DROID.FARM

Precision Agriculture

Technical Documentation: Text Protocol for UART Data Transmission $SC

Introduction

This document provides technical details for the control unit responsible for managing sections on agricultural machinery. The controller informs the system about the number of sections it supports, with a maximum capacity of 99 sections. This documentation outlines the communication protocol, message format, and usage examples for seamless integration with agricultural systems.

UART Parameters

- Baud Rate: 115200 bits/s
- Data Bits: 8 bits
- Parity: None
- Stop Bits: 1 (1 stop bit)

Message Format

Each message starts with a preamble consisting of a one-byte '$' symbol. Following the preamble is the message identifier, which is a two-byte character string "SC". The DataField containing information about liquid flow regulation comes next. The message is concluded with a checksum and the CR (carriage return) and LF (line feed) symbols.

Example Message

Here is an example message string:

$SC,10,1,0,1,0,1,1,1,0,1,0,0*21

DataField Structure

The DataField includes the following fields:

- **Data 1**: Represents the maximum number of supported sections (e.g., 10 in the example).
- **Data 2**: Indicates whether the main valve is active (1 for active, 0 for inactive).
- **Data (3-102)**: Status of sections, comma-separated. Each section status can be either 0 (disabled) or 1 (enabled).

Checksum

After the DataField, a '*' symbol, represented by a two-byte string CHK1 and CHK2.

End of Message

The message concludes with the CR (carriage return) and LF (line feed) symbols, indicating the end of the packet.