UFC23_SH

Shield User Guide

UFC23 _SH User Guide

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Content Guide

1 Introduction

ScioSense ultrasonic flow converters are well established in the market as leading solutions as frontends for time-of-flight ultrasonic flow meters. For those users that design their system based on micro controllers from ST, NXP or Renesas. Those boards can easily be combined with both, the ST development kits and the ScioSense evaluation kits in combination with the UfcEvaluationSoftware package.

The boards have two rows of connectors following the ARDUINO® Uno V3 connectivity support or Arduino R3 Shield. They fit into the STM32 Nucleo-64 development board and the STM32 Nucleo-144 development board. In addition they have a connector to our Picoprog Lite interface. Besides the UFC23 shield we offer shields are for TDC-GP30YA-F01 (with flow firmware), AS6031 and AS6040.

Figure 1: UFC23_SH Shield

1.1 Ordering Code

Table 1: Ordering Code

Ordering code	Part Number	Description
UFC23 _SH	221080005	UFC23 Shield

2 Hardware

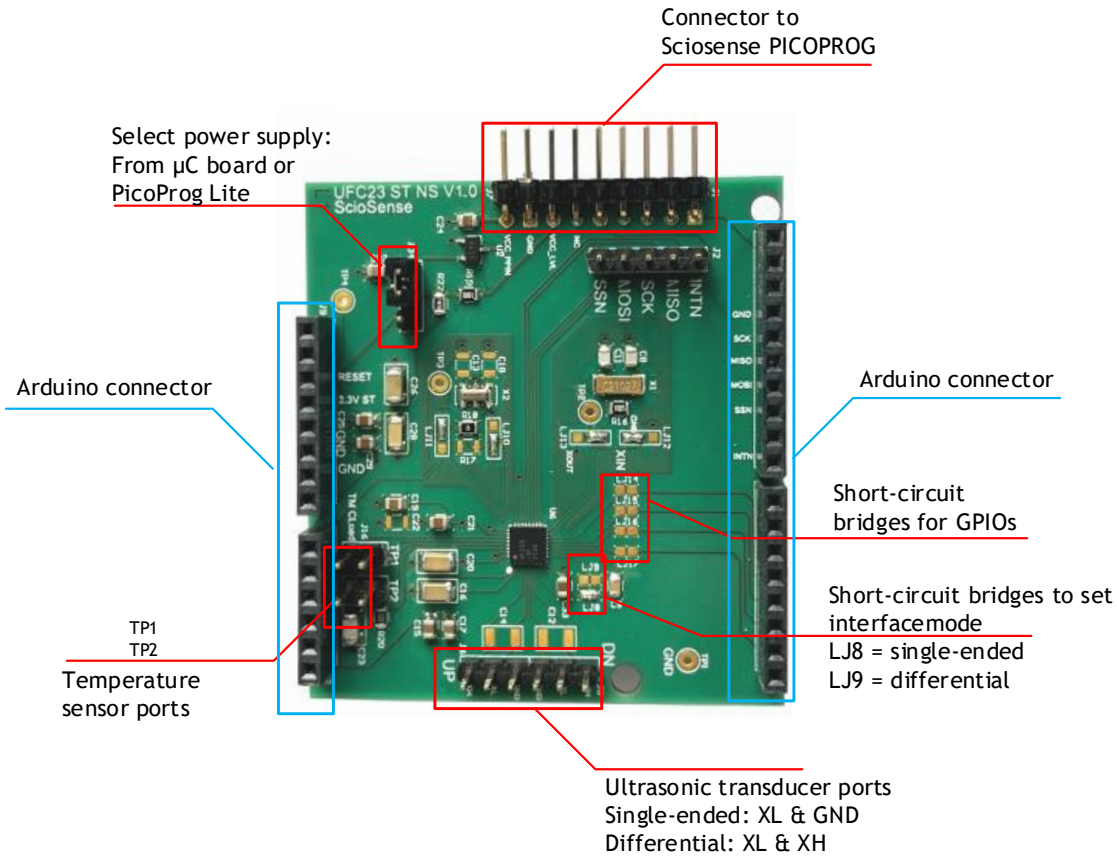


Figure 2: UFC23_SH Shield topology

2.1 Picoprog Lite Interface

The shield has a 9-pin connector to PICOPROG with SPI interface, interrupt, level shifter feedback, power.

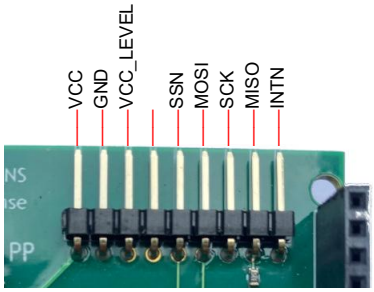


Figure 3: Power options

2.2 Schematics

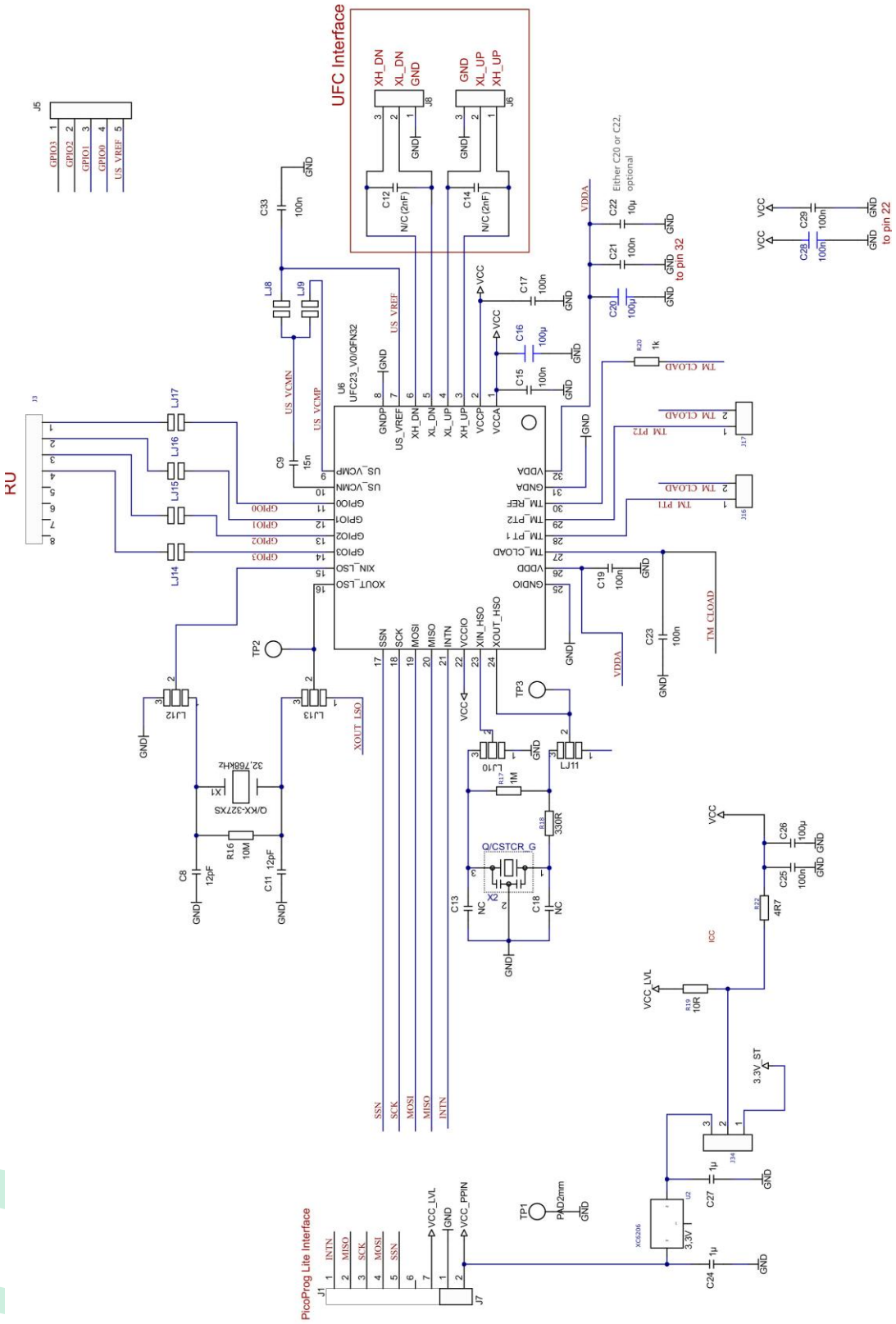


Figure 4: UFC23_SH Shield schematic

2.3 Layout

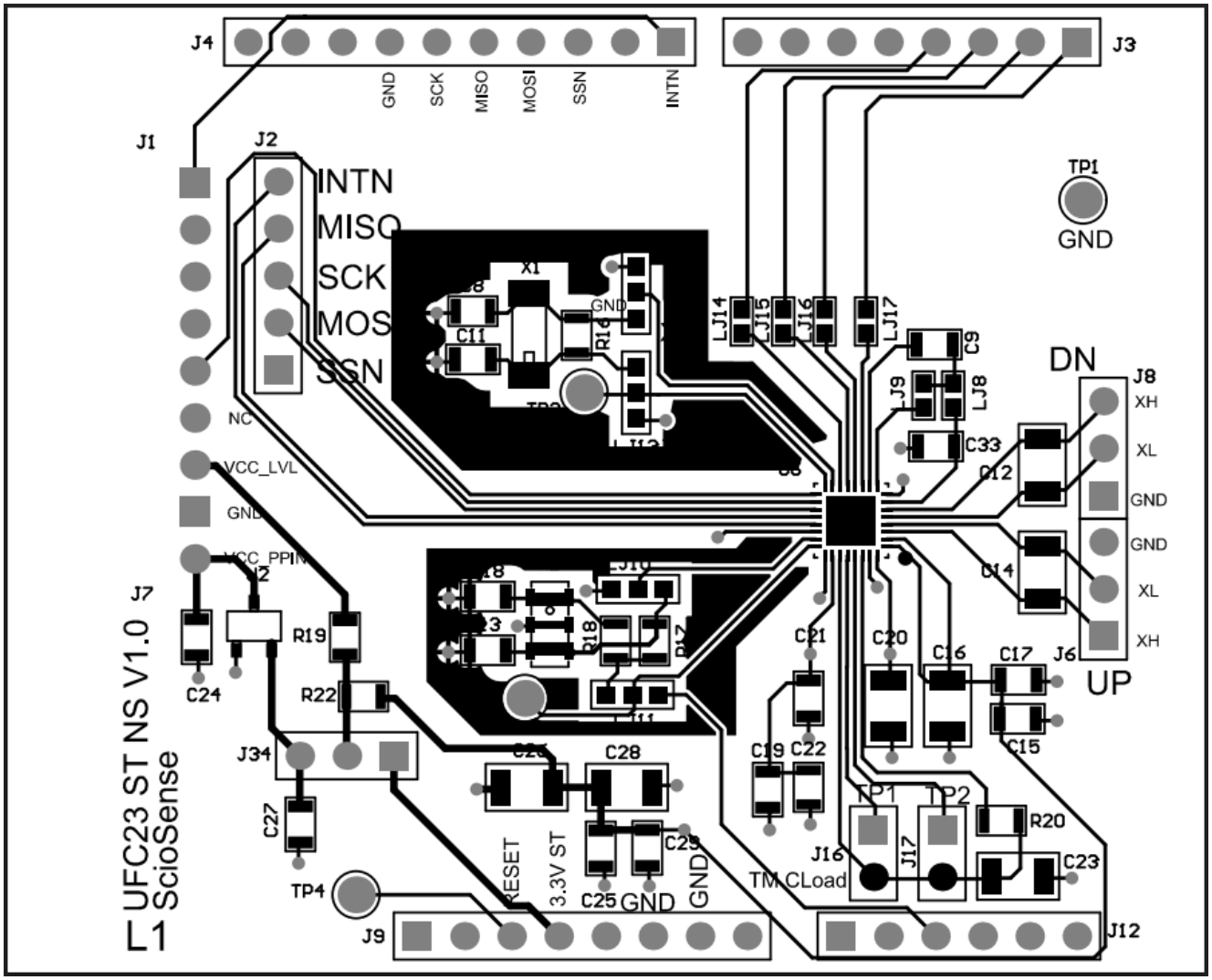


Figure 5: UFC23-QF_DK_RB schematics

2.4 Bill of Material

Table 2: Bill of materials for UFC23-QF_DK_RB V2.0

Quantity	Designator	Value	Comment	Footprint
1	C8	12pF		C805
1	C9	10n		C805
1	C11			C805
2	C13, C18, C22	N.C.		C805
7	C15, C17, C19, C21, C25, C29, C33	100n		C805
1	C22	10µ		C805

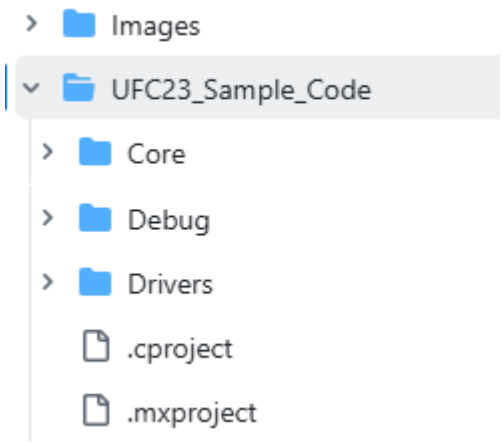
2	C24, C27	1µ	C805	C805
1	C12, C14	N.C.(2nF)	C603	C1206
1	C16, C20, C26	100µ	C603	C1206
2	C28	100n		C1206
2	C23	100n		C1206 C0G
3	LJ8, LJ9, LJ14, LJ15, LJ16, LJ17			L_JUMPER
1	LJ10, LJ11, LJ12, LJ13			L_JUMPER_3
1	TP1, TP2, TP3, TP4			PAD2mm
6	X2	?		Q/CSTCR_G
4	X1	32,768kHz		Q/KX-327XS
4	R16	10M		R805
1	R17	N.C.		R805
1	R18	0R		R805
1	R19	10R		R805
1	R20	1k		R805
1	R22	4R7		R805
1	J16, J17			ST/254_2
1	J7			ST/254_2_90°
1	J34			ST/254_3
2	J6, J8			ST/254_3_1
1	J2			ST/254_5_1R
1	J12			ST/254_6_1R
2	J1			ST/254_7_1R_90°
1	J3, J9			ST/254_8_1R
1	J4			ST/254_10_1R
1	U6			UFC23_V0/QFN32

2	U2	3,3V		XC6206

3 Software

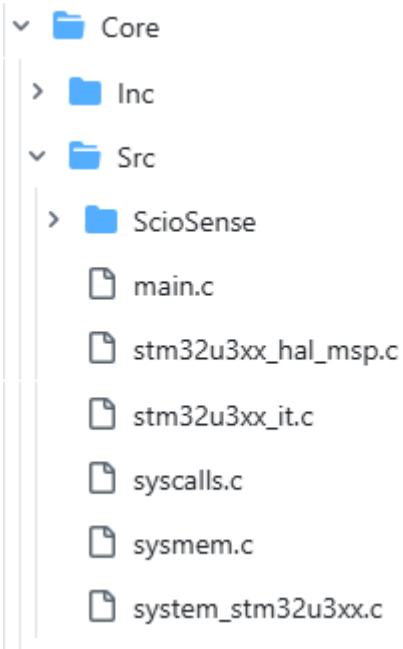
ScioSense provides a common sample software package for UFC23 on Github

https://github.com/sciosense/ufc23-stm32

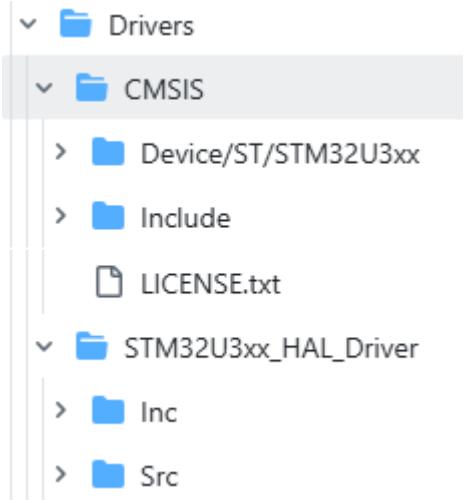


Package Details

Core\



Drivers\



The main program is found in the \Core\Src folder.

4 RoHS Compliance & ScioSense Green Statement

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6 Revision Information

Table 3: Revision history

Revision	Date	Comment	Page
			All

Note(s) and/or Footnote(s):

1. Page and figure numbers for the previous version may differ from page and figure numbers in the current revision.
2. Correction of typographical errors is not explicitly mentioned.

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