

## I2C Data Addresses

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CMD	DRDY	SCMP	TOF0(L)	TOF0(H)	TOF1(L)	TOF1(H)	TOF2(L)	TOF2(H)	TOF3(L)	TOF3(H)	RES	RES	RES	RES	RES

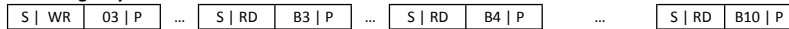
CMD	Command Register
DRDY	Data Ready Indicator
SCMP	Scan Complete
TOF0(L)	Time of Flight - Sonar 0 - Low Byte
TOF0(H)	Time of Flight - Sonar 0 - High Byte
...	
TOF3(L)	Time of Flight - Sonar 3 - Low Byte
TOF3(H)	Time of Flight - Sonar 3 - High Byte

All writes are single byte values written to the device as a command. Commands with options take the form of CMD | OPTION CODE.

There are two modes to read data back from the device. The first mode is individual bytes. By repeatedly sending the read address and reading the next byte of data you can increment through the data addresses to read all bytes. Block reads are accomplished by sending the BLKRD command ORed with the number of bytes you wish to retrieve. Subsequently a single READ is issued and the number of requested bytes is clocked in with no interruption.

The microcontroller will take time to process commands and may be significantly delayed in responding during active timing of a sonar pulse. Recommend polling against the command byte to determine when commands are completed and controller is ready for next command. Once a command is processed the value at Command Register will be either 0x00 to indicate success or 0xFE to indicate an error processing the command. This can be used to indicate the controller is now ready for a new command.

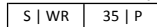
### Read Single Bytes



### Read Block



### Write Command (TRG)



S | = Start Bit  
 | P = Stop Bit  
 WR = Device Write Address  
 RD = Device Read Address  
 B(N) = Byte Read

## Command Byte Map

0	1	2	3	4	5	6	7	8	9	0A	0B	0C	0D	0E	0F
Set I2C Buffer Address															
10	11	12	13	14	15	16	17	18	19	1A	1B	1C	1D	1E	1F
Set I2C Buffer Address															
20	21	22	23	24	25	26	27	28	29	2A	2B	2C	2D	2E	2F
SENS	Set Sensor Mask														
30	31	32	33	34	35	36	37	38	39	3A	3B	3C	3D	3E	3F
ENA	DIS	SING	CONT	SLP	TRG										
40	41	42	43	44	45	46	47	48	49	4A	4B	4C	4D	4E	4F
50	51	52	53	54	55	56	57	58	59	5A	5B	5C	5D	5E	5F
60	61	62	63	64	65	66	67	68	69	6A	6B	6C	6D	6E	6F
SNDLY	Set Sensor Delay														
70	71	72	73	74	75	76	77	78	79	7A	7B	7C	7D	7E	7F
BLKRD	Block Data Read														
E0	E1	E2	E3	E4	E5	E6	E7	E8	E9	EA	EB	EC	ED	EE	EF
Reserved															
F0	F1	F2	F3	F4	F5	F6	F7	F8	F9	FA	FB	FC	FD	FE	FF
Reserved															