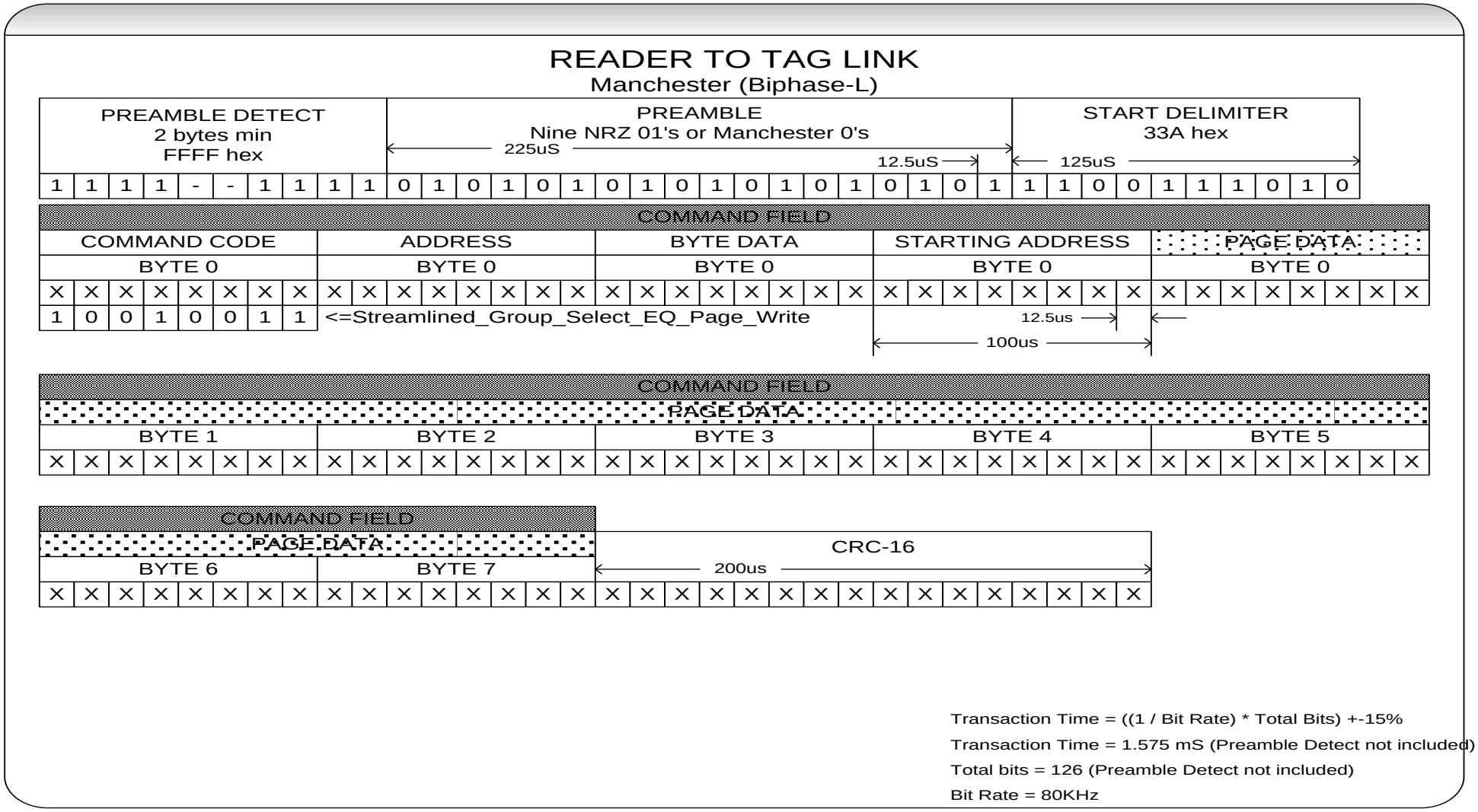
Transaction Time = 775 uS (Preamble Detect not included)

Total bits = 62 (Preamble Detect not included)

Bit Rate = 80KHz

Figure 6. Detailed Command and Response Definition

Figure 7. Detailed Command and Response Definition



Transaction Time = ((1 / Bit Rate) * Total Bits) +-15%

Transaction Time = 1.575 mS (Preamble Detect not included)

Total bits = 126 (Preamble Detect not included)

Bit Rate = 80KHz

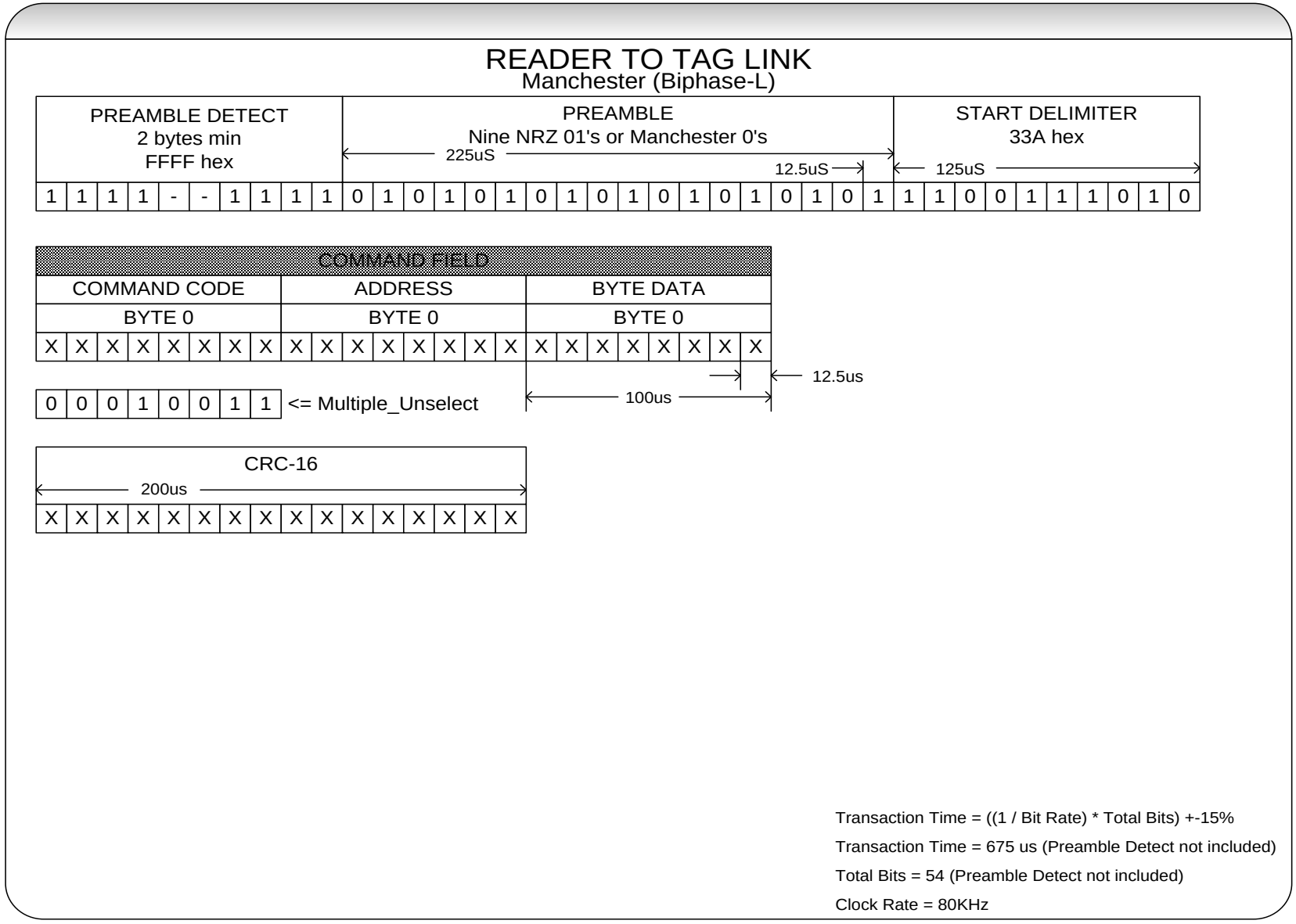


Figure 8. Detailed Command and Response Definition

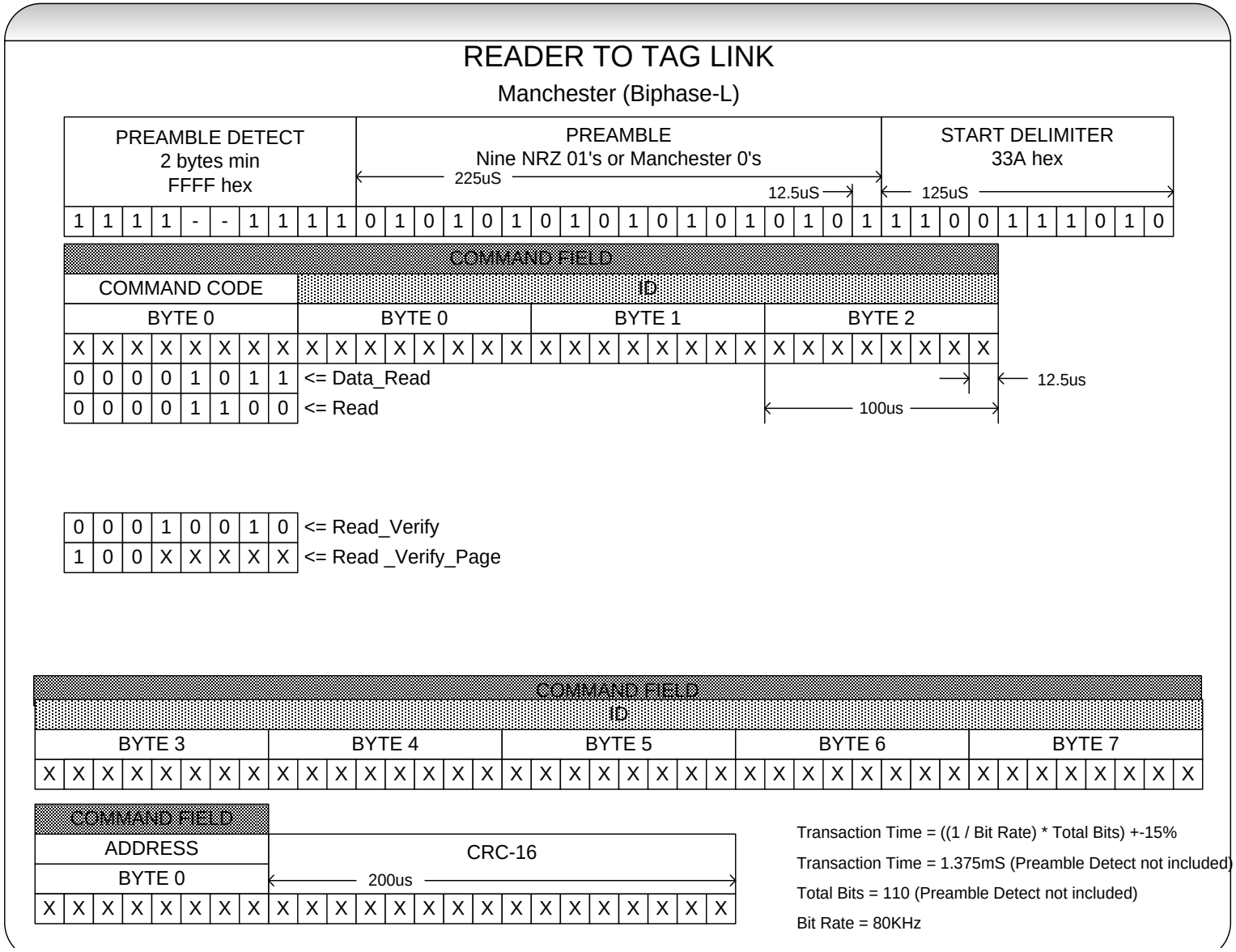


Figure 9. Detailed Command and Response Definition

Figure 10. Detailed Command and Response Definition

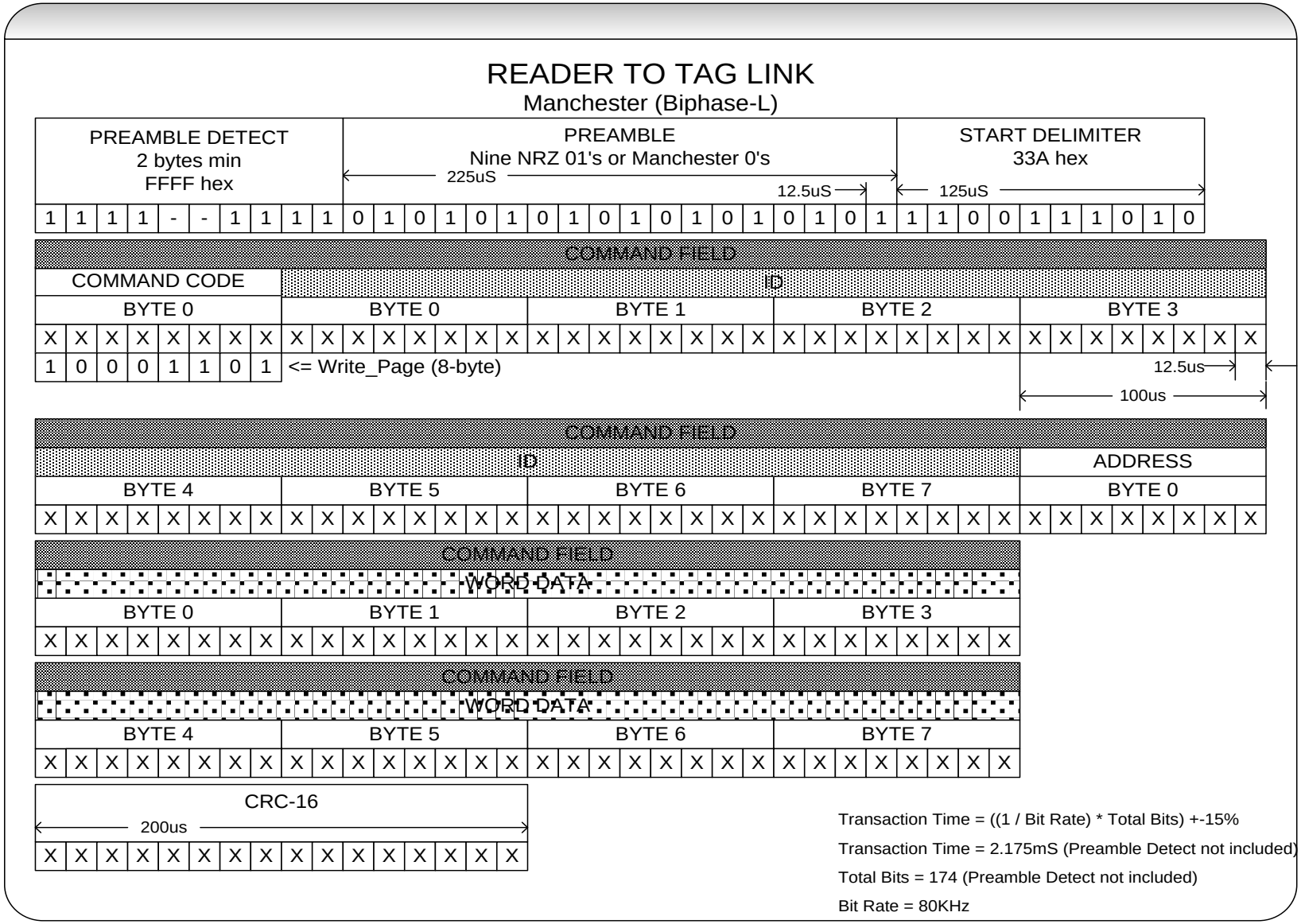


Figure 11. Detailed Command and Response Definition

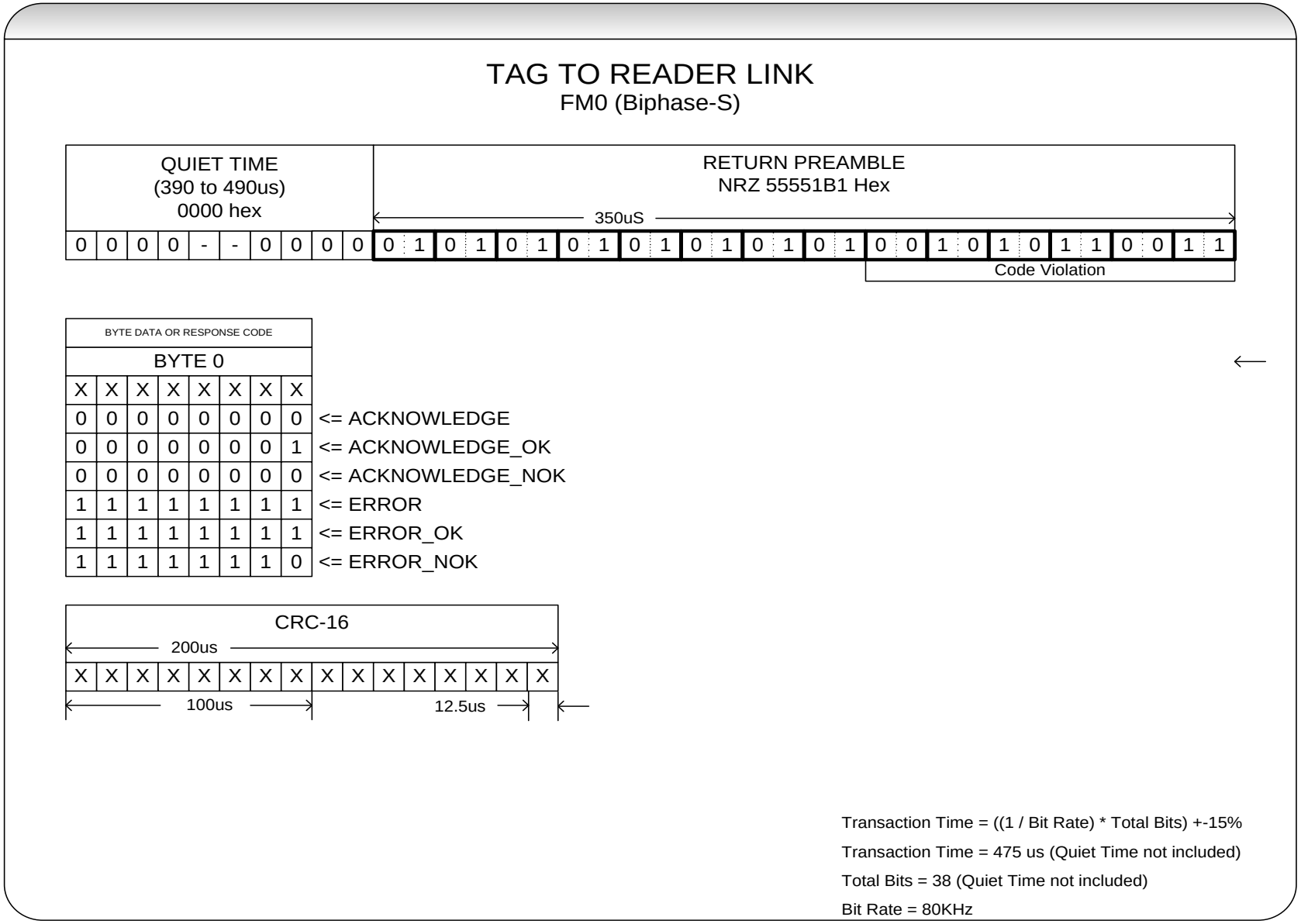


Figure 12. Detailed Command and Response Definition

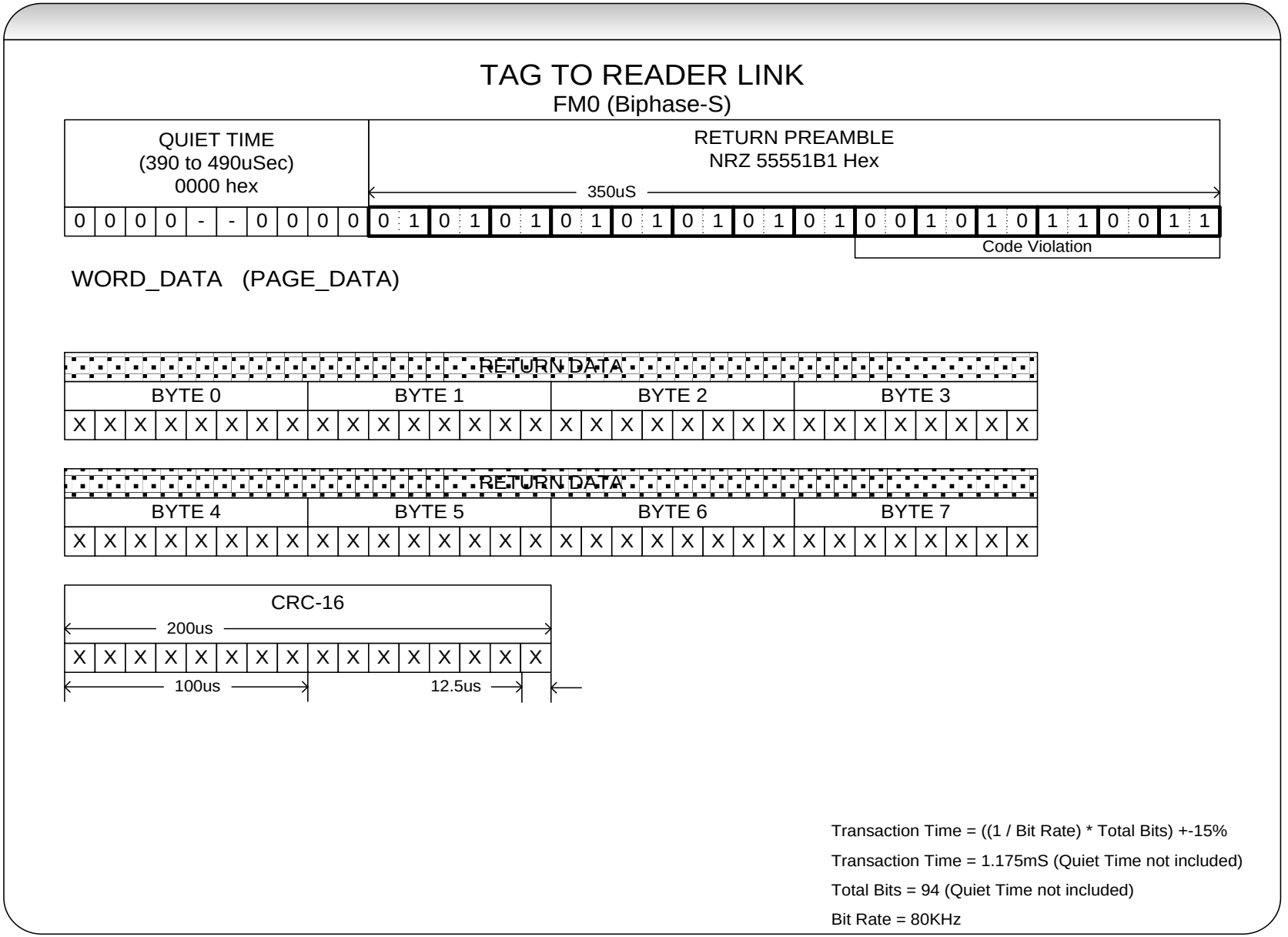


Figure 13. Detailed Command and Response Definition

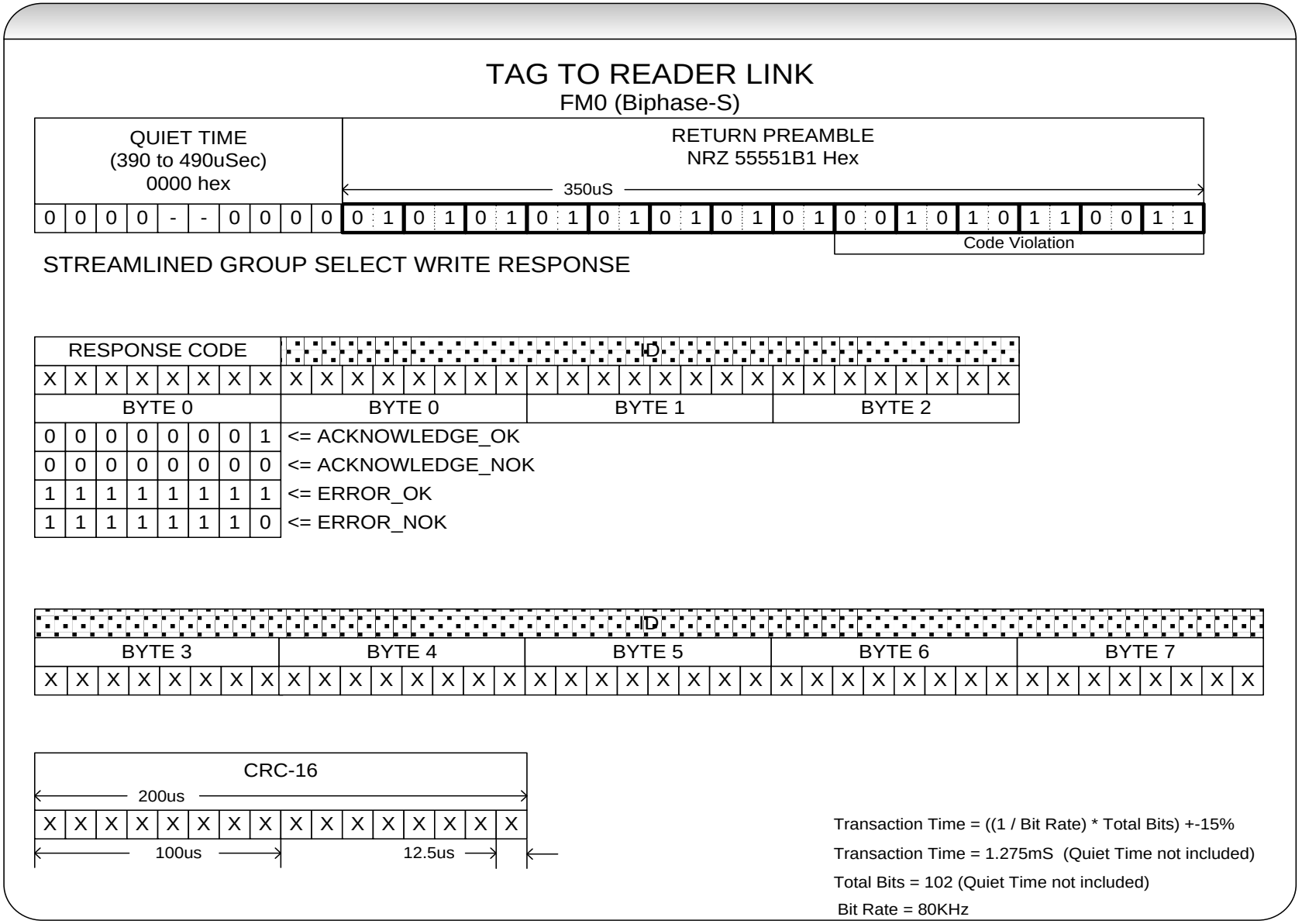


Figure 14. Detailed Command and Response Definition

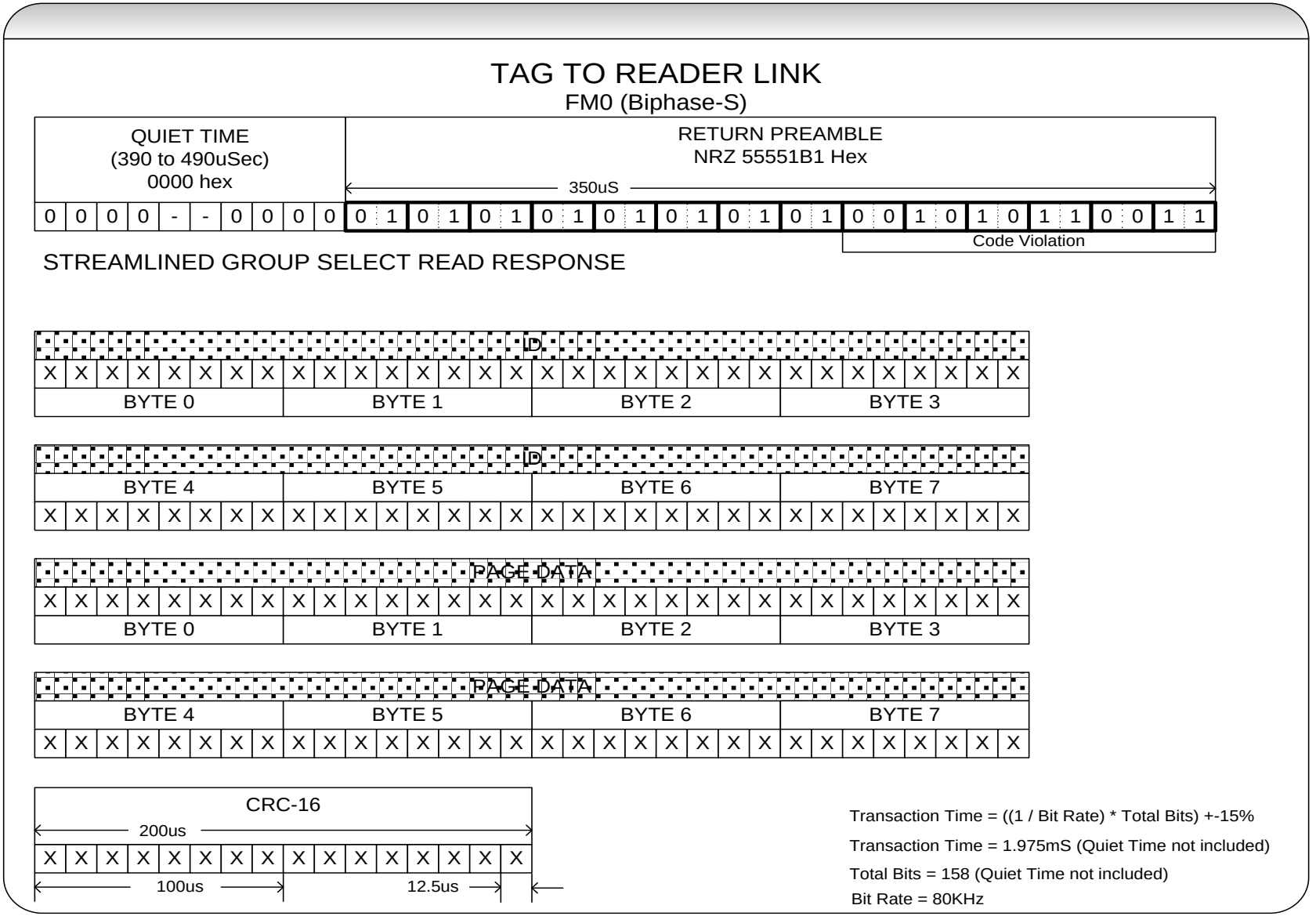


Figure 15. Detailed Command and Response Definition

2.3

2.4 State Machine description

The protocol has three major states: ready, ID, and data exchange.

READY The reset state when tag is first powered up.
ID The tagis trying to identify itself to the base station.
DATA_EXCHANGE The tag is known to the base station.

2.5 Valid Commands from tag States

Commands are active in states marked with "X" and ignored in other states.

Table 12. Valid Commands From Tag States

COMMAND	States		
	READY	ID	DATA EXCHANGE
GROUP_SELECT_EQ	X	X	
GROUP_SELECT_NE	X	X	
GROUP_SELECT_GT	X	X	
GROUP_SELECT_LT	X	X	
GROUP_UNSELECT_EQ		X	
GROUP_UNSELECT_NE		X	
GROUP_UNSELECT_GT		X	
GROUP_UNSELECT_LT		X	
MULTIPLE_UNSELECT		X	
FAIL		X	
SUCCESS		X	
RESEND		X	
INITIALIZE	X	X	X
READ& SGSEPR	X	X	X
DATA_READ		X	X
READ_VERIFY, READ_VERIFY_PAGE	X	X	X
SGSEPW & WRITE_PAGE	X	X	X

2.6 Tag State Transition Table

Table 13. Tag State Transition

State Transition Table			
State	**Command**	**Condition**	**Final State**
READY	GROUP_SELECT_EQ	≠	READY
	GROUP_SELECT_NE	=	READY
	GROUP_SELECT_GT	≤	READY
	GROUP_SELECT_LT	≥	READY
	GROUP_SELECT_EQ	=	ID
	GROUP_SELECT_NE	≠	ID
	GROUP_SELECT_GT	>	ID
	GROUP_SELECT_LT	<	ID
	SGSEPR		READY
	SGSEPW		READY
	INITIALIZE		READY
	READ	ID no match	READY
	READ	ID match	DATA_ EXCHANGE
	READ_VERIFY	ID no match or not WRITE_OK	READY
	READ_VERIFY	ID match & WRITE_OK	DATA_ EXCHANGE
	READ_VERIFY_PAGE	ID no match or not WRITE_OK	READY
	READ_VERIFY_PAGE	ID match & WRITE_OK	DATA_ EXCHANGE
	WRITE_PAGE	ID no match	READY
	WRITE_PAGE	ID match	DATA_ EXCHANGE
ID	GROUP_UNSEL_EQ	≠	ID
	GROUP_UNSEL_NE	=	ID
	GROUP_UNSEL_GT	≤	ID
	GROUP_UNSEL_LT	≥	ID

State Transition Table			
State	**Command**	**Condition**	**Final State**
	GROUP_UNSEL_EQ	=	READY
	GROUP_UNSEL_NE	≠	READY
	GROUP_UNSEL_GT	>	READY
	GROUP_UNSEL_LT	<	READY
	SGSEPR		ID
	SGSEPW		ID
	MULTIPLE_UNSEL	≠ or not WRITE_OK	ID
	MULTIPLE_UNSEL	= and WRITE_OK	READY
	GROUP_SELECT_XX		ID
	FAIL		ID
	SUCCESS		ID
	RESEND		ID
	INITIALIZE		READY
	READ	ID no match	ID
	READ	ID match	DATA_ EXCHANGE
	DATA_READ	ID no match	ID
	DATA_READ	ID match	DATA_ EXCHANGE
ID	READ_VERIFY	ID no match or not WRITE_OK	ID
	READ_VERIFY	ID match and WRITE_OK	DATA_ EXCHANGE
	READ_VERIFY_PAGE	ID no match or not WRITE_OK	ID
	READ_VERIFY_PAGE	ID match and WRITE_OK	DATA_ EXCHANGE
	WRITE_PAGE	ID no match	ID
	WRITE_PAGE	ID match	DATA_ EXCHANGE
ID			

State Transition Table			
State	**Command**	**Condition**	**Final State**
	INITIALIZE		READY
	READ		DATA_ EXCHANGE
	DATA_READ		DATA_ EXCHANGE
	READ_VERIFY		DATA_ EXCHANGE
	READ_VERIFY_PAGE		DATA_ EXCHANGE
	WRITE_PAGE		DATA_ EXCHANGE
Data Exchange			
	SGSEPR		DATA_ EXCHANGE
	SGSEPW		DATA_ EXCHANGE

2.7 Memory

There are 256 addressable locations, each containing one 8-bit data byte and an associated lock bit. Addresses 0 - 7 contain the tag's unique ID and is sent to the reader upon a Group_Select command under the proper conditions.

2.7.1 Memory Map

Table 14. Memory Map

Address Bytes (HEX)	Use	Description/Comment
00 - 07	Page 0 – Factory Reserved	Unique ID
08 - 0F	Page 1	Application Specific
10 – 17	Page 2	Application Specific
18 – 1F	Page 3	Application Specific
20 – 27	Page 4	Application Specific
28 – 2F	Page 5	Application Specific
30 – 37	Page 6	Application Specific
38 – 3F	Page 7	Application Specific
40 – 47	Page 8	Application Specific
48 – 4F	Page 9	Application Specific
50 – 57	Page 10	Application Specific
58 – 5F	Page 11	Application Specific
60 – 67	Page 12	Application Specific
68 – 6F	Page 13	Application Specific
70 – 77	Page 14	Application Specific

Address Bytes (HEX)	Use	Description/Comment
78 – 7F	Page 15	Application Specific
80 – 87	Page 16	Application Specific
88 – 8F	Page 17	Application Specific
90 – 97	Page 18	Application Specific
98 – 9F	Page 19	Application Specific
A0 – A7	Page 20	Application Specific
A8 – AF	Page 21	Application Specific
B0 – B7	Page 22	Application Specific
B8 – BF	Page 23	Application Specific
C0 – C7	Page 24	Application Specific
C8 - CF	Page 25	Application Specific
D0 – D7	Page 26	Application Specific
D8 – DF	Page 27	Application Specific
E0 – E7	Page 28	Application Specific
E8 – EF	Page 29	Application Specific
F0- F7	Page 30	Application Specific
F7 – FF	Page 31	Application Specific

2.7.2 Memory Definition

2.7.2.1 Page 0: Address Locations 0x00 – 0x07

This page in memory is reserved for the unique ID and can be defined by the customer.

2.7.2.2 Page 1 – 31: Address Locations 0x08 – 0xFF

These pages are user defined when operating in (S)eGo mode.