

## Code Tables

UART – Command Codes		
Code	Name	Meaning
1	COMIN	Communication Init
2	SPIC	SPI Configuration

UART – Reply Codes		
Code	Name	Meaning
126	NACK	Not Acknowledge
127	ACK	Acknowledge

UART – Error Code	
Code	Meaning
1	Checksum Error

## Code Tables

SPI – Frame Codes		
Code	Name	Meaning
1	COMIN	Controlles Value
2	SD	Sensor Data

# SPI Data

Controlled Value – SPI					
Offset	Field	Size [Bytes]	Data Type	Value	Description
0	Command	1	Unsigned 8	1	CV (Master → Slave)
1	Payload Size	1	Unsigned 8	Unsigned 8	4 Byte * x
2	Payload	x	Signed 32	Signed 32	Controller Output (Matlab)
3 + x	Checksum	1	Unsigned 8	Unsigned 8	

Sensor Data – SPI					
Offset	Field	Size [Bytes]	Data Type	Value	Description
0	Command	1	Unsigned 8	2	SD (Slave → Master)
1	Payload Size	1	Unsigned 8	Unsigned 8	4 Byte * x
2	Payload	x	Signed 32	Signed 32	Sensor Data (Matlab)
3 + x	Checksum	1	Unsigned 8	Unsigned 8	

# UART - Commands

Communication Init – UART					
Offset	Field	Size [Bytes]	Data Type	Value	Description
0	Command	1	Unsigned 8	1	COMIN
1	Identifier	1	Unsigned 8	A7	XMC4500 ID
2	Checksum	1	Unsigned 8	Unsigned 8	

SPI Configuration – UART					
Offset	Field	Size [Bytes]	Data Type	Value	Description
0	Command	1	Unsigned 8	2	SPIC
1	SPI-Config	1	Unsigned 8	Unsigned 8	Clock Value
2	SPI-Config	1	Unsigned 8	Unsigned 8	Clock nth power (10^n)
3	Checksum	1	Unsigned 8	Unsigned 8	

# UART - Replies

Not Acknowledge					
Offset	Field	Size [Bytes]	Data Type	Value	Description
0	Command	1	Unsigned 8	126	NACK
1	Error	1	Unsigned 8	0...255	Error Code (see Code Tables)
2	Checksum	1	Unsigned 8	Unsigned 8	

Acknowledge					
Offset	Field	Size [Bytes]	Data Type	Value	Description
0	Command	1	Unsigned 8	127	ACK
1	Checksum	1	Unsigned 8	Unsigned 8	