

FarmRobo Technologies Pvt Ltd

Serial Data Communication between App and Bot Approach

- Based on Requirement communication data split as two arrays
 - Frequency : 50 - 100ms
 - Bot to APP

Param name	Data type	Min Value	Max value
Timestamp			
Bot battery (Voltage)	int	45	60
Motor Temperature T1 (degree Celsius)	Int	15	120
Motor Temperature T2	Int	15	120
Driver Temperature T3	Int	15	120
Water Level	int	0	100
Steering Angle (Lane Guide)	int	-60	+60
Battery Alert	Int	0	1
Motor Temperature T1 Alert	Int	0	1
Motor Temperature T2 Alert	Int	0	1
Driver Temperature T3 Alert	Int	0	1
Water Level Alert	Int	0	1

Note :: If any alert is not zero then it means the value is not expected and it's an Error Message

- **App to Bot Serial Communication**
- **Frequency : Every 50 - 100ms**
- **Msg ID: 0 (Home page data) - High-priority**

Param name	Parameters	Data type	Min Value	Max value
Timestamp	timestamp			
Message_ID	Message	int	0	0
Control Mode	1. Manual Mode 2. Cruise Mode 3. Semi-Autonomous	Int	0	3
Path Mode	1. Tool 2. Road	Int	1	2
Lights	1. On 2. OFF	Int	1	2
Emergency	1. ON 2. OFF	int	1	2
Tool Type	1. Furrow Blade 2. Tyne 3. Rotavator Blade 4. Boom Sprayer 5. Mist Blower 6. BrushCutter 7. Trailer	Int	1	7

If pathmode is road then what about tool type

- **App to Bot Serial Communication**
- **Frequency : Every 2000ms**
- **All messages share a common Message ID: 1.**

Tool Types and Parameters

1. Ferro Blade (Tool Type: 0)

Byte Index	Parameter	Data Type	Description	Range Of Options
0	TimeStamp	Unix Time	Time of the message in Unix timestamp.	
1	Message_ID	integer	Message ID	1
2	Tool Type ID-Default (0)	Integer	Identifies the tool type (Ferro Blade)	0
3	Crop Type	Integer	Type of crop as per the specified encoding.	1.Chilli 2.Cotton 3.Tobacco 4.Sugarcane 5.Brinjal 6.others
4	Crop Age	Integer	Age of the crop	1. 1 Month 2. 2 Months 3. 3 Months
5	Row Spacing	Integer	Row spacing	1. 18 2. 20 3. 23
6	Blade Size	Integer	Blade size	1. 450MM 2. 600MM
7	Depth	integer	Depth	1. 2 Inches 2. 3 Inches 3. 4 Inches
8	Padding Default (0)	Integer (0)	0	0

2. Tyne (Tool Type: 1)

Byte Index	Parameter	Data Type	Description	Range Of Options
0	TimeStamp	Unix Time	Time of the message in Unix timestamp.	
1	Message_ID	integer	Message ID	1
2	Tool Type ID-Default (1)	Integer	Identifies the tool type (Tyne)	1
3	Crop Type	Integer	Type of crop as per the specified encoding.	1.Chilli 2.Cotton 3.Tobacco 4.Sugarcane 5.Brinjal 6.others
4	Crop Age	Integer	Age of the crop	1. 1 Month 2. 2 Months 3. 3 Months
5	Row Spacing	Integer	Row spacing	1.18 Inches 2. 20 Inches 3. 23 Inches
6	No. Of Tynes	Integer	No. Of Tynes	1. 2 Tyne 2. 3 Tyne
7	Padding Default (0)	integer(0)	0	0
8	Padding Default (0)	Integer (0)	0	0

3. Rotovator (Tool Type: 2)

Byte Index	Parameter	Data Type	Description	Range Of Options
0	TimeStamp	Unix Time	Time of the message in Unix timestamp.	
1	Message_ID	integer	Message ID	1
2	Tool Type ID-Default (2)	Integer	Identifies the tool type (Rotovator)	2
3	Crop Type	Integer	Type of crop as per the specified encoding.	1.Chilli 2.Cotton 3.Tobacco 4.Sugarcane 5.Brinjal 6.others
4	Crop Age	Integer	Age of the crop	1. 1 Month 2. 2 Months 3. 3 Months
5	Row Spacing	Integer	Row spacing	3. 1.18 Inches 4. 2. 20 Inches 5. 3. 23 Inches
6	Blade Size	Integer	Blade size	1. 450MM 2. 600MM
7	speed	integer	Speed	1 . Slow 2. Medium 3. High
8	Padding Default (0)	Integer (0)	0	0

4. Boom Sprayer (Tool Type: 3)

Byte Index	Parameter	Data Type	Description	Range of Options
0	TimeStamp	Unix Time	Time of the message in Unix timestamp.	
1	Message_ID	integer	Message ID	1
2	Tool Type ID-Default (3)	Integer	Identifies the tool type (Tyne)	3
3	Crop Type	Integer	Type of crop as per the specified encoding.	1.Chilli 2.Cotton 3.Tobacco 4.Sugarcane 5.Brinjal 6.others
4	Crop Age	Integer	Age of the crop	1. 1 Month 2. 2 Months 3. 3 Months
5	Row Spacing	Integer	Row spacing	1. 18 Inches 2. 20 Inches 3. 23 Inches
6	Padding Default (0)	Integer(0)	0	0
7	Padding Default (0)	integer(0)	0	0
8	Padding Default (0)	Integer (0)	0	0