CodeSonar Analysis Report

generated by Administrator on Wed Aug 23 15:50:42 2017

for analysis cc2538-common analysis 1

Summary

Table 1: cc2538-common analysis 1 Summary

Active Warnings	File Count	Project Name	Time Started	Time Finished	Machine
187	392	cc2538-common	Sun Mar 12 21:37:38 2017	Sun Mar 12 21:42:03 2017	eduEF18.kent.ac.uk

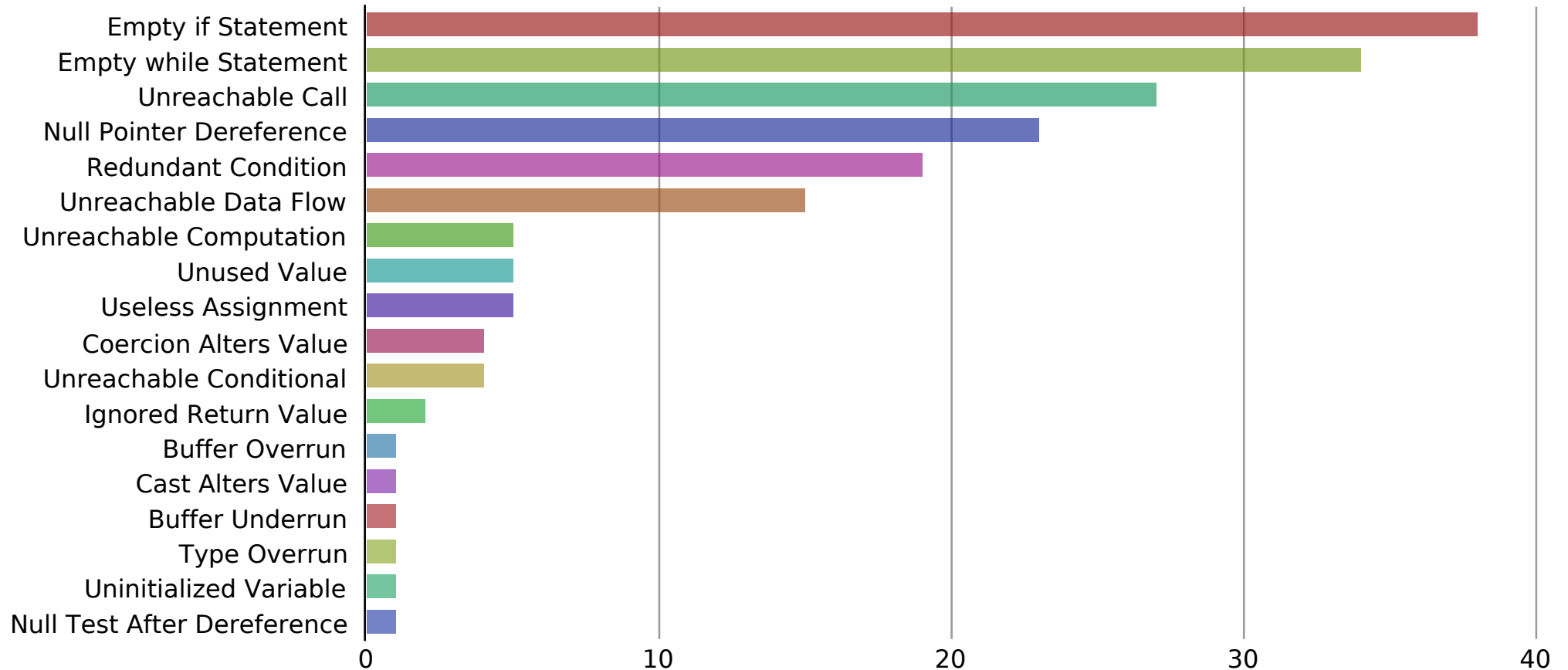# Warnings

Figure 1: cc2538-common analysis 1, Warnings by Class

Table 2: cc2538-common analysis 1, Warnings by Class

Warning Class	Active Warnings
Empty if Statement	38
Empty while Statement	34
Unreachable Call	27
Null Pointer Dereference	23
Redundant Condition	19
Unreachable Data Flow	15
Useless Assignment	5
Unused Value	5
Unreachable Computation	5
Unreachable Conditional	4
Coercion Alters Value	4
Ignored Return Value	2
Type Overrun	1
Cast Alters Value	1
Uninitialized Variable	1
Null Test After Dereference	1

Warning Class	Active Warnings
Buffer Overrun	1
Buffer Underrun	1

Table 3: cc2538-common analysis 1, Warnings by File

File	Active Warnings	Total Lines	Language
cfs-coffee.c	14	1346	C
cc2538-rf.c	10	1126	C
collect.c	9	1558	C
ccm.c	9	142	C
contikimac.c	9	1102	C
lpm.c	8	390	C
gcm.c	8	125	C
aes.c	7	330	C
sha256.c	7	356	C
cfs-coffee-arch.c	6	144	C
framer-802154.c	6	274	C
startup-gcc.c	6	330	C

File	Active Warnings	Total Lines	Language
nbr-table.c	5	483	C
cc2538-ccm-star.c	5	130	C
usb-arch.c	5	1295	C
cbc-mac.c	5	91	C
ecc-algorithm.c	4	201	C
sys-ctrl.c	3	135	C
ctr.c	3	77	C
phase.c	3	252	C
timer-test.c	3	183	C
csma.c	3	507	C
soc.c	3	108	C
random.c	2	136	C
test-pwm.c	2	202	C
rudolph1.c	2	338	C
rudolph2.c	2	407	C
usb-core.c	2	631	C
test-uart.c	2	110	C

File	Active Warnings	Total Lines	Language
rtimer.c	2	108	C
frame802154e-ie.c	2	585	C
ctimer.c	1	175	C
adc.c	1	99	C
clock.c	1	255	C
runicast.c	1	250	C
usb-serial.c	1	307	C
contiki-main.c	1	252	C
route.c	1	292	C
rucb.c	1	170	C
serial-line.c	1	137	C
cc2538-aes-128.c	1	121	C
slip.c	1	457	C
collect-link-estimate.c	1	139	C
frame802154.c	1	623	C
watchdog.c	1	109	C
dbg.c	1	117	C

File	Active Warnings	Total Lines	Language
collect-neighbor.c	1	436	C
ifft.c	1	168	C
uart.c	1	398	C
sensors.c	1	137	C
ieee-addr.c	1	92	C
linkaddr.c	1	80	C
etimer.c	1	272	C
core_cm3.h	1	1776	C
rtimer-arch.c	1	158	C
nullrdc.c	1	368	C
netflood.c	1	184	C
neighbor-discovery.c	1	196	C
trickle.c	1	210	C
slip-arch.c	1	86	C
polite.c	1	144	C
mmem.c	0	164	C
trickle-timer.c	0	410	C

File	Active Warnings	Total Lines	Language
ecc-algorithm.h	0	178	C
bignum-driver.h	0	462	C
trickle-timer.h	0	514	C
button-sensor.c	0	252	C
pwm.h	0	182	C
timer.c	0	148	C
cc2538-temp-sensor.c	0	77	C
pwm.c	0	369	C
stdlib.h	0	335	C
stdlib.h	0	8	C
alloca.h	0	21	C
als-sensor.c	0	95	C
button-sensor.h	0	66	C
stimer.c	0	163	C
sensors.h	0	72	C
chameleon.c	0	157	C
stimer.h	0	97	C

File	Active Warnings	Total Lines	Language
als-sensor.h	0	63	C
settings.c	0	475	C
anti-replay.c	0	115	C
nullradio.c	0	107	C
nullradio.h	0	8	C
ecc-driver.c	0	559	C
usb-api.h	0	127	C
descriptors.h	0	10	C
gpio.c	0	123	C
string-descriptors.h	0	20	C
usb-arch.h	0	77	C
usb.h	0	185	C
usb-core.h	0	19	C
crypto.c	0	120	C
ringbuf.h	0	135	C
serial-line.h	0	76	C
bignum-driver.c	0	1064	C

File	Active Warnings	Total Lines	Language
broadcast-announcement.h	0	71	C
phase.h	0	66	C
leds-arch.c	0	72	C

(Showing 100 of 392 Files)

Table 4: cc2538-common analysis 1, Warning Instances

Score	Warning Class	File Name	Procedure Name	Line Number	State	Owner
63	Uninitialized Variable	frame802154.c	frame802154_check_dest_panid	214	None	None
58	Buffer Overrun	test-uart.c	process_thread_cc2538_uart_demo_process	91	None	None
51	Null Test After Dereference	frame802154e-ie.c	frame80215e_create_ie_tsch_channel_hopping_sequence	303	None	None
49	Null Pointer Dereference	cbc-mac.c	cbc_mac_auth_start	59	None	None
49	Null Pointer Dereference	cfs-coffee-arch.c	cfs_coffee_arch_erase	81	None	None
49	Null Pointer Dereference	startup-gcc.c	reset_handler	317	None	None
49	Null Pointer Dereference	gcm.c	gcm_auth_crypt_start	63	None	None
49	Null Pointer Dereference	aes.c	aes_load_keys	69	None	None
49	Null Pointer Dereference	aes.c	aes_load_keys	81	None	None
49	Null Pointer Dereference	ctr.c	ctr_crypt_start	62	None	None

Score	Warning Class	File Name	Procedure Name	Line Number	State	Owner
49	Null Pointer Dereference	ccm.c	ccm_auth_crypt_start	74	None	None
49	Null Pointer Dereference	sha256.c	sha256_process	262	None	None
49	Null Pointer Dereference	cfs-coffee-arch.c	cfs_coffee_arch_write	125	None	None
49	Null Pointer Dereference	cfs-coffee-arch.c	cfs_coffee_arch_write	101	None	None
49	Null Pointer Dereference	sha256.c	sha256_process	273	None	None
49	Null Pointer Dereference	cfs-coffee-arch.c	cfs_coffee_arch_write	115	None	None
49	Null Pointer Dereference	soc.c	soc_print_info	99	None	None
49	Null Pointer Dereference	cbc-mac.c	cbc_mac_auth_get_result	78	None	None
49	Null Pointer Dereference	ccm.c	ccm_auth_crypt_get_result	104	None	None
49	Null Pointer Dereference	gcm.c	gcm_auth_crypt_get_result	84	None	None
49	Null Pointer Dereference	cbc-mac.c	cbc_mac_auth_get_result	85	None	None
49	Null Pointer Dereference	ccm.c	ccm_auth_crypt_get_result	98	None	None
49	Null Pointer Dereference	gcm.c	gcm_auth_crypt_get_result	91	None	None
48	Null Pointer Dereference	polite.c	recv	60	None	None
48	Null Pointer Dereference	nbr-table.c	nbr_table_add_lladdr	368	None	None
47	Coercion Alters Value	route.c	route_lookup	174	None	None
47	Coercion Alters Value	rucb.c	rucb_open	150	None	None

Score	Warning Class	File Name	Procedure Name	Line Number	State	Owner
46	Null Pointer Dereference	linkaddr.c	linkaddr_copy	65	None	None
46	Coercion Alters Value	usb-arch.c	ep0_get_data_pkt	943	None	None
45	Coercion Alters Value	ifft.c	ifft	123	None	None
42	Type Overrun	usb-arch.c	fill_buffers	885	None	None
41	Cast Alters Value	core_cm3.h	NVIC_SetPriority	1541	None	None
39	Buffer Underrun	nbr-table.c	remove_key	195	None	None
27	Ignored Return Value	contikimac.c	send_packet	708	None	None
27	Ignored Return Value	netflood.c	recv_from_ipolite	113	None	None
23	Unused Value	cc2538-ccm-star.c	aead	88	None	None
23	Unused Value	ccm.c	ccm_auth_crypt_start	67	None	None
23	Unused Value	ctr.c	ctr_crypt_start	57	None	None
23	Unused Value	gcm.c	gcm_auth_crypt_start	59	None	None
23	Unused Value	soc.c	soc_print_info	89	None	None
21	Useless Assignment	collect.c	rtmetric_compute	252	None	None
21	Useless Assignment	framer-802154.c	create_frame	88	None	None
21	Useless Assignment	framer-802154.c	create_frame	90	None	None
21	Useless Assignment	framer-802154.c	create_frame	93	None	None

Score	Warning Class	File Name	Procedure Name	Line Number	State	Owner
21	Useless Assignment	framer-802154.c	create_frame	98	None	None
20	Redundant Condition	cc2538-aes-128.c	set_key	84	None	None
20	Redundant Condition	cfs-coffee.c	cfs_coffee_format	1331	None	None
20	Redundant Condition	cfs-coffee.c	file_end	507	None	None
20	Redundant Condition	collect-link-estimate.c	collect_link_estimate_update_tx	83	None	None
20	Redundant Condition	contikimac.c	schedule_powercycle	317	None	None
20	Redundant Condition	contikimac.c	schedule_powercycle_fixed	337	None	None
20	Redundant Condition	contikimac.c	send_packet	584	None	None
20	Redundant Condition	csma.c	backoff_period	160	None	None
20	Redundant Condition	csma.c	channel_check_interval	484	None	None
20	Redundant Condition	frame802154e-ie.c	frame80215e_create_ie_tsch_channel_hopping_sequence	303	None	None
20	Redundant Condition	nbr-table.c	nbr_table_allocate	234	None	None
20	Redundant Condition	phase.c	phase_update	124	None	None
20	Redundant Condition	phase.c	phase_wait	186	None	None
20	Redundant Condition	rtimer.c	rtimer_run_next	101	None	None
20	Redundant Condition	rudolph1.c	handle_data	189	None	None
20	Redundant Condition	rudolph2.c	recv	355	None	None

Score	Warning Class	File Name	Procedure Name	Line Number	State	Owner
20	Redundant Condition	timer-test.c	process_thread_timer_test_process	131	None	None
20	Redundant Condition	usb-arch.c	ep0_get_setup_pkt	912	None	None
20	Redundant Condition	usb-arch.c	fill_buffers	873	None	None
18	Unreachable Call	cbc-mac.c	cbc_mac_auth_start	62	None	None
18	Unreachable Call	cc2538-ccm-star.c	aead	91	None	None
18	Unreachable Call	cc2538-ccm-star.c	aead	106	None	None
18	Unreachable Call	cc2538-ccm-star.c	aead	122	None	None
18	Unreachable Call	ccm.c	ccm_auth_crypt_start	76	None	None
18	Unreachable Call	cfs-coffee-arch.c	cfs_coffee_arch_erase	82	None	None
18	Unreachable Call	cfs-coffee-arch.c	cfs_coffee_arch_write	126	None	None
18	Unreachable Call	cfs-coffee.c	cfs_coffee_format	1332	None	None
18	Unreachable Call	cfs-coffee.c	find_file	478	None	None
18	Unreachable Call	cfs-coffee.c	merge_log	842	None	None
18	Unreachable Call	cfs-coffee.c	remove_by_page	576	None	None
18	Unreachable Call	cfs-coffee.c	reserve	643	None	None
18	Unreachable Call	collect.c	update_parent	318	None	None
18	Unreachable Call	collect.c	update_parent	378	None	None

Score	Warning Class	File Name	Procedure Name	Line Number	State	Owner
18	Unreachable Call	contiki-main.c	main	192	None	None
18	Unreachable Call	ctr.c	ctr_crypt_start	64	None	None
18	Unreachable Call	gcm.c	gcm_auth_crypt_start	65	None	None
18	Unreachable Call	ieee-addr.c	ieee_addr_cpy_to	49	None	None
18	Unreachable Call	lpm.c	enter_pm0	138	None	None
18	Unreachable Call	lpm.c	lpm_enter	316	None	None
18	Unreachable Call	rtimer.c	rtimer_run_next	102	None	None
18	Unreachable Call	sha256.c	sha256_process	263	None	None
18	Unreachable Call	sha256.c	sha256_process	292	None	None
18	Unreachable Call	sha256.c	sha256_process	302	None	None
18	Unreachable Call	soc.c	soc_print_info	99	None	None
18	Unreachable Call	startup-gcc.c	reset_handler	320	None	None
18	Unreachable Call	timer-test.c	process_thread_timer_test_process	132	None	None
17	Unreachable Computation	aes.c	aes_load_keys	70	None	None
17	Unreachable Computation	cfs-coffee.c	file_end	503	None	None
17	Unreachable Computation	cfs-coffee.c	isolate_pages	344	None	None
17	Unreachable Computation	framer-802154.c	create_frame	149	None	None

Score	Warning Class	File Name	Procedure Name	Line Number	State	Owner
17	Unreachable Computation	framer-802154.c	create_frame	165	None	None
15	Unreachable Conditional	cc2538-rf.c	prepare	600	None	None
15	Unreachable Conditional	cfs-coffee.c	collect_garbage	388	None	None
15	Unreachable Conditional	cfs-coffee.c	read_header	221	None	None
15	Unreachable Conditional	startup-gcc.c	nmi_handler	302	None	None

(Showing 100 of 187 Warnings)

Analysis Metrics

Table 5: cc2538-common analysis 1 Metrics

Metric Name	Value
Blank Lines	7829
Code Lines	32985
Comment Lines	32594
Include file instances	152
Lines with Code	37274
Lines with Comments	36883
Mixed Lines	4289
Top-level file instances	152
Total Lines	77697
User-defined functions	1081

File Metrics

Table 6: cc2538-common analysis 1 File Metrics Summary

Metric Name	Max	Min	Avg
Blank Lines	388	0	19.97
Code Lines	959	0	84.15
Comment Lines	1302	0	83.15
Cyclomatic Complexity	192	0	9.39
Lines with Code	983	0	95.09
Lines with Comments	1422	0	94.09
Mixed Lines	649	0	10.94
Modified Cyclomatic Complexity	192	0	9.02
Taint Propagator Total	0	0	0
Taint Sink Total	7	0	0.17
Taint Source Total	0	0	0
Total Lines	2219	2	198.21

Table 7: cc2538-common analysis 1 File Metrics Details

File	Total Lines	Lines with Code	Lines with Comments	Code Lines	Comment Lines	Blank Lines
uip.h	2219	698	1422	578	1302	219
core_cm3.h	1776	952	1085	303	436	388
collect.c	1558	983	436	956	409	166
cmsis_gcc.h	1373	734	382	713	361	278
cfs-coffee.c	1346	962	239	946	223	161
usb-arch.c	1295	962	163	959	160	173
cc2538-rf.c	1126	742	255	734	247	137
contikimac.c	1102	776	219	752	195	131
bignum-driver.c	1064	577	273	577	273	214
pka.h	871	191	723	112	644	36
reent.h	794	558	220	462	124	112
stdio.h	769	622	126	577	81	66
cdefs.h	707	446	211	415	180	81
udma.h	704	294	462	184	352	58
uipopt.h	684	159	487	122	450	75
rfcore-xreg.h	673	284	668	4	388	1

Table 7: cc2538-common analysis 1 File Metrics Details

File	Total Lines	Lines with Code	Lines with Comments	Code Lines	Comment Lines	Blank Lines
gpio.h	635	240	536	66	362	33
usb-core.c	631	553	25	543	15	63
frame802154.c	623	401	194	380	173	49
strformat.c	617	550	13	545	8	59
frame802154e-ie.c	585	458	119	434	95	32
ecc-driver.c	559	290	156	290	156	113
aes.h	544	303	432	103	232	9
process.h	531	90	386	88	384	57
features.h	515	276	205	270	199	40
trickle-timer.h	514	76	418	65	407	31
contiki-conf.h	510	265	222	224	181	64
csma.c	507	369	99	364	94	44
nbr-table.c	483	331	132	328	129	23
settings.c	475	284	104	281	101	90
queuebuf.c	473	365	103	345	83	25
stdint.h	466	388	34	387	33	45
bignum-driver.h	462	76	366	75	365	21

Table 7: cc2538-common analysis 1 File Metrics Details

File	Total Lines	Lines with Code	Lines with Comments	Code Lines	Comment Lines	Blank Lines
slip.c	457	343	90	327	74	40
stddef.h	443	313	166	246	99	31
collect-neighbor.c	436	312	86	310	84	40
ieeefp.h	434	303	68	293	58	73
trickle-timer.c	410	243	128	238	123	44
rudolph2.c	407	272	97	269	94	41
psock.h	404	59	321	49	311	34
uart.c	398	255	95	255	95	48
chameleon-bitopt.c	395	265	104	258	97	33
lpm.c	390	184	163	183	162	44
process.c	388	233	113	229	109	46
tcpip.h	378	55	283	53	281	42
packetbuf.h	371	153	185	141	173	45
pwm.c	369	241	84	241	84	44
nullrdc.c	368	271	87	247	63	34
spi.c	362	241	91	240	90	31
uart.h	360	149	338	14	203	8

File	Total Lines	Lines with Code	Lines with Comments	Code Lines	Comment Lines	Blank Lines
sha256.c	356	211	108	211	108	37
usb-regs.h	355	127	316	27	216	12
settings.h	352	173	134	156	117	62
sys-ctrl.h	342	150	249	81	180	12
rudolph1.c	338	244	69	241	66	28
stdlib.h	335	291	28	277	14	30
gptimer.h	335	137	325	8	196	2
aes.c	330	179	103	179	103	48
list.c	330	123	182	123	182	25
startup-gcc.c	330	254	234	83	63	13
route-discovery.c	329	220	80	216	76	33
pt.h	322	57	231	56	230	35
usb-serial.c	307	217	66	217	66	24
tcp-socket.h	299	63	212	62	211	25
radio.h	294	62	186	61	185	47
route.c	292	191	76	185	70	31
config.h	286	218	35	210	27	41

Table 7: cc2538-common analysis 1 File Metrics Details

File	Total Lines	Lines with Code	Lines with Comments	Code Lines	Comment Lines	Blank Lines
mtarch.c	285	145	129	145	129	11
contiki-default-conf.h	285	95	185	63	153	37
cfs.h	285	61	200	60	199	25
ioc.h	278	154	147	124	117	7
noncoresec.c	275	181	76	170	65	29
announcement.h	274	35	213	34	212	27
framer-802154.c	274	172	80	165	73	29
etimer.c	272	171	74	171	74	27
mt.h	263	29	208	28	207	27
udma.c	259	165	69	165	69	25
clock.c	255	97	137	97	137	21
etimer.h	254	23	208	22	207	24
packetbuf.c	254	167	71	166	70	17
button-sensor.c	252	103	120	103	120	29
contiki-main.c	252	149	71	148	70	33
phase.c	252	159	71	156	68	25
_default_types.h	250	214	14	213	13	23

File	Total Lines	Lines with Code	Lines with Comments	Code Lines	Comment Lines	Blank Lines
runicast.c	250	168	63	166	61	21
types.h	246	175	55	153	33	38
i2c.c	246	156	81	148	73	17
i2c.h	240	53	185	40	172	15
board.h	236	68	164	58	154	14
broadcast-announcement.c	235	144	64	142	62	29
_pthreadtypes.h	233	116	105	80	69	48
lpm.h	230	36	185	35	184	10
frame802154.h	230	101	138	65	102	27
ecc-driver.h	227	38	187	27	176	13
packetqueue.h	222	31	168	30	167	24
spi-arch.h	222	65	147	63	145	12
chameleon-raw.c	215	141	64	135	58	16
_types.h	213	149	35	141	27	37
mesh.c	211	135	53	134	52	24
link-stats.c	211	120	77	117	74	17

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