Overview

The coreH743-v1.0 is a small module based on STM32H743XIH6 MCU from STMicroelectronics. It was designed to simplify the structure of the end device. You can concentrate on your device without need of developing sch and part of PCB with MCU node.

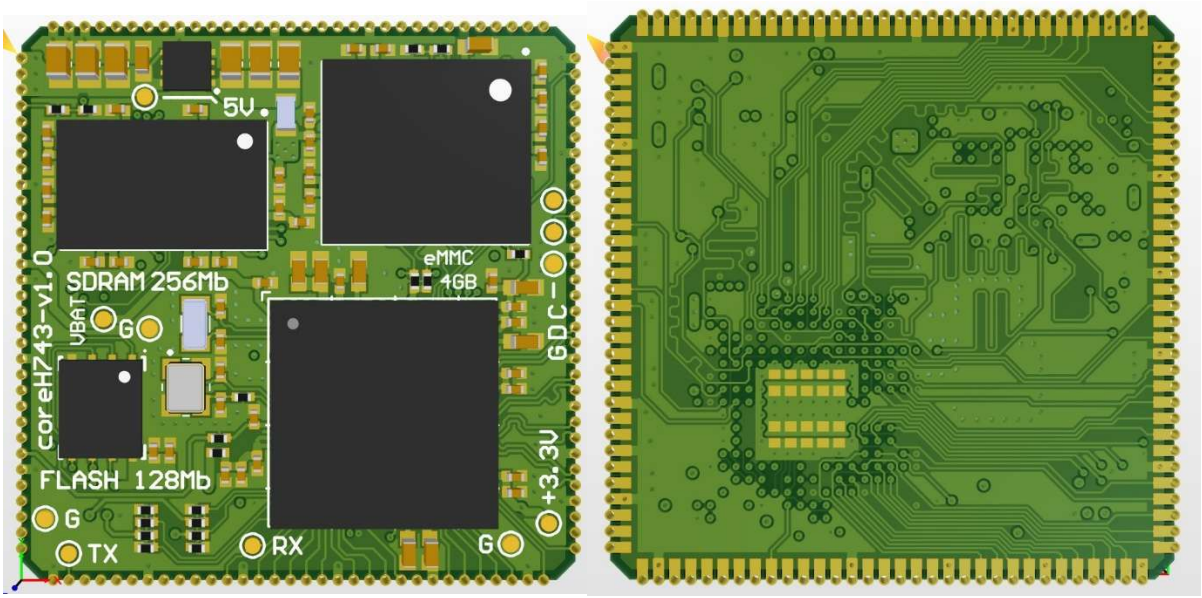

Figure 1. – Top & Bot view of the module

Module has onboard low power LDO, 256Mb SDRAM, 4GB eMMC, 128Mb FLASH chip.

Features

- Extra small dimensions – 35mm x 35mm x 3.1mm
- Input power range – 4V – 6V
- Built in LDO chip for 3.3V rail and with PSSR of 75dB on 1kHz
- Built in LSE oscillator
- Built in HSE 12MHz
- BOOT and nRST pins for external connection
- Built in SDRAM 256Mb 32-bit Data bus
- Built in QSPI FLASH 128Mb
- Built in eMMC 4GB 8-bit Data bus
- 3.3V line short circuit protection
- 3.3V line overheat protection
- Temperature range - -40℃ ~ +85℃

Pinout

Table 1.1 - pinout

Number	Name	Function
PORT A		
95	PA15	GPIO
87	PA14	GPIO
86	PA13	GPIO
78	PA12	USB_FS_DATA_P
79	PA11	USB_FS_DATA_N
82	PA10	GPIO
83	PA9	GPIO
109	PA8	GPIO
38	PA7	GPIO
32	PA6	GPIO
46	PA5	GPIO
47	PA4	GPIO
44	PA3	GPIO
34	PA2	GPIO
30	PA1	GPIO
36	PA0	GPIO
PORT B		
62	PB15	GPIO
61	PB14	GPIO
59	PB13	GPIO
60	PB12	GPIO
88	PB11	GPIO
66	PB10	GPIO
116	PB7	GPIO
115	PB5	GPIO
113	PB4	GPIO
117	PB3	GPIO
41	PB2	GPIO
50	PB1	GPIO
52	PB0	GPIO
PORT C		
21	PC13	GPIO
49	PC5	GPIO
48	PC4	GPIO
43	PC3	GPIO
29	PC1	GPIO
28	PC0	GPIO
PORT D		
65	PD13	GPIO
64	PD12	GPIO
89	PD11	GPIO
104	PD7	GPIO
122	PD6	GPIO
124	PD5	GPIO
118	PD4	GPIO
119	PD3	GPIO

Table 1.2 - pinout

Number	Name	Function
PORT E		
16	PE6	GPIO
10	PE4	GPIO
11	PE2	GPIO
12	PE5	GPIO
13	PE3	GPIO
PORT G		
17	PG14	GPIO
103	PG13	GPIO
105	PG12	GPIO
5	PG11	GPIO
123	PG10	GPIO
121	PG9	GPIO
112	PG7	GPIO
85	PG6	GPIO
81	PG3	GPIO
107	PG2	GPIO
PORT H		
58	PH7	GPIO
56	PH6	GPIO
35	PH4	GPIO
31	PH3	GPIO
PORT I		
37	PI15	GPIO
25	PI14	GPIO
24	PI13	GPIO
23	PI12	GPIO
22	PI11	GPIO
18	PI8	GPIO
PORT J		
111	PJ15	GPIO
101	PJ14	GPIO
110	PJ13	GPIO
100	PJ12	GPIO
98	PJ11	GPIO
97	PJ10	GPIO
94	PJ9	GPIO
91	PJ8	GPIO
93	PJ7	GPIO
92	PJ6	GPIO
67	PJ5	GPIO
55	PJ4	GPIO
54	PJ3	GPIO
53	PJ2	GPIO
40	PJ1	GPIO
42	PJ0	GPIO

Table 1.3 - pinout

Number	Name	Function
PORT K		
19	PK7	GPIO
8	PK6	GPIO
125	PK5	GPIO
7	PK4	GPIO
6	PK3	GPIO
106	PK2	GPIO
80	PK1	GPIO
99	PK0	GPIO
SYSTEM		
4	BOOT0	Boot mode selector
26	nRST	MCU nRST pin
72	NC	NO CONNECT
73		
75		
76		
69		
70		
POWER		
1	+5V_IN	+5V INPUT
2		
3		
14	VBAT	VBAT INPUT
74	GND	GROUND
33		
39		
45		
51		
57		
77		
71		
68		
9		
15		
102		
27		
20		
108		
84		
63		
120		
90		
114		
126		
127		
128		
96		

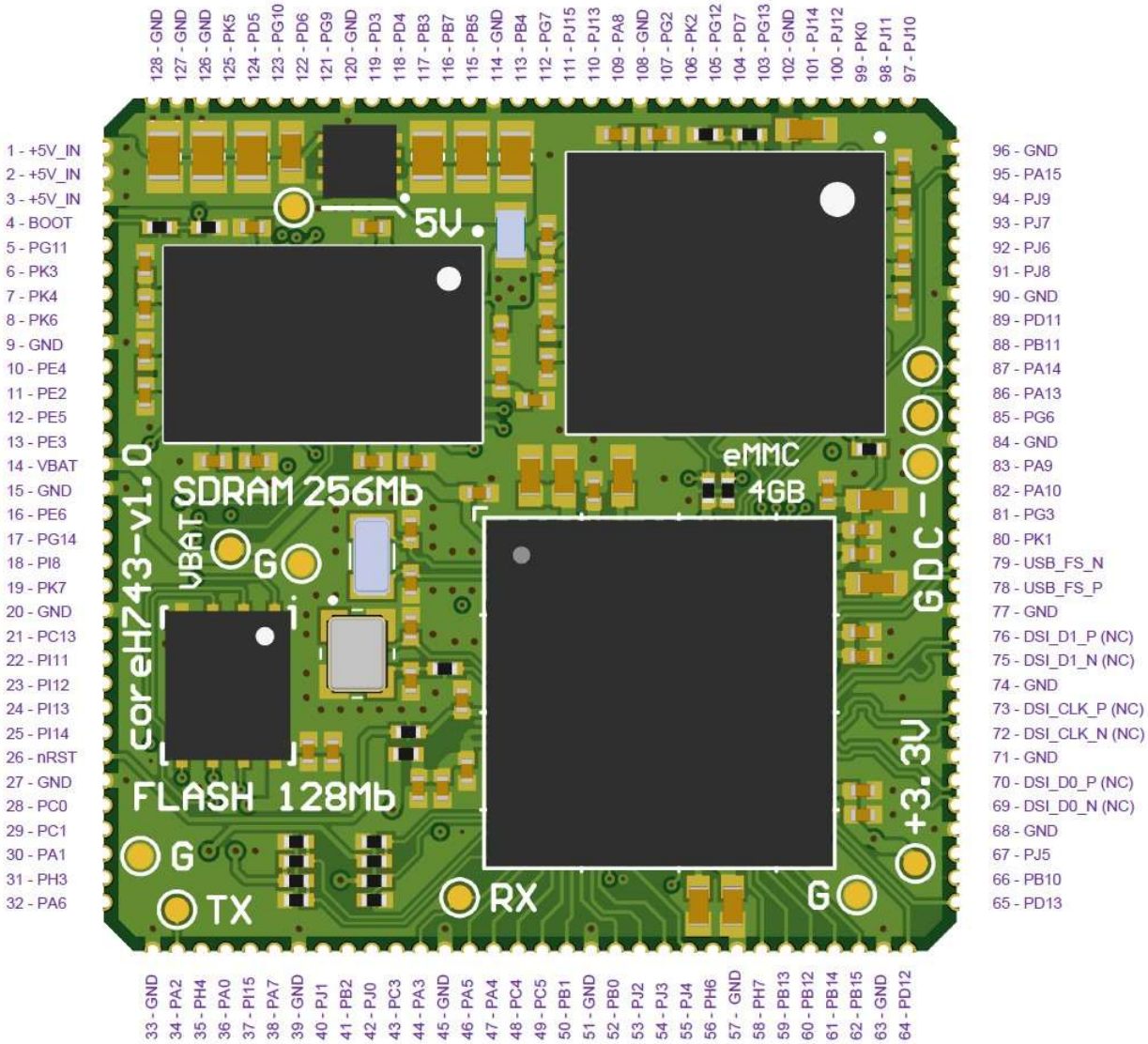

Figure 2. – Module pinout

Schematic

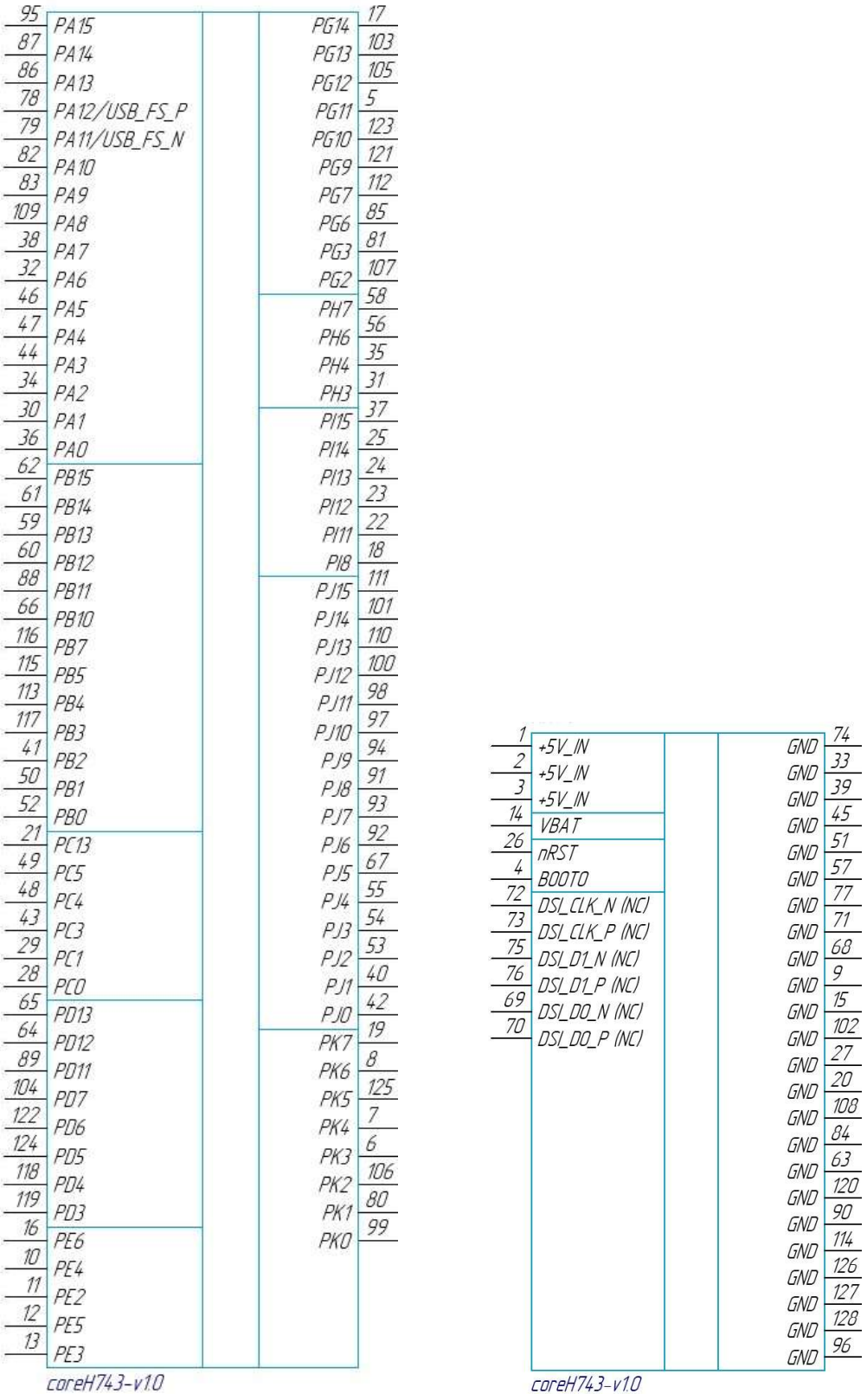

Figure 3. – Module sch view

Electrical characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Supply voltage	5V_IN	4	5.0	6.0	V	
Supply current			100		mA	Depends on project and MCU software
Operational temperature		-40	+25	+85	℃	

Internal module structure

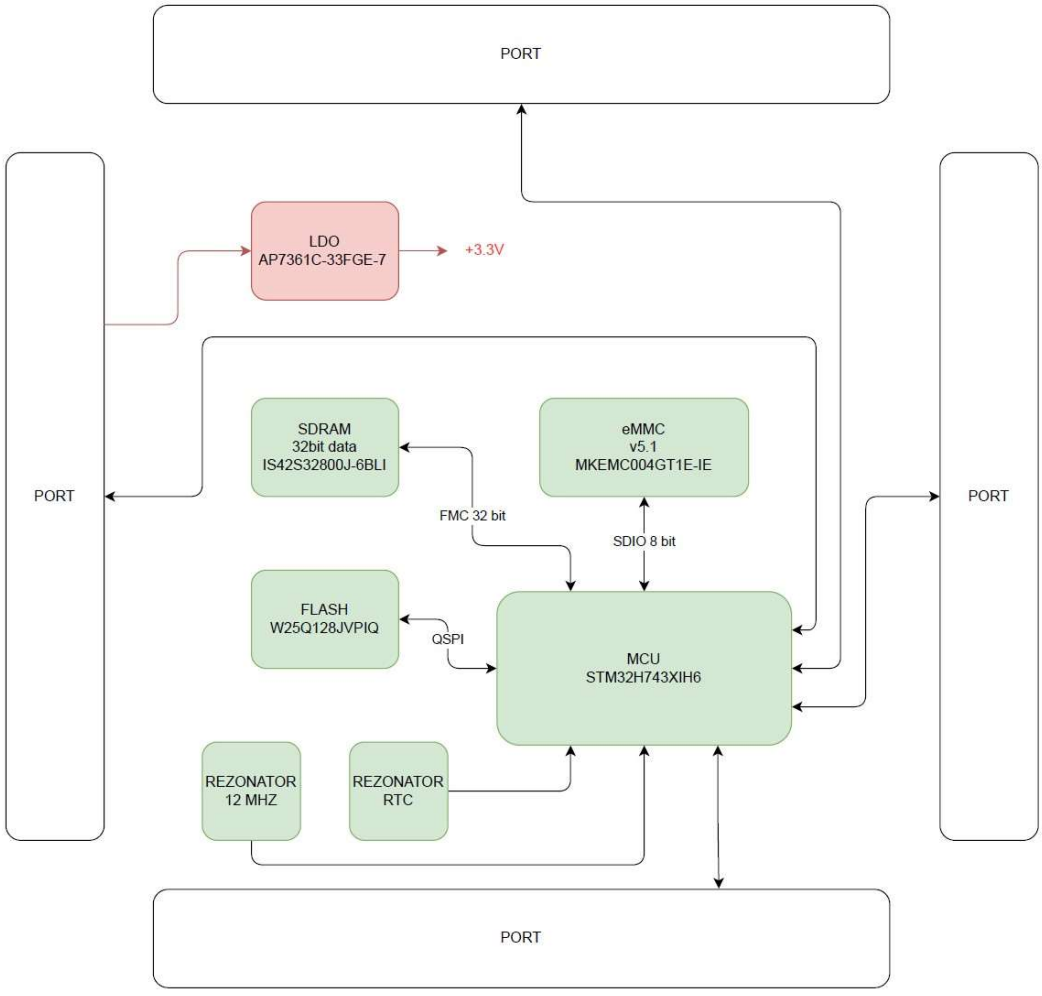

Figure 4. – Module structure

Test contacts

You can program a module on the main board with your JTAG/SWD connector. Or you may program a module with special debug points. Points are below on figure.

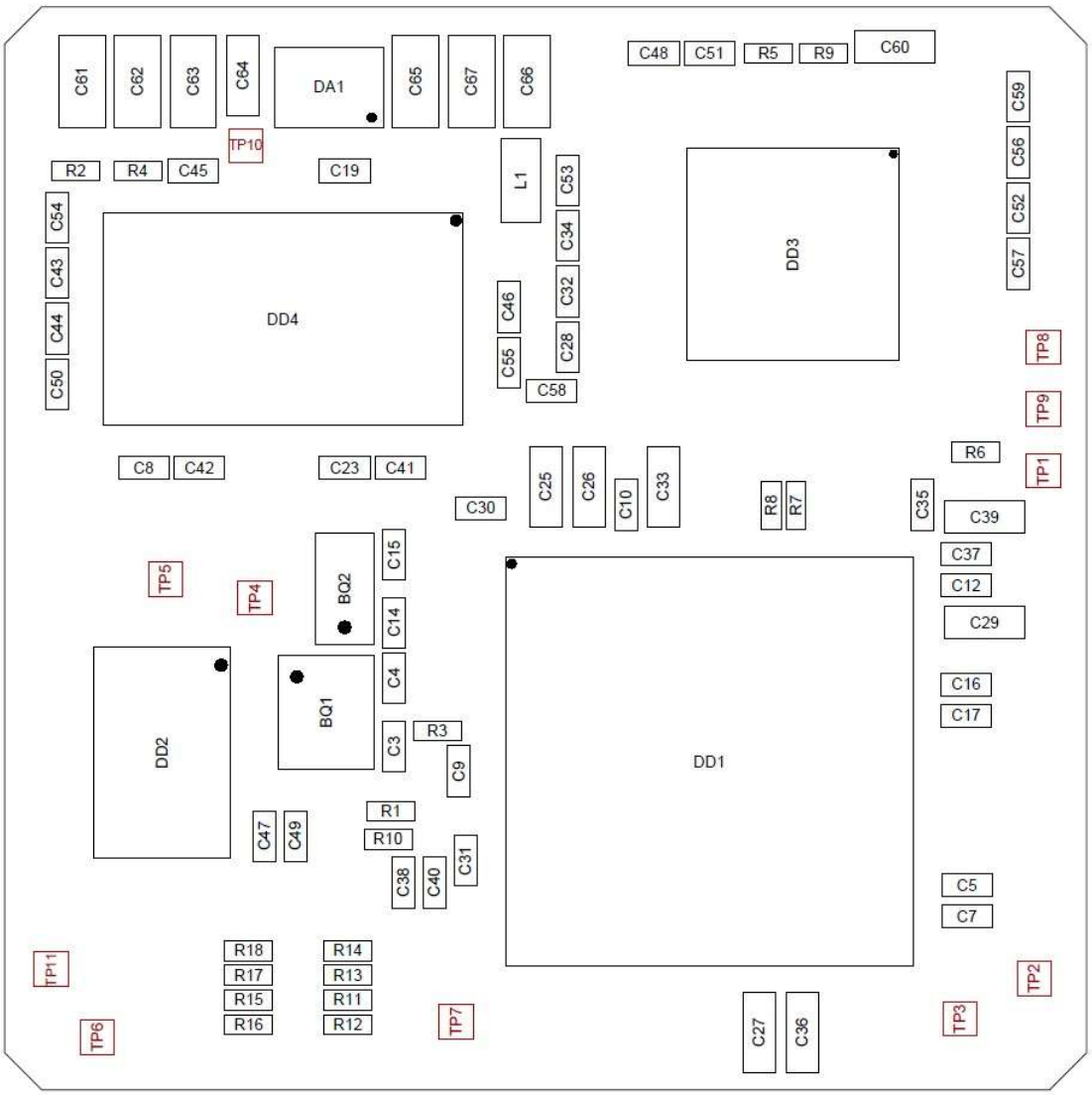

Figure 5. – Test points.

TP designator	Net name
TP1	GND
TP2	+3.3VD
TP3	GND
TP4	GND
TP5	VBAT
TP6	PA2/USART2_TX
TP7	PA3/ USART2_RX
TP8	PA14/SWCLK
TP9	PA13/SWDIO
TP10	+5V_SYS

Dimensions

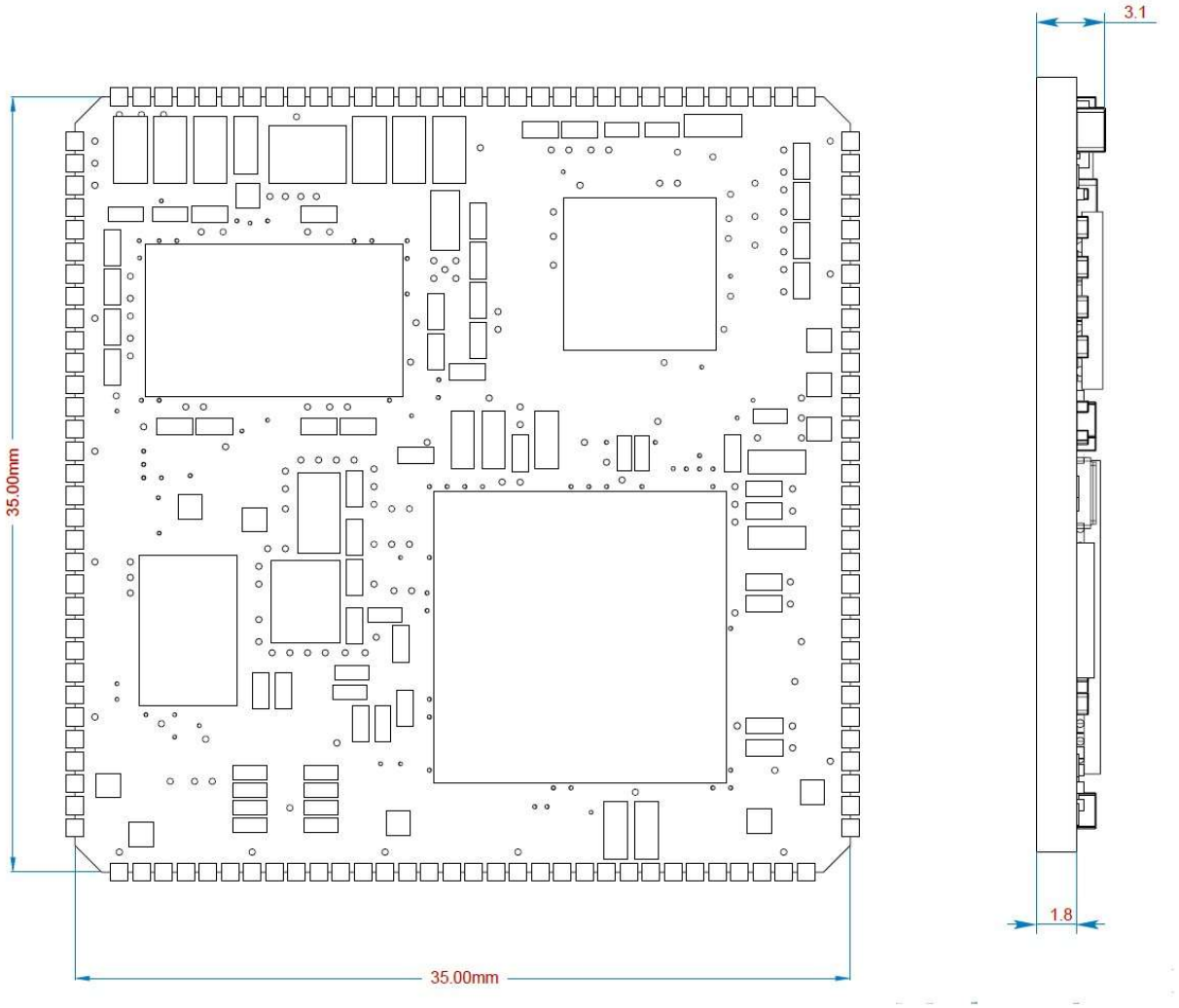

Figure 5. – Module dimensions, mm.

Recommended footprint

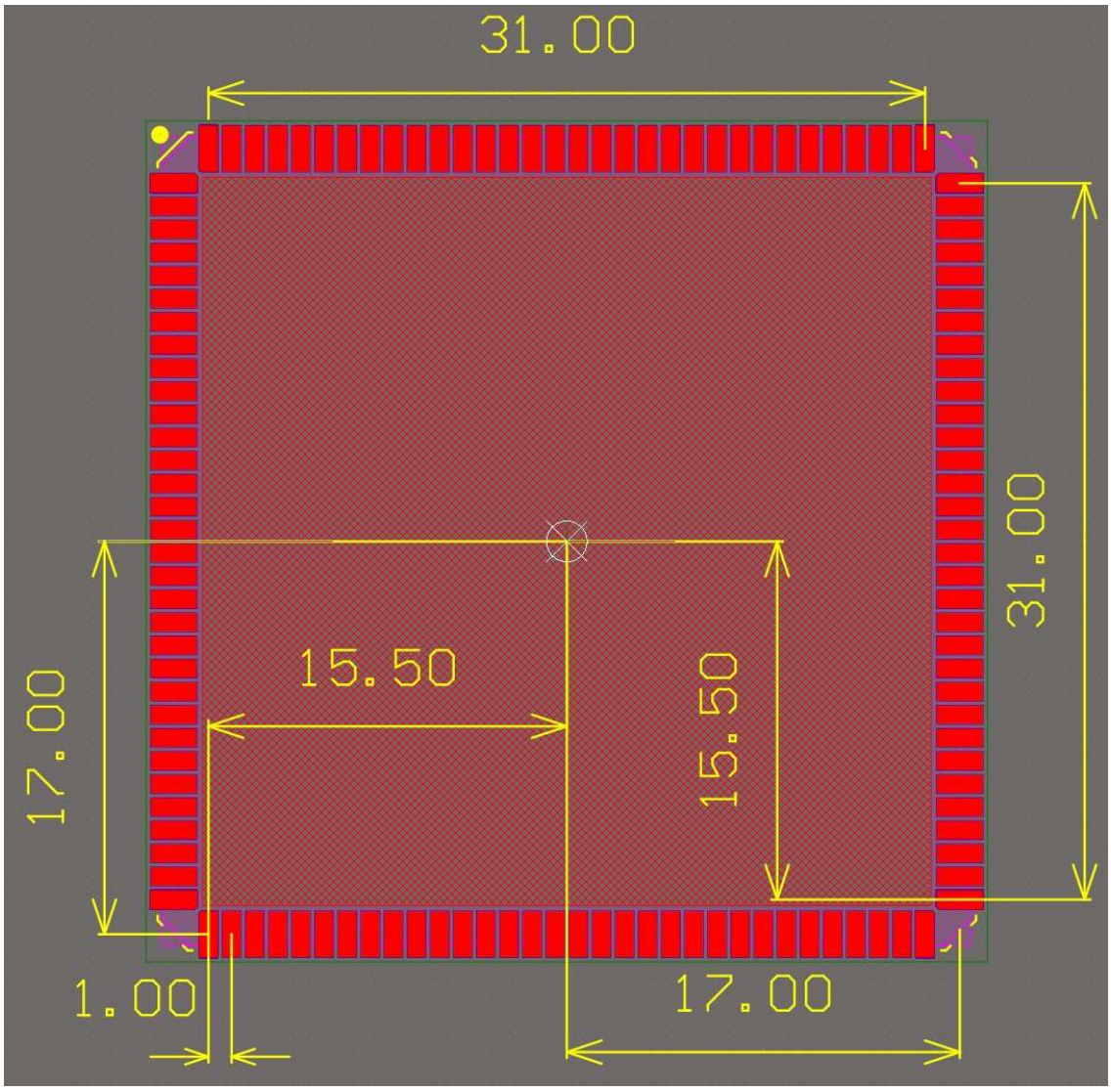

Figure 6. – Recommended footprint, mm.

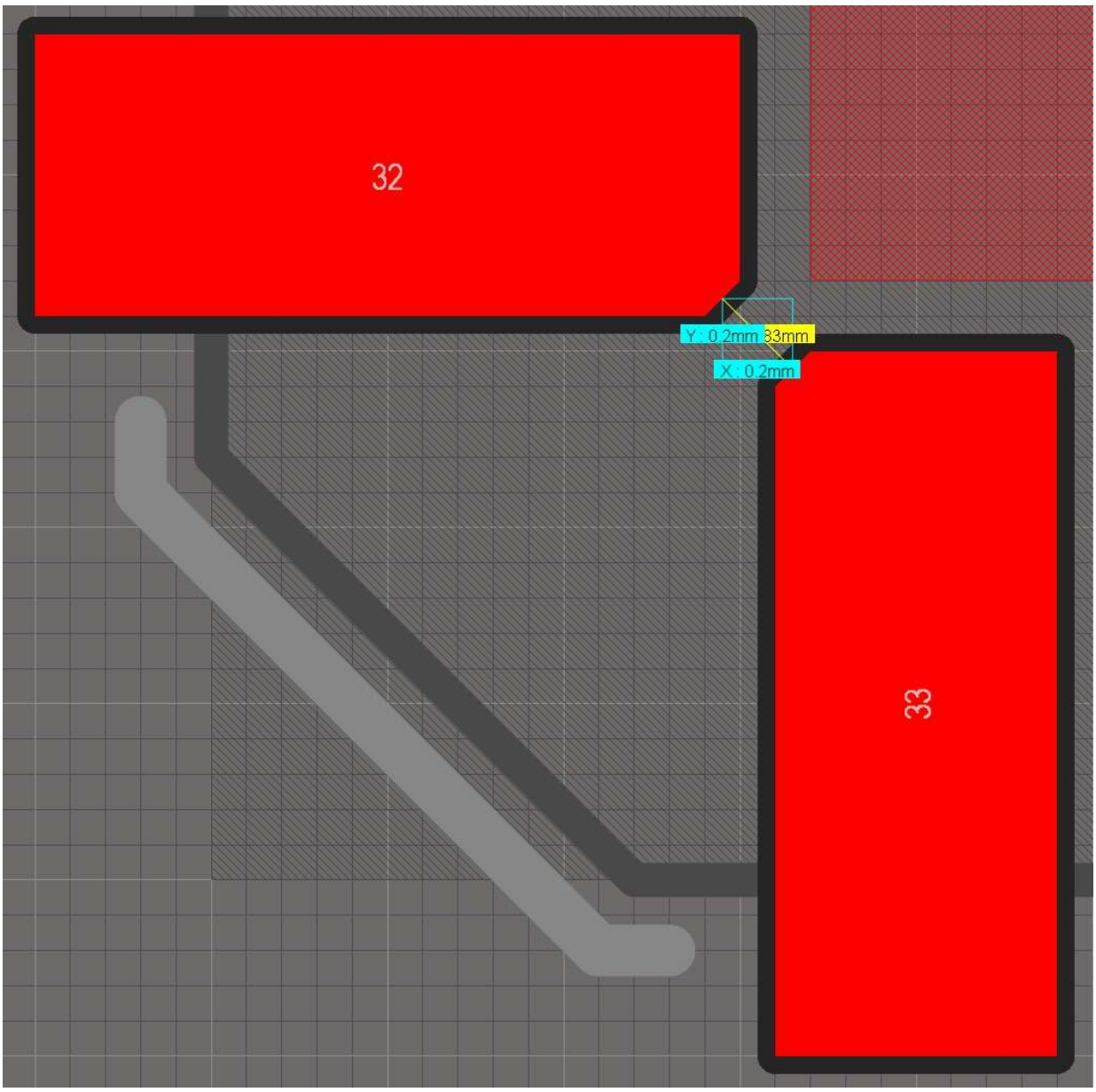

Figure 7. – Recommended footprint, mm. The gap between the corner pads

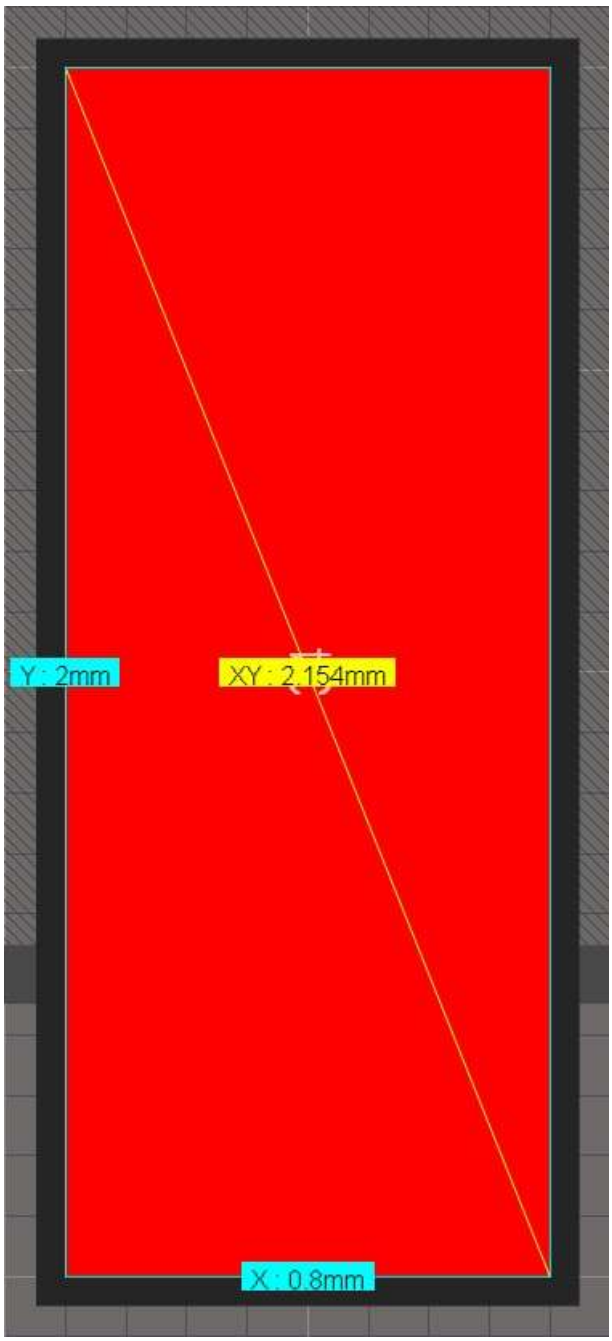

Figure 8. – Recommended footprint, mm. Pad dimensions.

Recommended keepouts

To avoid short circuit between tracks on the bot side of the module and main board you must do this keepout zone.

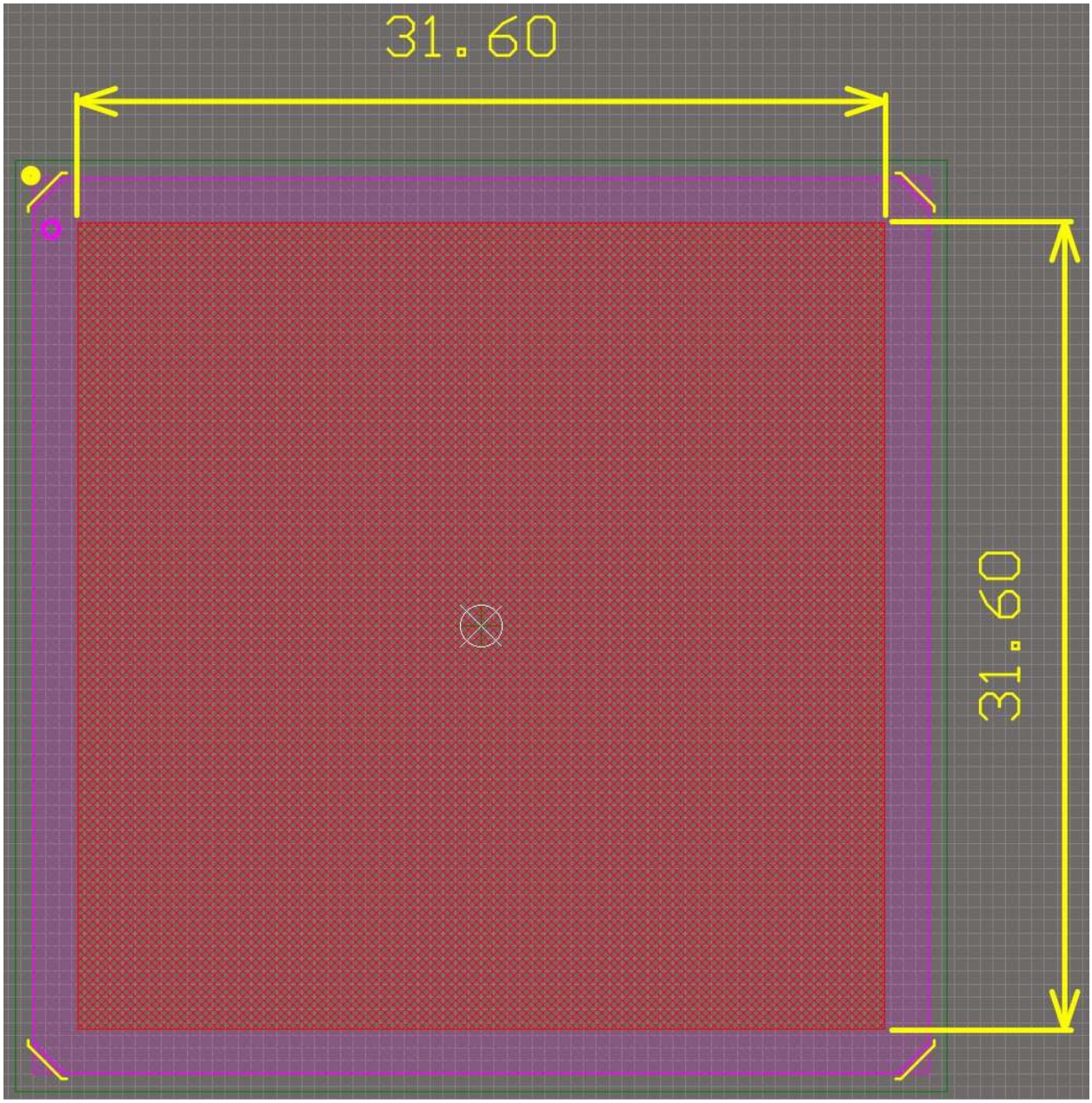

Figure 9. – Recommended keepout zone, mm.

The module has capacitors on the bottom and you must make a cut off board zone in the main board.

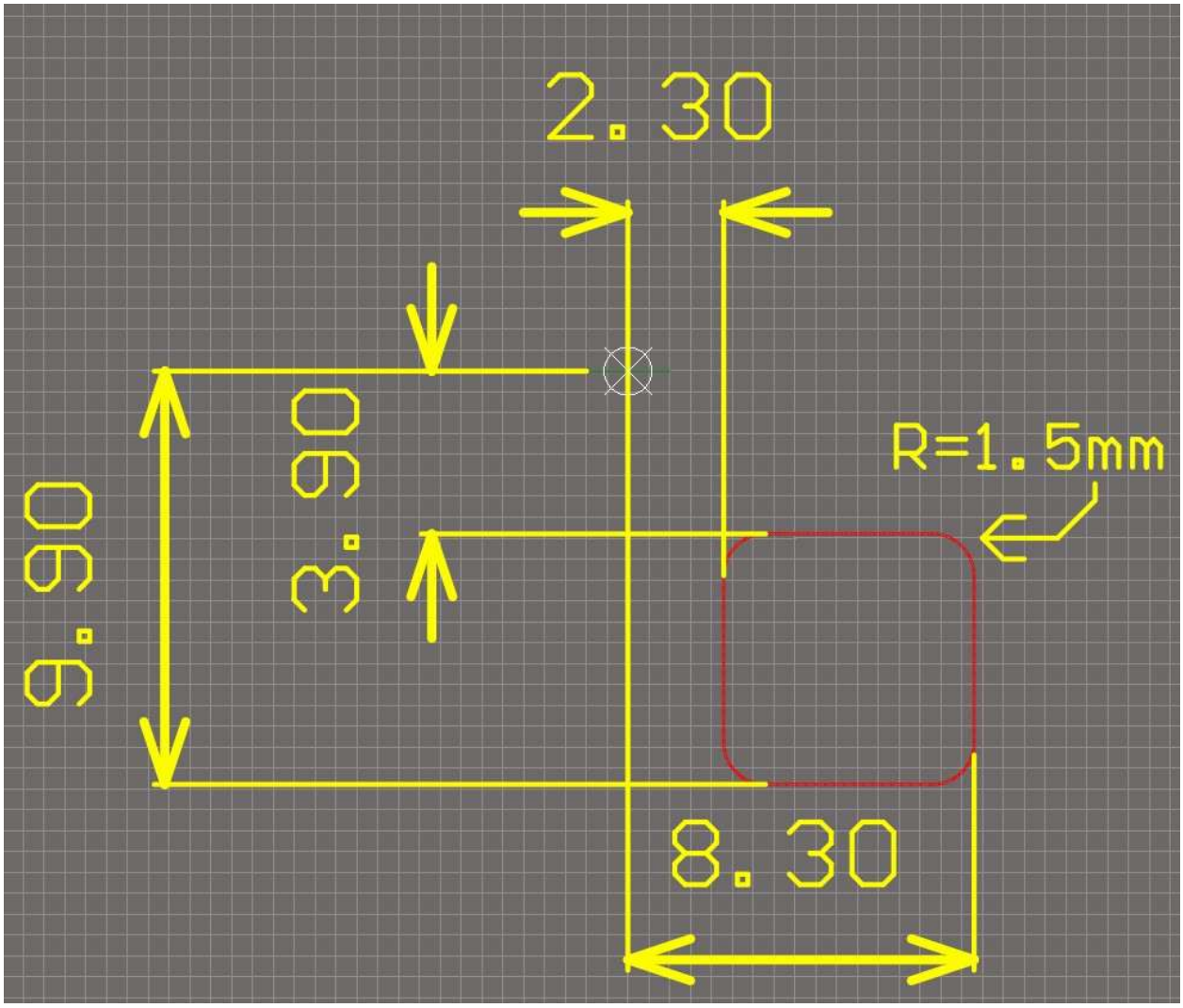

Figure 10. – Cut off board zone (red on the pic), mm.

Version list

version	date	notes
1.0	05.01.2026	First release