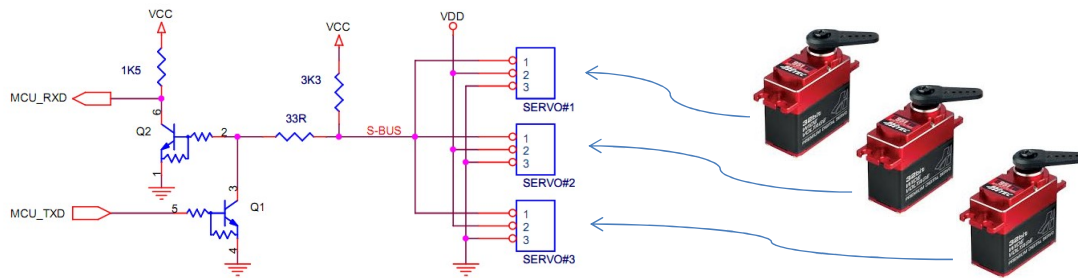# D-series SERVO Serial Control manual

*Communication Parameter : Baud rate - 115,200bps, stop bit - 1, parity - none

*Interface Circuit Diagram :

**Q1 must be off to receive data from the servo

1. Packet Format

* Data format - Little Endian

* Check Sum = (ID + Address + REG Length + Data_L + Data_H)%256

A. Normal Write

* Data write to SERVO

WRITE HEADER **0x96**	ID 0xXX	Address 0xXX	REG LENGTH **0x02**	DATA Low 0xXX	DATA High 0xXX	CHECK SUM 0xXX

B. Normal Read

1) Data write to SERVO

WRITE HEADER **0x96**	ID 0xXX	Address 0xXX	REG LENGTH **0x00**	CHECK SUM 0xXX

2) Response from SERVO

RETURN HEADER **0x69**	ID 0xXX	Address 0xXX	REG LENGTH **0x02**	DATA Low 0xXX	DATA High 0xXX	CHECK SUM 0xXX

2. Example

A. Move to Neutral(PWM 1500us) Position(Position Data : 3000)

1) Data write to SERVO

0x96	00	1E	**02**	B8	0a	E2

*No response from servo

B. Current Position Read

1) Data write to SERVO

0x96	00	0C	**00**	0C

2) TXD disable for data receive(Please refer to Interface circuit diagram)

3) Response from SERVO

0x69	00	0C	**02**	B8	0B	D1

* Current Position is 0x0BB8

3. Address Table

Address		Name	length	R/W	Range	Feature
Status	0x0C	REG_POSITION	2	r		Position read
	0x12	REG_VOLTAGE	2	r		Input Voltage read
Action	0x1E	REG_POSITION_NEW	2	r/w	0~6000	New Position
	0x54	REG_VELOCITY_MAX	2	r/w	0~4095	Maximum Velocity
	0x56	REG_TORQUE_MAX	2	r/w	0~4096	Maximum Torque
	0x46	REG_POWER_CONFIG	2	w		SOFT RESET
	0x6E	REG_FACTORY_DEFAULT	2	w		Factory Default
	0x70	REG_CONFIG_SAVE	2	w		Save Config
Config	0x32	REG_ID	2	r/w	0~255	ID, 0 or 255 - Broadcast
	0x4C	REG_FAILSAFE_SET	2	r/w	900~2100	Failsafe position set
	0x4E	REG_DEADBAND	2	r/w	0~4095	DeadBand
	0x60	REG_SOFT_START_SPEED	2	r/w	0~4097	Power On Soft start Speed
	0xB0	REG_POSITION_MAX	2	r/w	0~16383	Set Max position
	0xB2	REG_POSITION_MIN	2	r/w	0~16383	Set Min position
	0xC2	REG_POSITION_MID	2	r/w	0~16383	Set Mid position