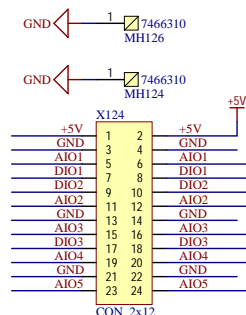


The uController is split into 5 different component parts (A to E).  
Parts A, C, D and E are located on Sheet 2, and Part B is located on Sheet 3.

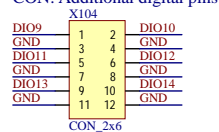
Steckplatz Controlboard Hilfsgeometrie X124/X126

X-100

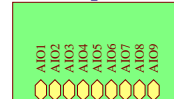
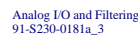
CON: Power Board



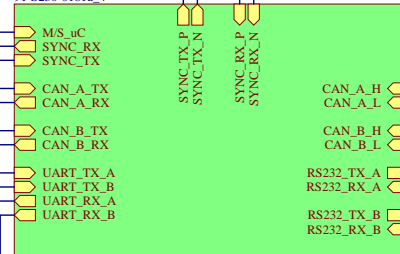
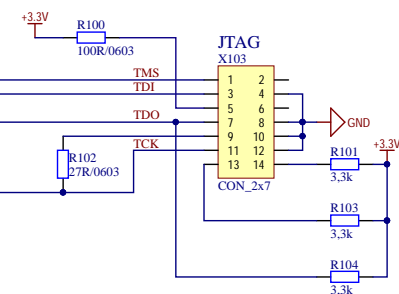
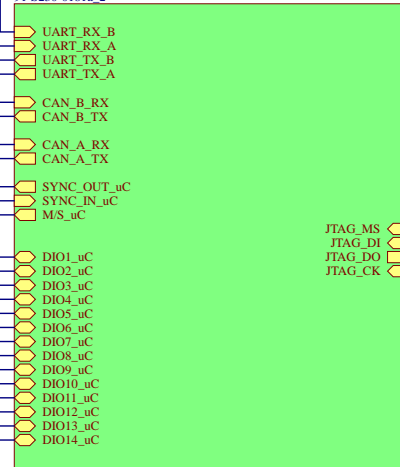
CON: Additional digital pins




▲ DIO extention pins can be used later on for syncing inverters for a larger power output.



Comms Interfaces and Sync  
91-S230-0181a 4

Digital I/O, Comms and State Indication  
91-S230-0181a 2

Rev.	Changes	Date	Name	Checked by	Name KAMO	(signature)	
a	initial drawing	11.11.19	GKKE		Date ?		
				BST	91-P600-0314a	Title:	
				UNB	91-P600-0313a	TS-Controlboard Sorter	
						Function: Power Supply	
				IPT Technology GmbH Im Martelacker 14 79588 Efringen-Kirchen 		Schematic Number <b>91-S230-0181a</b>	page 1  of 4

A

B

C

D

E

F

A

B

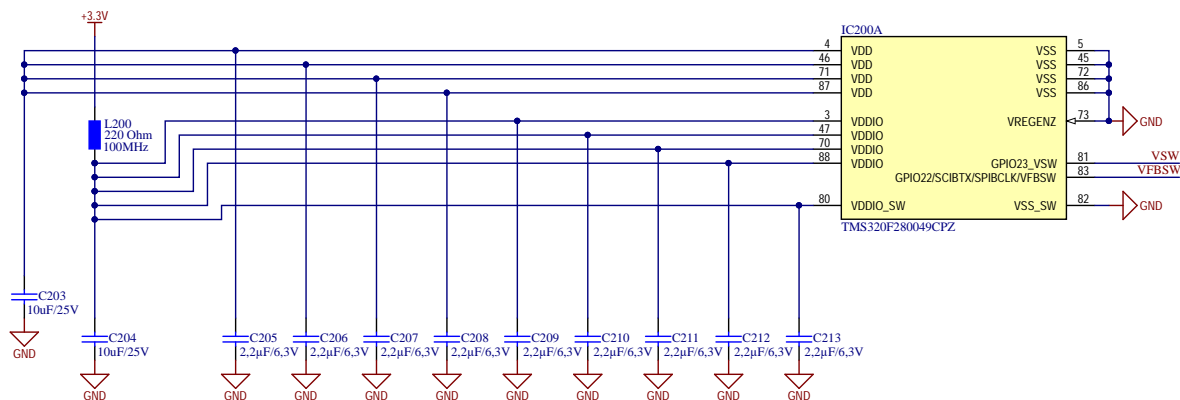
C

D

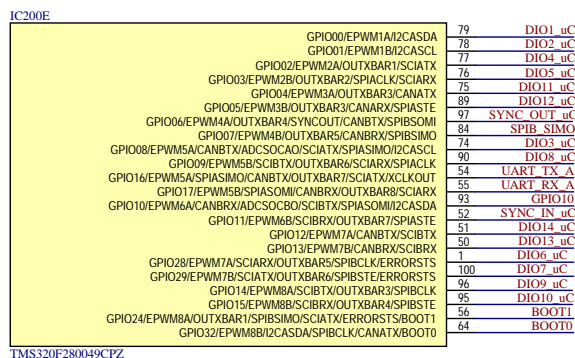
E

F

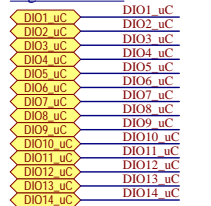
### +3.3-V AUX Supply and uC Power Supply



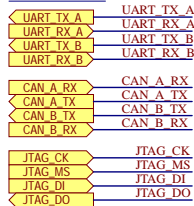
### Clock, Digital IO and Comms



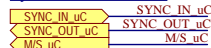
### Digital IO Ports



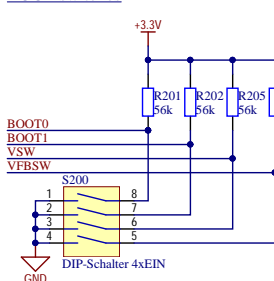
### Comms Ports



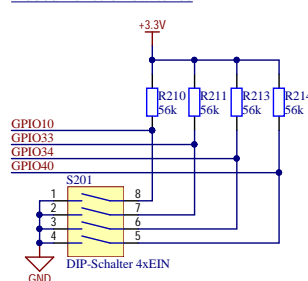
### Synchronisation Ports



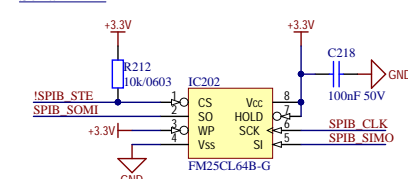
### BOOT switches



### Added Function switches



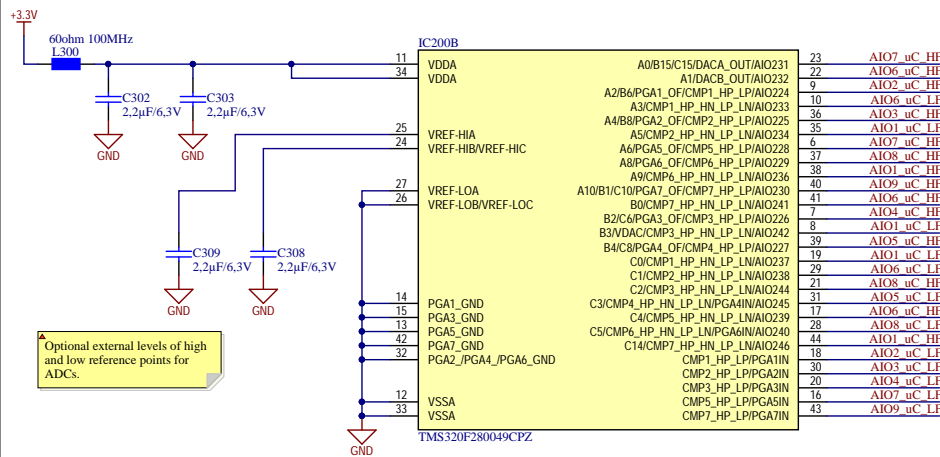
### Serial RAM



Rev.	Changes	Date	Name	Checked by	Name	KAMO	(Signature)
a	initial drawing	11.11.19	GKKE		Date	?	
				BST	91-P600-0314a		Title:
				UNB	91-P600-0313a		TS-Controlboard Sorter
							Function: Power Supply
							Schematic Number
							91-S230-0181a
							page 2
							of 4

## Power Supply and Analog IO

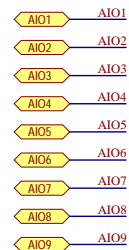
7/9 AIO\_uC signals are connected to the inputs of PGAs for signal amplification be feasible when needed.  
All AIO\_uC signals are connected to the internal comparators for fault triggering.  
All AIO\_uC signals are connected to the ADCs from where they can be selected as a control parameter. Each AIO\_uC signal sits on at least two different ADCs in order for simultaneous sampling to be feasible for all possible combinations.  
Pin allocation can be found in the file "Board tasks - v3", sheet "AIO3", under the folder "design support files" in the schematic's local folder.



Optional external levels of high and low reference points for ADCs.

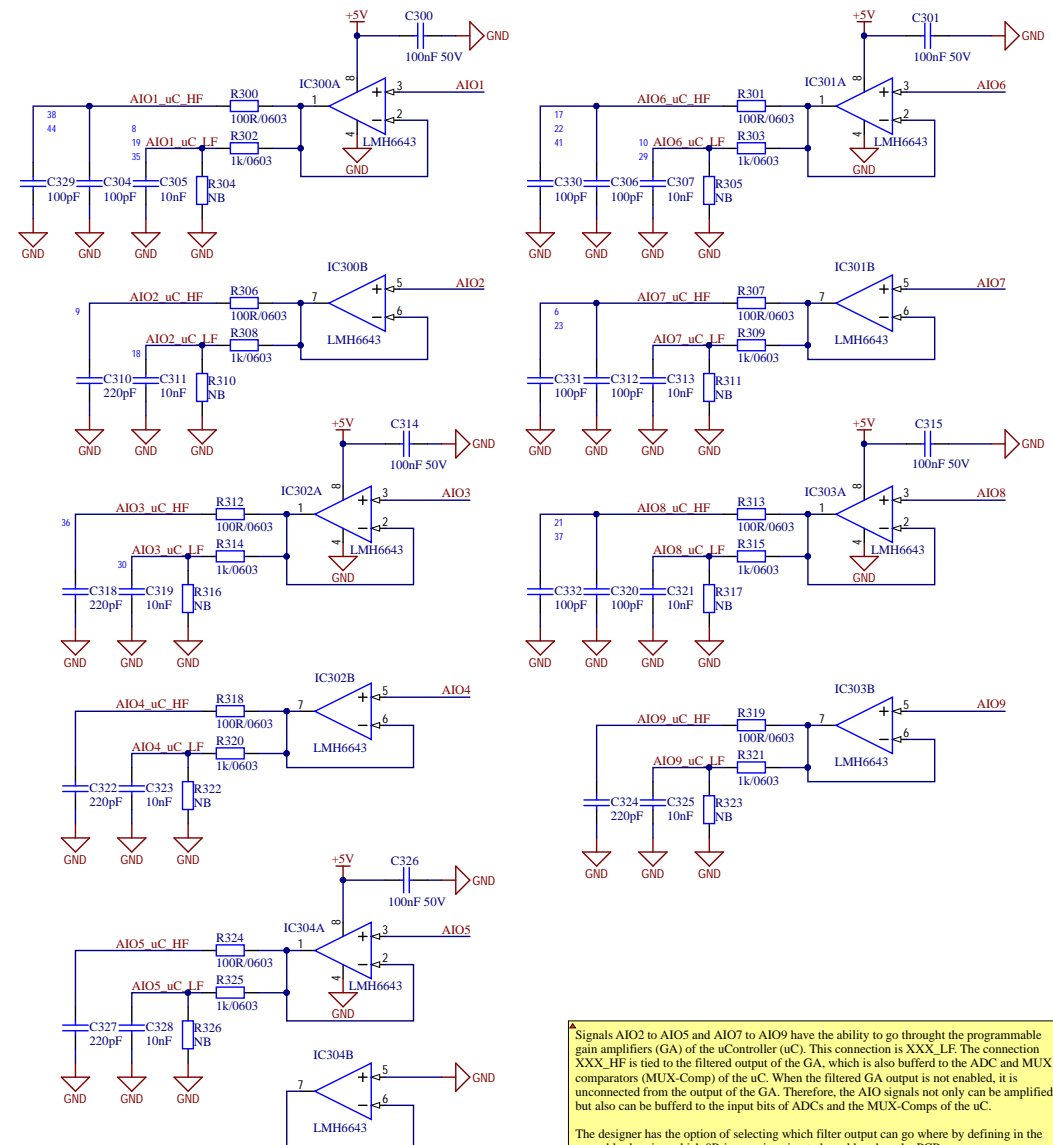
Since all output signals from PGAs go into the ADCs for sampling, the presence of a resistor across the signal to ground will reduce the signal amplitude such that the PGA would only function as a buffer. This is an optional functionality.

### Analog Sheet I/O ports



### Analog signal filtering and distribution


The analog signals can have a switching or a constant amplitude. Therefore, the required filtering will need to differ from one signal to the other. Hence the same signal passes through a high frequency (HF) filter and a low frequency (LF) filter. During the assembly of the board, instructions will be given as to which 0R jumper is to be soldered in order to provide the correct filtering and the correct connection to the uController (uC).

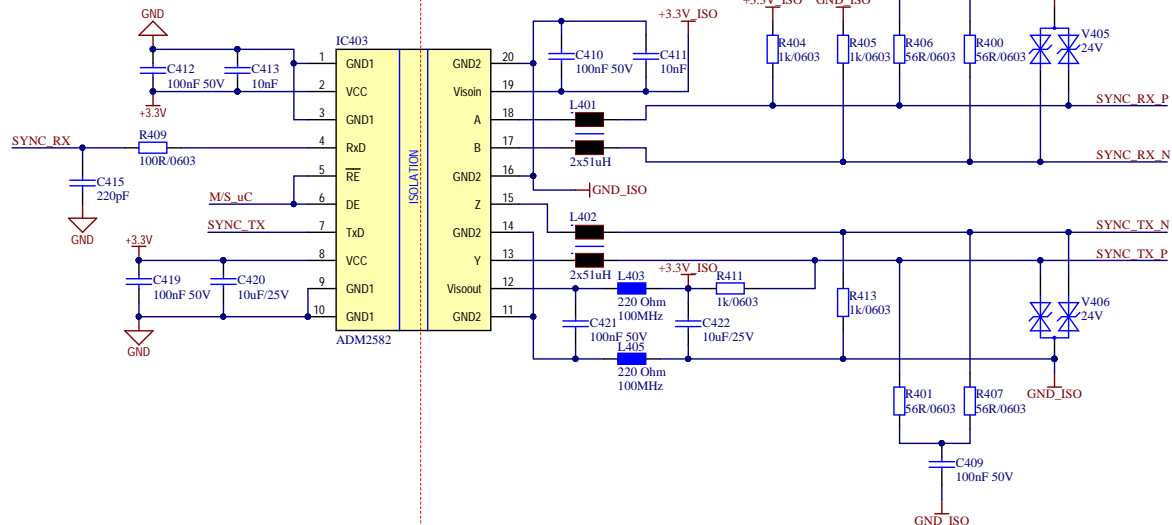
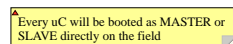


Signals AIO2 to AIO5 and AIO7 to AIO9 have the ability to go through the programmable gain amplifiers (GA) of the uController (uC). This connection is XXX\_LF. The connection XXX\_HF is tied to the filtered output of the GA, which is also buffered to the ADC and MUX comparators (MUX-Comp) of the uC. When the filtered GA output is not enabled, it is unconnected from the output of the GA. Therefore, the AIO signals not only can be amplified but also can be buffered to the input bits of ADCs and the MUX-Comps of the uC.

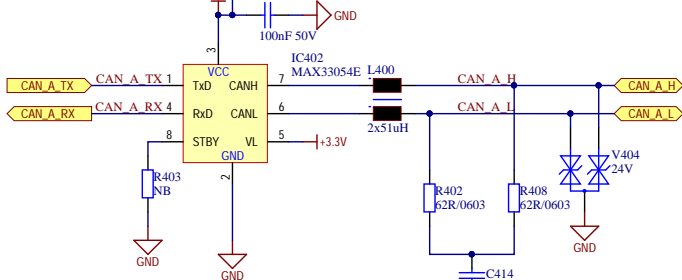
The designer has the option of selecting which filter output can go where by defining in the assembly drawing which OR jumper is going to be soldered on the PCB.

Signals AIO1 and AIO6 do not have the option of amplification, however they are present in almost all the MUX-Comps and ADCs.

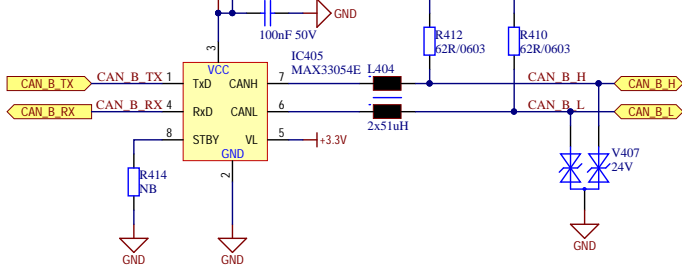
Rev.	Changes	Date	Name	Checked by	Name	KAMO	(signature)	
a	initial drawing	11.11.19	GKKE		Date	?		
				BST	91-P600-0314a	Title: TS-Controlboard Sorter		
				UNB	91-P600-0313a			
						Function: Power Supply		
				IPT Technology GmbH Im Martelacker 14 79588 Efringen-Kirchen		Schematic Number <b>91-S230-0181a</b>		page 3 of 4



## CAN\_A Interface



## CAN\_B Interface



Rev.	Changes	Date	Name	Checked by	Name	KAMO	(signature)	
a	initial drawing	11.11.19	GKKE		Date	?		
				BST	91-P600-0314a	Title: TS-Controlboard Sorter		
				UNB	91-P600-0313a			
						Function: Power Supply		
				IPT Technology GmbH Im Martelacker 14 79588 Efringen-Kirchen		Schematic Number <b>91-S230-0181a</b>		page 4
								of 4