J21 header schematic:

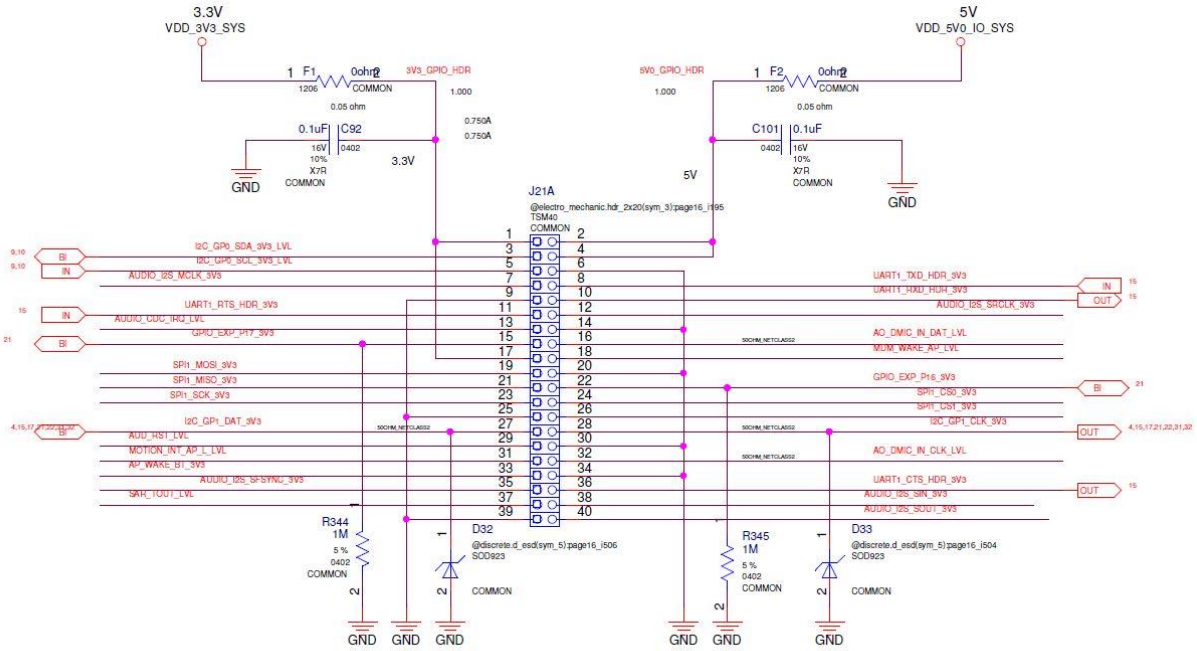


Figure from orcade schematics document.

J26 header schematic:

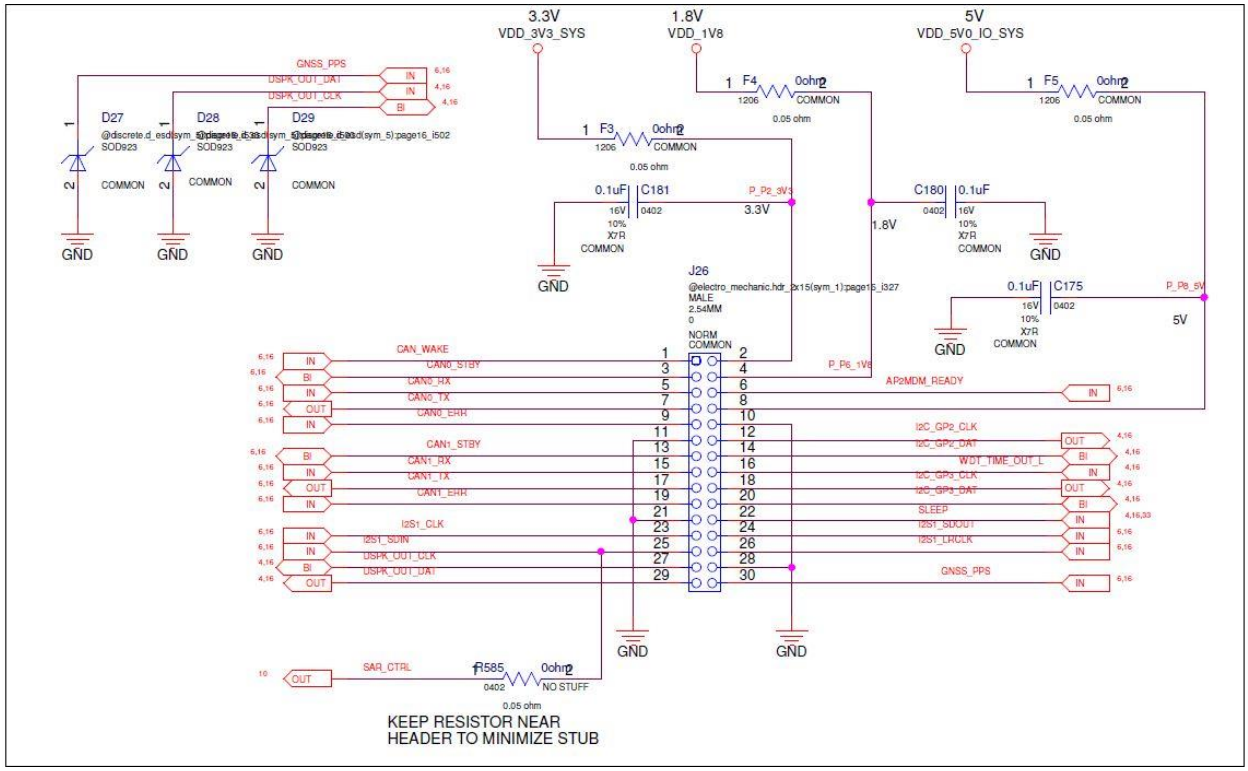


Figure from orcade schematics document.

Steps to get the actual GPIO number:

1)get the pin name from the schematic(j21 and j26 figures).

2)search for the pin name in the Jetson-TX2-Generic-Customer-Pinmux-Template document.

3)get the name in the QA column which is the customer usage.

4)use this name to know the group name, pin number

Ex:name in QA coloumn:GPIO3_PAA.06 ,group name:AA,Pin value =6

5)a-use the tegra186-gpio.h file to know whether the group is main or aon.

b-and to know the port number from the group name.

Ex: #define TEGRA_AON_GPIO_PORT_AA 5

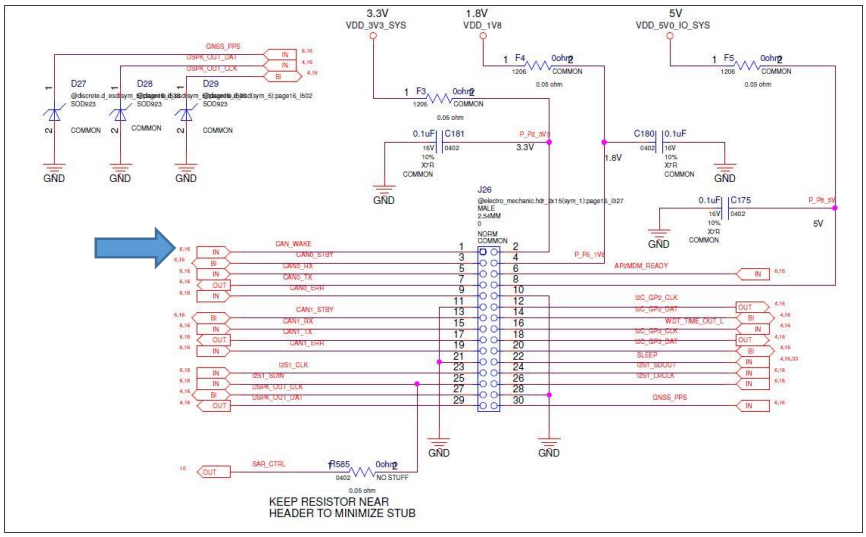
Group:aon ,and port number=5

6)calculate the gpio number from the formula: GPIO export value =offset+ (port number* 8 + pin value)

Where offset is 320 if the group is main, and offset is 256 if the group is aon.

Tutorial to get the export gpio number of CAN_WAKE signal in j26 header :

Step 1:from j26 header schematic,the blue arrow points to the physical place of the pin on the board.



Step 2: search for the pin name in the Jetson-TX2-Generic-Customer-Pinmux-Template document.

	A	B	C	W	X	Z	AB	AC	AQ	AR	AS	AT
210	I2C_GP0_DAT	D15	GPIO_SEN9	vddio_ao		DD	100k	z	I2C2_DAT	Bidirectional		
211	TOUCH_CLK	B24	TOUCH_CLK	vddio_ao		ST	100k	pd	TOUCH_CLK	Output		
212	**AO_HV (3.3V Capable)**											
213	CAN1_TX	C18	CAN1_DOUT	vddio_ao_hv	wake65	CZ	20K	pu	CAN1_DOUT	Output		No
214	CAN1_RX	D17	CAN1_DIN	vddio_ao_hv	wake42	CZ	20K	pu	CAN1_DIN	Input	Int PU	No
215	CAN0_TX	D19	CAN0_DOUT	vddio_ao_hv	wake66	CZ	20K	pu	CAN0_DOUT	Output		No
216	CAN0_RX	D18	CAN0_DIN	vddio_ao_hv	wake43	CZ	20K	pu	CAN0_DIN	Input	Int PU	No
217	AO_DMIC_IN_DAT	D16	CAN_GPIO0	vddio_ao_hv	wake44	CZ	20K	pd	DMIC5_DAT	Input		No
218	AO_DMIC_IN_CLK	E16	CAN_GPIO1	vddio_ao_hv	wake45	CZ	20K	pd	DMIC5_CLK	Output		No
219	GPIO9_MOTION_INT	G14	CAN_GPIO2	vddio_ao_hv	wake46	CZ	20K	z	GPIO3_PAA.02	Input	Int PU	Yes
220	CAN1_ERR	C19	CAN_GPIO3	vddio_ao_hv	wake47	CZ	20K	z	GPIO3_PAA.03	Bidirectional		Yes
221	CAN_WAKE	C20	CAN_GPIO4	vddio_ao_hv	wake48	CZ	20K	z	GPIO3_PAA.04	Input	Int PU	Yes
222	CAN0_ERR	E18	CAN_GPIO5	vddio_ao_hv	wake49	CZ	20K	z	GPIO3_PAA.05	Bidirectional		Yes
223	CAN1_STBY	C17	CAN_GPIO6	vddio_ao_hv	wake50	CZ	20K	pd	GPIO3_PAA.06	Output	Drive 0	No
224	GPIO6_TOUCH_INT	B25	CAN_GPIO7	vddio_ao_hv	wake51	CZ	20K	1	GPIO3_PAA.07	Input		Yes

Step 3:name in the QA coloumn is GPIO3_PAA.04.

Step 4: use this name to know the group name, pin number

name in QA coloumn:GPIO3_PAA.06 ,group name:AA, Pin value =6.

Step 5:open the tegra186-gpio.h file and from the line: #define TEGRA_AON_GPIO_PORT_AA 5

Group:aon ,and port number=5

Step 6: GPIO export value =offset+ (port number* 8 + pin value)

offset is 256 for aon group.

GPIO export value=256+(5*8+6)=302

How to configure a gpio pin using the terminal:

1)$ sudu su //to be the root
2)cd /sys/class/gpio/ //to go to the gpio directory
3)echo 481 > export   //to export gpio481 as an example
4)cd /sys/class/gpio//gpio481
5) echo out > direction ; cat direction //the first part is to set the direction to output and the second part to read the value after writing it to make sure (n.b cat command use to read the content of a file)
6)echo 1 > value ; cat value //to set the value to 1.

CAUTION!!!

YOU CAN NOT EXPORT THE GPIO IF IT IS ALREADY EXPORTED IT WILL GIVE A BUSY GPIO ERROR IF YOU TRIED TO EXPORT IT TWICE AND IT IS PREFERABLE TO UNEXPORT THE GPIO AFTER FINISHING USING IT TO REALESE IT.

to enexport the gpio (if you are at /sys/class/gpio/ directory)
echo 481 > export //unexport gpio481 (as an example).