

# KILOBOT CONCENTRIC CIRCLE CODE CHART

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Kilobot Message Structure (12 bytes)

Section	Class	Bytes
1	Data (.data[])	9
2	Identifier (.type)	1
3	Checksum (.crc)	2

Byte (data[])	Data	Description
0	Type of Robot	0 = Seed / Star; 1 = Circle Bot / Planet
1	Ring Number	0 = moving; 1 = stopped; index of ring of kilobot
2	Robot ID	kilo_uid
3	Flag	0 = circle is not full; 1 = circle is full / complete
4 - 7	Bit Array	Tells which kilobots are part of particular circle. 1 @ ith place = R_i part of circle
8	Cardinality	No. of kilobots in circle

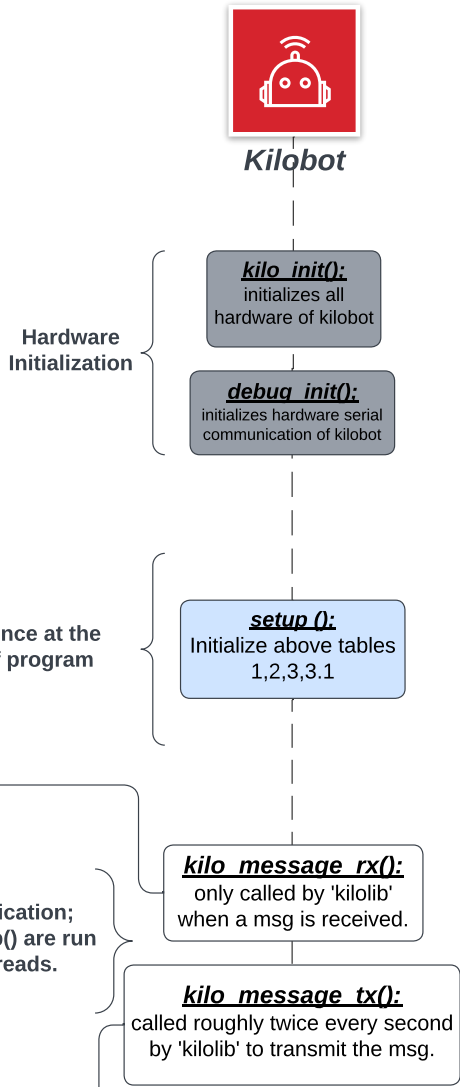


Table 1

S.No.	Variable	Initial Value
1	current_motion	-
2	loop_count	-1
3	distance	10000
4	new_message	0
5	timer	kiloticks = 0
6	last_changed	0
7	ring_status_from_star_robot	0
8	ring_status_from_planet_robot	0
9	message_from_stopped_L1_robot	0
10	new_message_from_L1_robot	0
11	my_stop_status	0
12	distance_from_L1_robot	10000
13	previous_dist_from_planet_robot	0
14	layer_2_robot_done	0
15	new_message_from_L2_robot	0
16	distance_from_L2_robot	10000

Table 2

S.No.	Variable	Initial Value
17	my_array[4]	0
18	rcvd_array[4]	0
19	time_array[NUM_R]	0
20	y	0
21	rcvd_count	0
22	my_count	0
23	my_ring_number	0
24	previous_dist_from_L2	0
25	heard_from_L2	0

Table 3

S.No.	Variable	Initial Value
26	outgoing_message	*
27	B[4]	-
28	mask1	0xFF000000 (1st byte)
29	mask2	0x00FF0000 (2nd byte)
30	mask3	0x0000FF00 (3rd byte)
31	mask4	0x000000FF (4th byte)
32	i1	0
33	i2	0
34	i3	0
35	i4	0
36	count	0

Table 3.1

outgoing_message.type	NORMAL
outgoing_message.data[0]	1
outgoing_message.data[1]	0
outgoing_message.data[2]	kilo_uid
outgoing_message.data[3]	0
outgoing_message.data[4]	0
outgoing_message.data[5]	0
outgoing_message.data[6]	0
outgoing_message.data[7]	0
outgoing_message.data[8]	0
outgoing_message.crc	message_crc(&g->outgoing_message)

