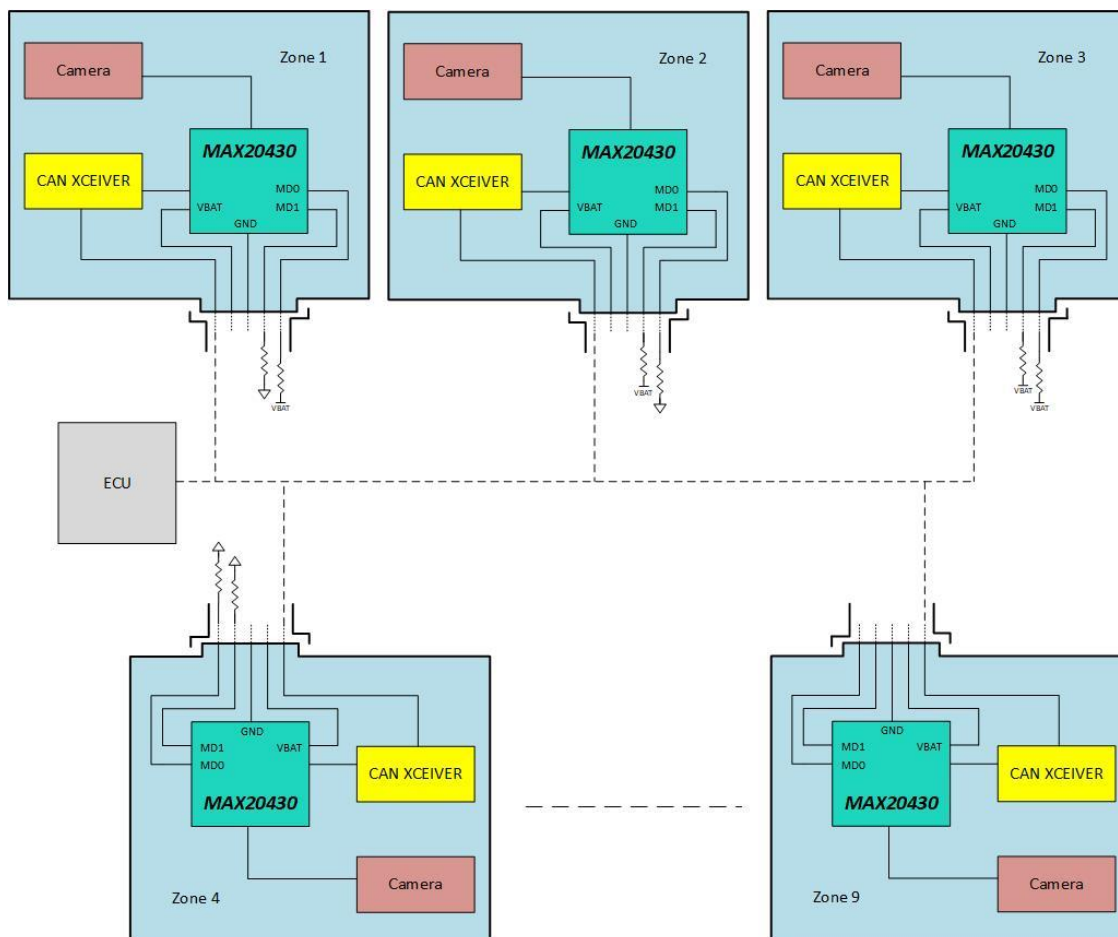


## MAX20430 Mount ID

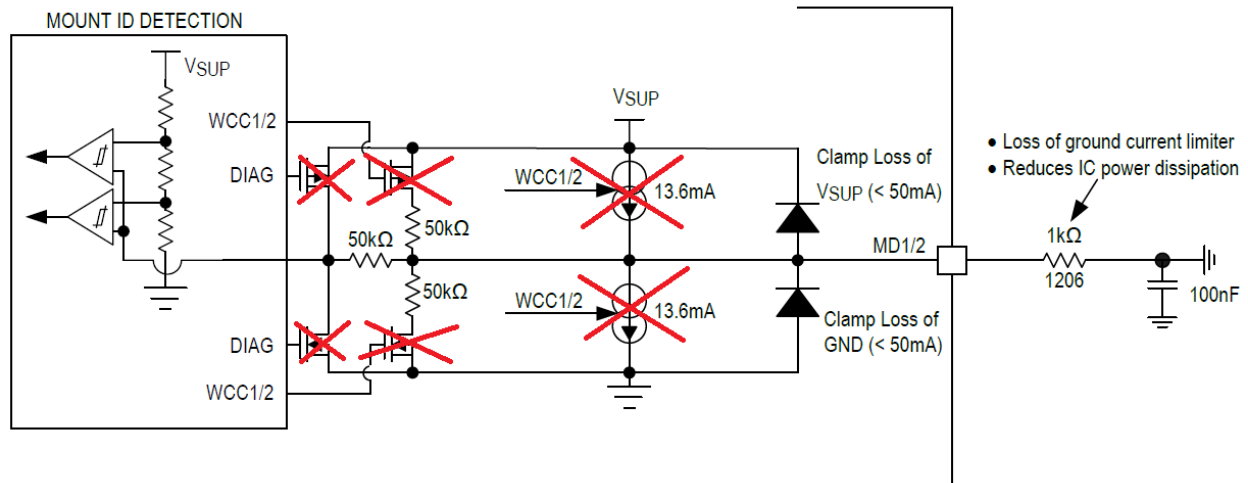
The MOUNT ID allows OEM to use MAX20430 in multiple locations in vehicle. Mount ID allows for Physical Keying assignment for each module (MAX20430). For RADAR application, given that MAX20430 has 2 dedicated MD pin with each having 3 states (High/Low/Open), there are 9 possibilities that can be configured for each radar Module.



Due to importance of the location of the module and corrosive nature of the contacts, to ensure proper operation and correct Keying, the wetting current and internal resistor are used by OEM to diagnose possible contact corrosion for MD Pins.



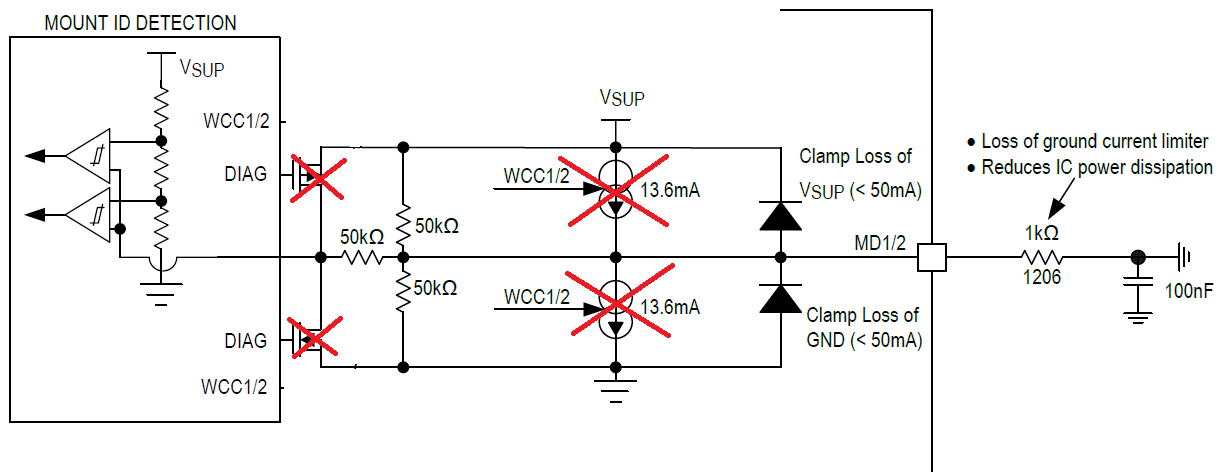
Lets assume the MD\_ pins are connected externally without any detachment from external pull down resistor.



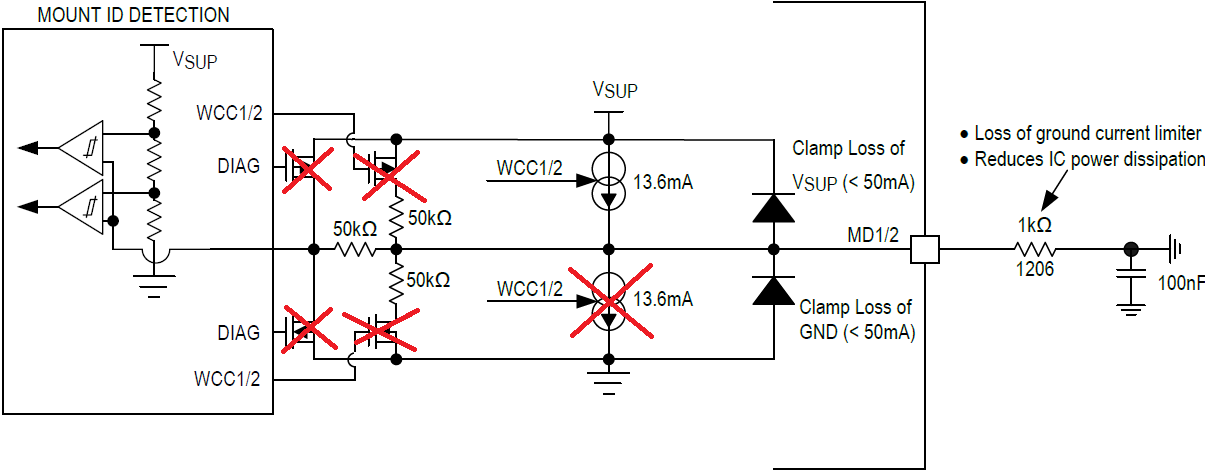
To guarantee proper operation of the MD\_ Pin, prior to setting the wetting current, the internal resistor divider is turned on.

To turn on the internal resistor divider, the Register WCC\_ is written 11b. this way, in case the MD\_pins are not connected to GND or VBAT, the internal comparator mapped to MD\_L/MD\_H will indicate midlevel.

Since the MD\_ Pins are grounded, despite the internal resistors are forcing comparators input midlevel, the corresponding MD\_L/H register indicate 00b due to external connection to GND.



Since MD\_ Pins are connected to GND, the internal resistor divider is no longer needed and high side wetting current must be selected (WCC\_ =0b10)



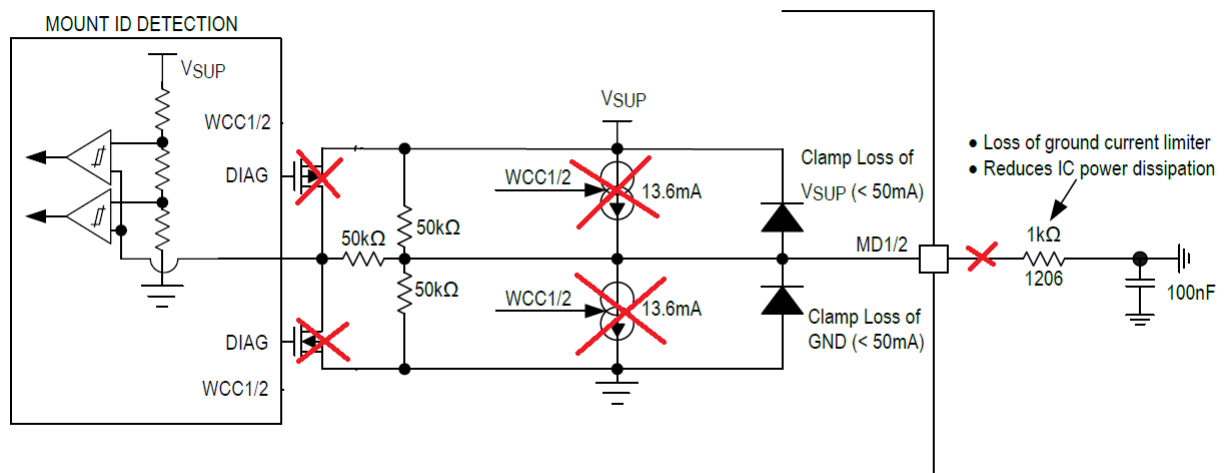
0x01	<a href="#">CONFIG1[7:0]</a>	-	-	-	-	EN_HOLD	SSE	PROT	PECE
0x02	<a href="#">CONFIG2[7:0]</a>	HT[1:0]		TS[1:0]		DF[3:0]			
0x03	<a href="#">CONFIGE[7:0]</a>	-	-	-	-	EN[4:2]		-	
0x04	<a href="#">CONFIGM[7:0]</a>	-	-	DIAG[1:0]		WCC2[1:0]		WCC1[1:0]	
0x05	<a href="#">FPSCFG1[7:0]</a>	PU4[1:0]		PU3[1:0]		PU2[1:0]		-	-
0x06	<a href="#">PORRSTI[7:0]</a>	-	-	-	-	-	-	-	POR_RST
0x07	<a href="#">PINMAP1[7:0]</a>	-	-	RSTMAP[6:1]					
0x08	<a href="#">STATUV[7:0]</a>	-	-	UV[6:1]					
0x09	<a href="#">STATOV[7:0]</a>	-	-	OV[6:1]					
0x0A	<a href="#">STATOFF[7:0]</a>	-	-	OFF[6:1]					
0x0B	<a href="#">STATD[7:0]</a>	-	-	-	RSTERR	POR	-	THSD	INTERR
0x0C	<a href="#">STATM[7:0]</a>	-	-	-	-	MD2H	MD2L	MD1H	MD1L
0x0D	<a href="#">STATWD[7:0]</a>	-	-	-	RESETB_STAT	WD_OP EN	WD_LFS R	WD_UV	WD_EX P

BITFIELD	BITS	DESCRIPTION	DECODE
DIAG	5:4	Mount ID Diagnostics. After setting the diagnostic mode, read the STATM register to check the comparator state.	00 = Normal mode 01 = Short MD1 comparator inputs to ground and MD2 comparator inputs to $V_{SUP}$ 10 = Short MD1 comparator inputs to $V_{SUP}$ and MD2 comparator inputs to GND 11 = Reserved
WCC2	3:2	Mount ID 2 Control. Sets the mode of the MD2 pin. The STATM should be read when WC2 is set to 11 to ensure a correct reading.	00 = Wetting current and resistor divider disabled 01 = Low-side wetting current enabled and resistor divider disabled 10 = High-side wetting current enabled and resistor divider disabled 11 = Resistor-divider enabled and wetting current disabled
WCC1	1:0	Mount ID 1 Control. Sets the mode of the MD1 pin. The STATM should be read when WC1 is set to 11 to ensure a correct reading.	00 = Wetting current and resistor divider disabled 01 = Low-side wetting current enabled and resistor divider disabled 10 = High-side wetting current enabled and resistor divider disabled 11 = Resistor-divider enabled and wetting current disabled

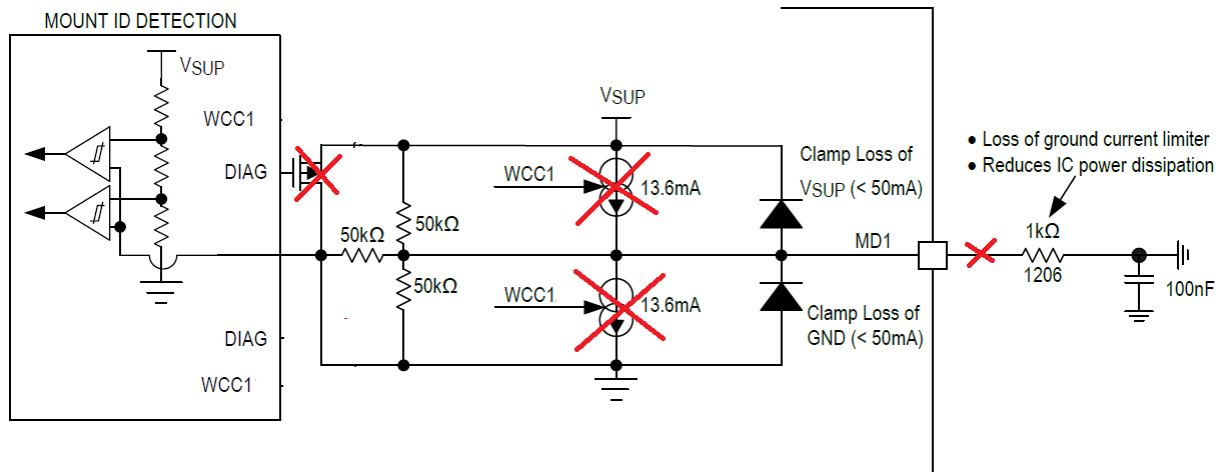
## Mount ID Diagnostic

Going back to our original assumption on Zone 3 module, the MD\_ pin external disconnect can be detected by following diagnostic routine.

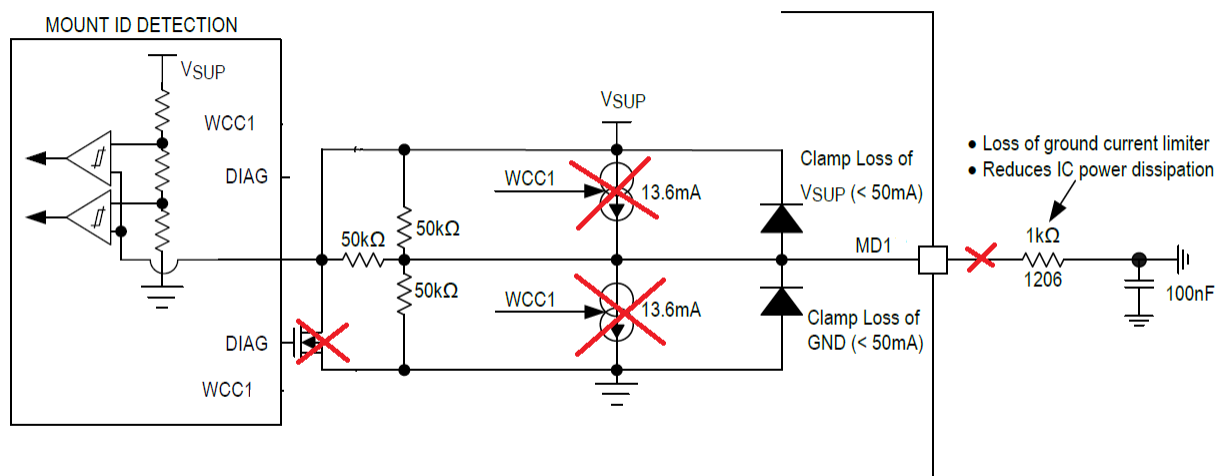
- 1- Set the WCC\_reg to 11b (CONFIGM to 0X0F) to implement the internal divider resistor forcing the comparators input as midlevel. In the case of external disconnect, the MD\_L/H registers should indicate midlevel instead of GND. The Mid Level indication is when MD\_L/MD\_H are both have nonmatching bits.



- 2- Set the DIAG reg (CONFIGM to 0X1F) to 0b01 to verify the comparators corresponding to MD1 are reporting Low and comparators corresponding to MD2 are high. This test is to guarantee correct reporting from comparators.



- 3- Set the DIAG reg (CONFIGM to 0X2F) to 0b10 to verify the comparators corresponding to MD1 are reporting High and comparators corresponding to MD2 are Low.



- 4- Set the CONFIGM to 0X00 to complete the diagnostic