

STBee Serial Protocol

Table of Contents

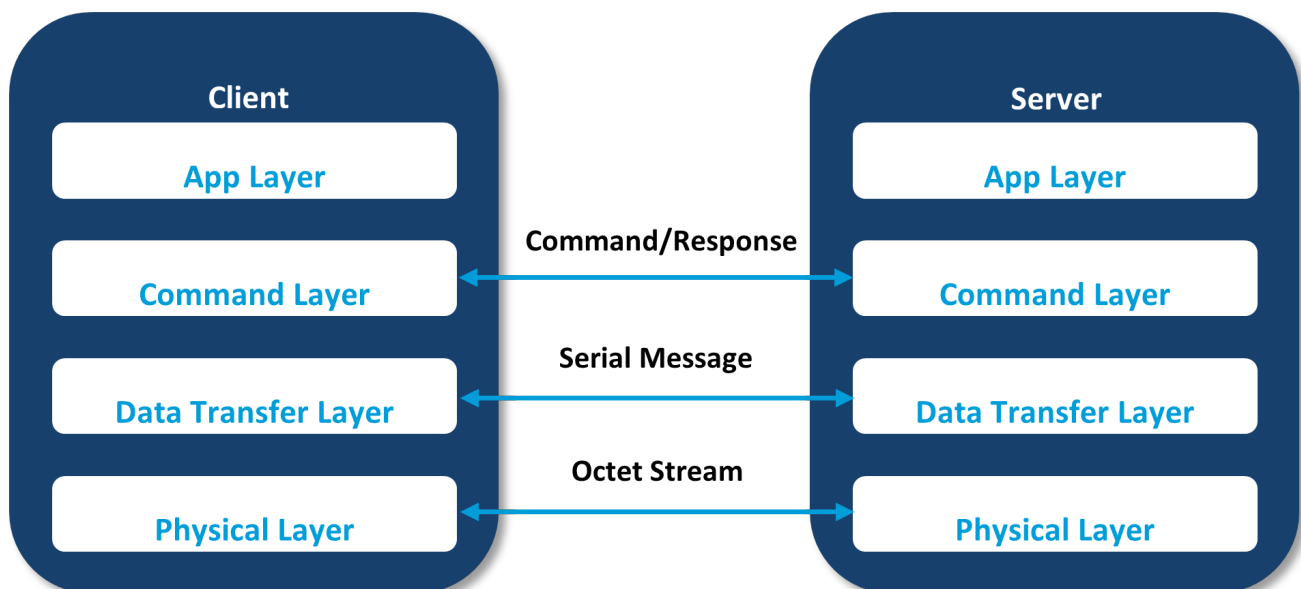
1. Introduction

1.1 Overview

This protocol depends on Command-Response-Acknowledgment (CRA) messages and is designed to handle multiple requests at same time.

CRA messages are binary encoded to reduce the overhead of using strings.

There are two types of messages: error-checked messages and non error checked messages introduced in DTL section.

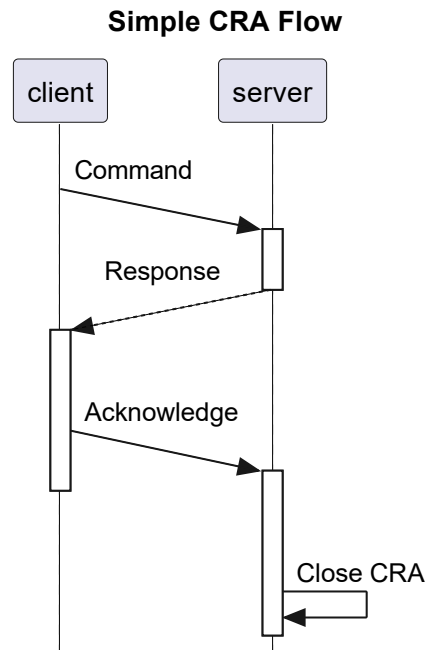


2. Command Layer Communication

2.1 CRA Frame

In this protocol standard there is three types of messages.

- Command Message: always sent from the client to request some action.
- Response Message: always sent from server after processing a request from client. Response is considered acknowledgment.
- Acknowledge Message: always sent from the client after processing to tell the server that response has arrived and processed correctly, so it can close the CRA call and discard response if needed.



2.2 Command Format

The following figure outlines the command format which is used for communication purposes.

Unique ID	Reserved	AF	Priority	Command	Payload
8 bits	5 bits	1 bit	2 bits	8 bits	8 * n bits

2.2.1 Unique Identifier

This field contains a unique 8-bit integer used to identify each CRA session in order to allow handling multiple requests at same time and this allows handling up to 256 request at same time.

2.2.2 Reserved

This field contains 5-bits that are reserved for future uses and can be used as flags if needed.

2.2.3 Acknowledge Flag (AF)

This flag is used to distinguish between commands and acknowledge frames. It's set to zero if command and one otherwise.

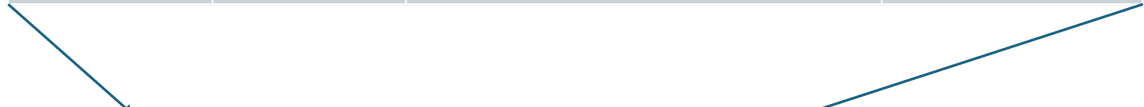
2.2.4 Priority

Contains two bits to support four levels of priority. Server should handle higher priority commands before lower ones.

2.2.5 Command

This field contains 8 bits to support up to 256 commands.

CRC EN	RESERVED	Command Payload	CRC 16 (Optional)
1 bit	7 bits	$8 * (n + 3)$ bits	16 bits



SLIP END	Payload	SLIP END
8 bits	$8 * (n + 4)$ or $8 * (n + 6)$ bits + $8 * k$ bits for Slip encoding	8 bits