

**TAG - DWM1003****Variant: [No Variations]****27/08/2019  
D1****RELEASED**

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**DESIGN CONSIDERATIONS**

**DESIGN NOTE:**  
Example text for informational design notes.

**DESIGN NOTE:**  
Example text for critical design notes.

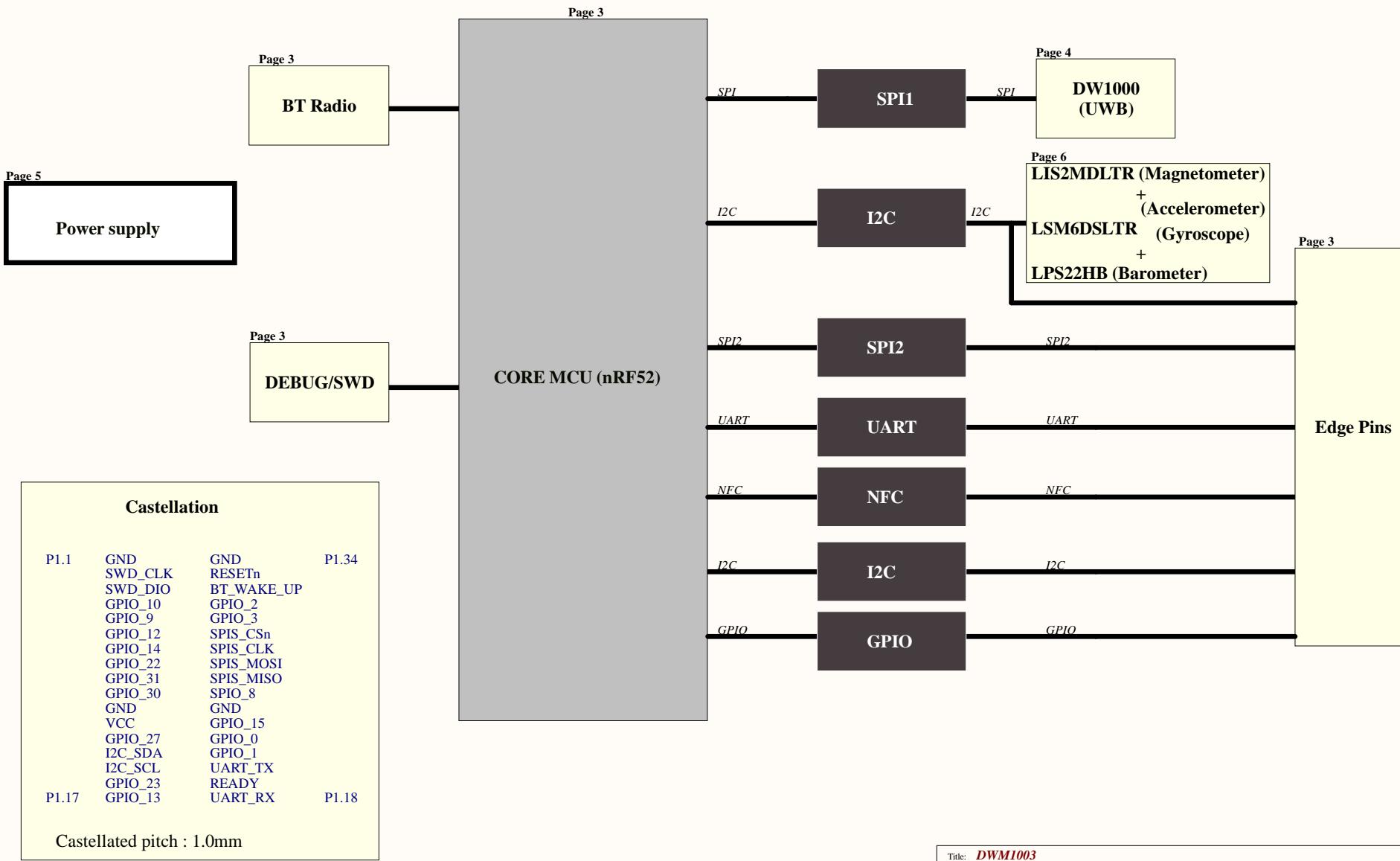
**DESIGN NOTE:**  
Example text for cautionary design notes.

**LAYOUT NOTE:**  
Example text for critical layout guidelines.

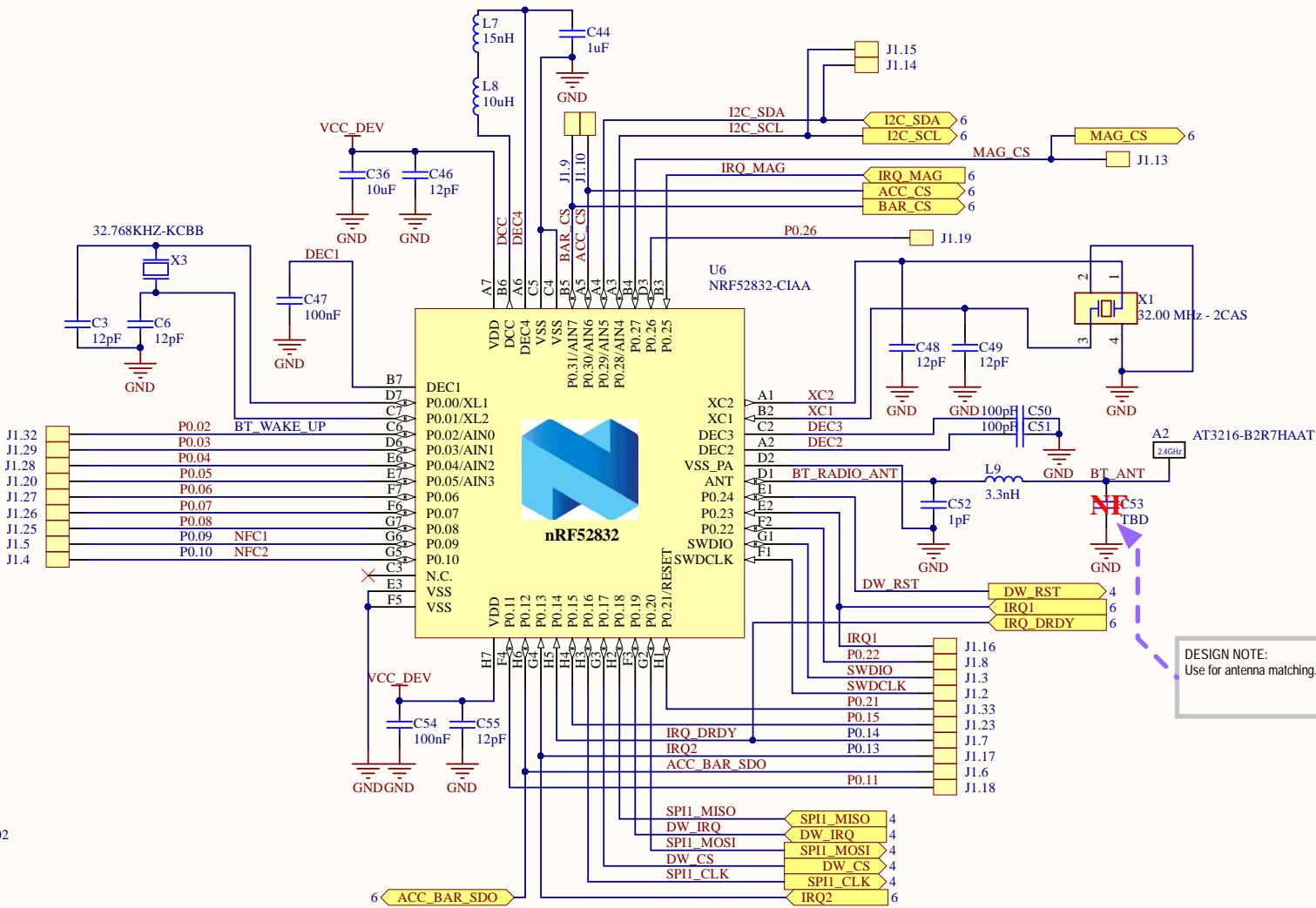
Title: <b>DWM1003</b>	Function: Index page	DecaWave Ltd. Adeilade Chambers, Peter Street, Dublin 8, Ireland.
Size: A3	Number: 1	Revision: v2
Date: 27/08/2019	Time: 17:44:17	Sheet 1 of 7
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# DWM1003

## (Block Diagram)



# Core MCU



Title: **DWM1003**

Function: **nRF MCU**

Size: **A4**

Number: **3**

Revision: **v2**

Date: **27/08/2019**

Time: **17:44:18**

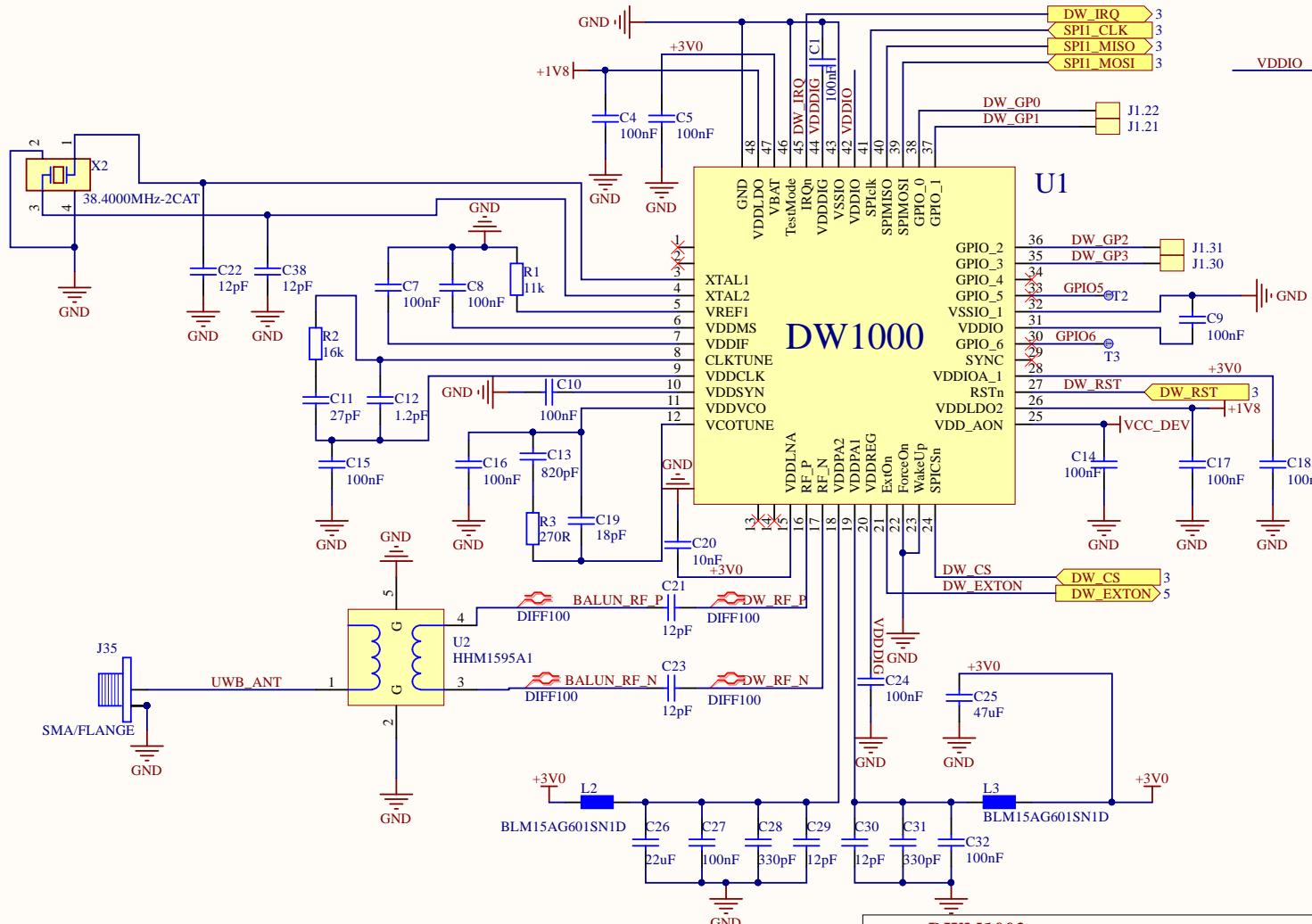
Sheet **3** of **7**

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Dublin 8,  
Ireland.



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# DW1000



DESIGN NOTE:  
Use test point for high voltage OTP  
programming  
Vmin 3.7V Vmax 3.9V

Title: **DWM1003**

Function: **DW1000**

Size: **A4**

Number: **4**

Revision: **v2**

Date: **27/08/2019**

Time: **17:44:18**

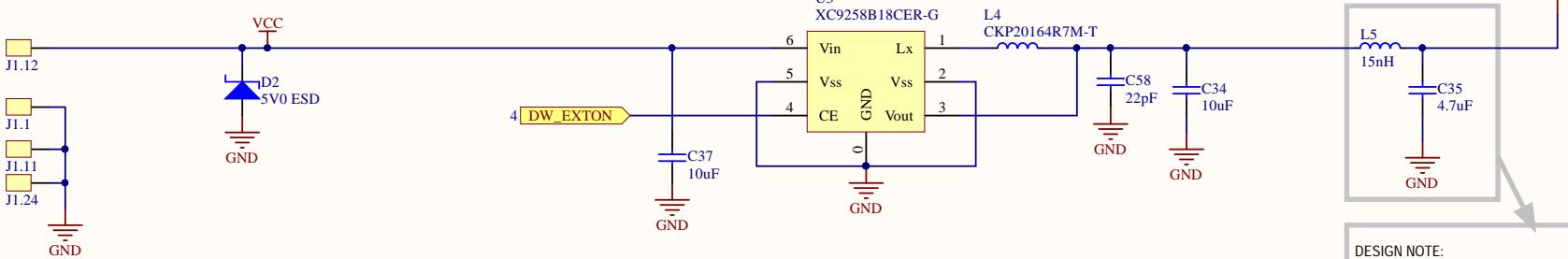
Sheet **4** of **7**

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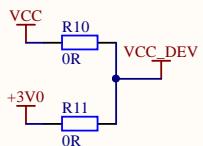
# Power supply

*DCDC 1.8V*



DESIGN NOTE:  
 $F=2.25\text{MHz}$ ,  $V_{convRipple}=60\text{mV}$ ,  
 $V_{maxRipple}=5\text{mV}$   
<http://www.aimtec.com/site/Aimtec/files/documents/ApplicationNotes/a016e%20-%20reduction%20of%20output%20ripple%20&%20noise.pdf>

*Power supply selection*



Title: **DWM1003**

Function: Power supply

Size: A4 Number: 5 Revision: v2

Date: 27/08/2019 Time: 17:44:18 Sheet 5 of 7

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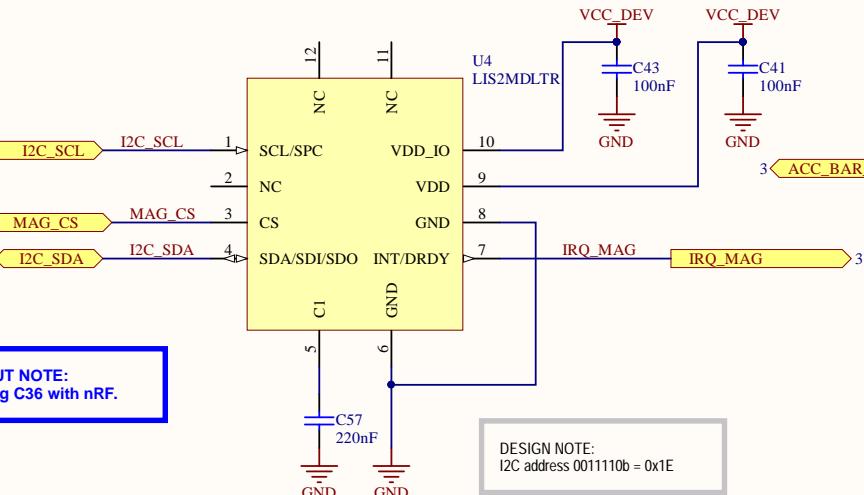


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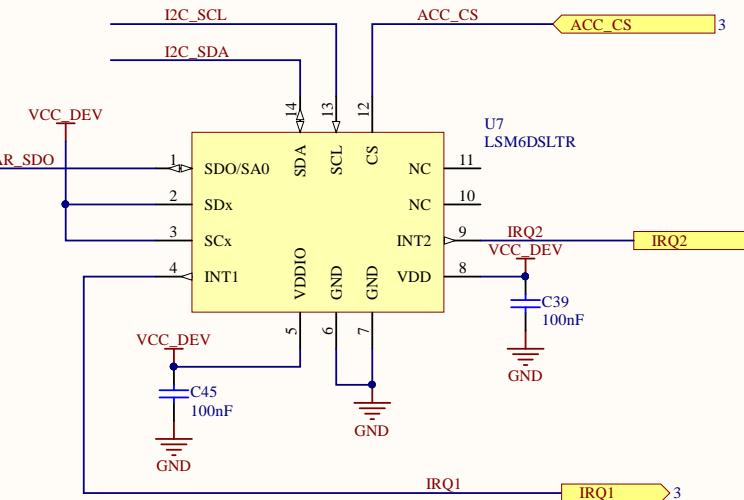
# I2C/SPI devices

## LIS2MDLTR + LSM6DSLTR

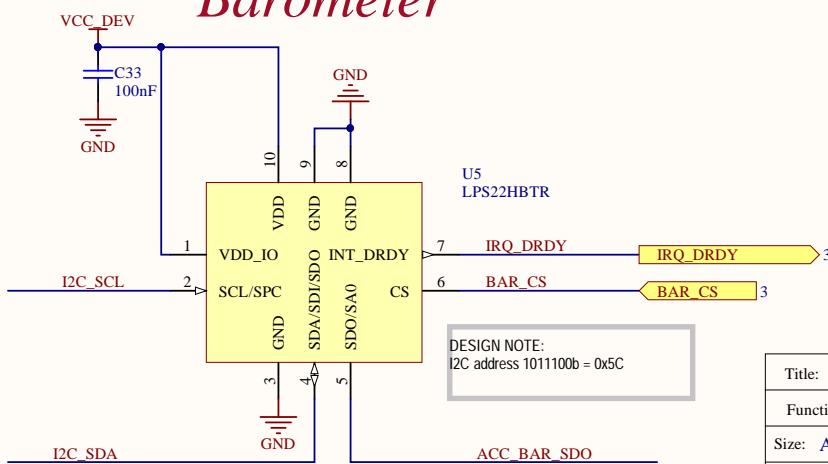
### 3-Axes Magnetometer



### 6-Axes Accelerometer and Gyroscope



### Barometer



Title: **DWM1003**

Function: **10DoF IMU**

Size: **A4**

Number: **6**

Revision: **v2**

Date: **27/08/2019**

Time: **17:44:18**

Sheet **6** of **7**

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# DOC: REVISION HISTORY

A

A1

- Initial version

B

B1

- DW\_CS path corrected
- NetC30\_2 - Via connection fixed
- P0.5 path corrected
- Changed 32MHz, 38.4MHz xtals to ABM10 footprint (2.0 x 2.5 mm)

C

C1

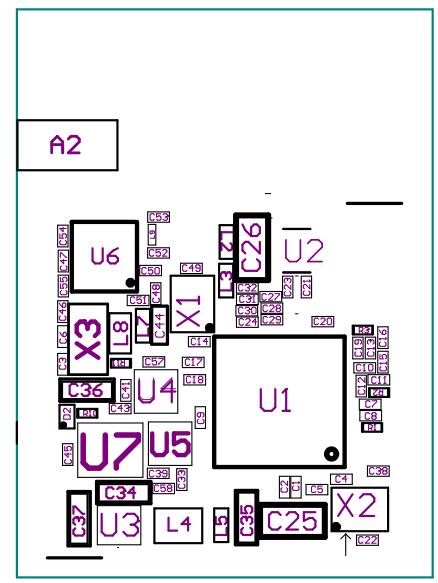
- Changed BT antenna A2 to ACX AT3216-B2R7HAA
- Changed all 0.1uF capacitor to Murata GRM033C81E0104KE14D
- Changed C56 to 10uF
- Changed C40 to 10pF
- Changed R7 to 340K 1%
- Changed R9 to 68.1K 1%
- Changed Balun U2 to TDK HHM1595A1
- Changed U5 to TI TPS63036YFGR
- Changed L4 to Taiyo Yuden CKP20162R2M-T
- Changed L6 to Taiyo Yuden CKP2012N2R2M-T
- Changed 32 MHz crystal X1 to Commutek 2CAS (2520-size)
- Changed 38.4MHz crystal X2 to Commutek 2CAT (2520-size)
- Changed 32.768KHz crystal X3 to Commutek KCBB (3215-size)
- Changed C35 and C37 to 4.7uF 6.3V X5R 0603
- Del C33 and C57

D

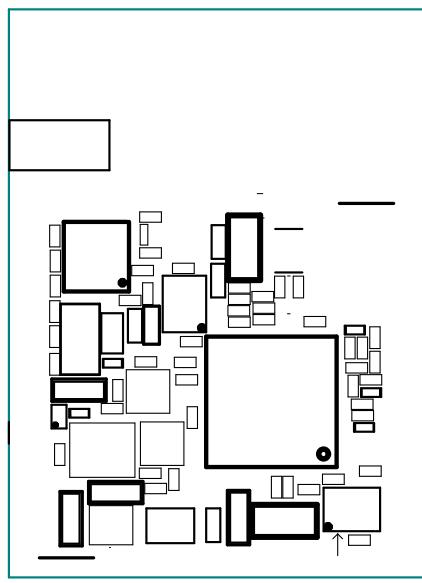
D1

- Disconnect U5 (TPS63036) pin B2 (PS/Sync) from ground and tie to VIN by adding pull-up resistor R4
- Changed C42 from 10uF to 47uF (0603)
- Changed C25 from 22uF to 47uF (0603)
- Changed R7 from 340K to 287 K 1%
- Changed R9 from 68.1K to 51.1K 1%

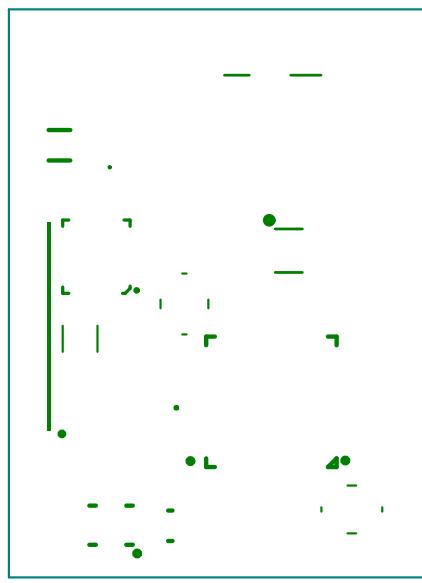
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Function: Revision history		DecaWave Ltd. Adelaide Chambers, Peter Street, Dublin 8, Ireland.	
Size: A4	Number: 7	Revision: v2	
Date: 27/08/2019	Time: 17:44:19	Sheet 7 of 7	
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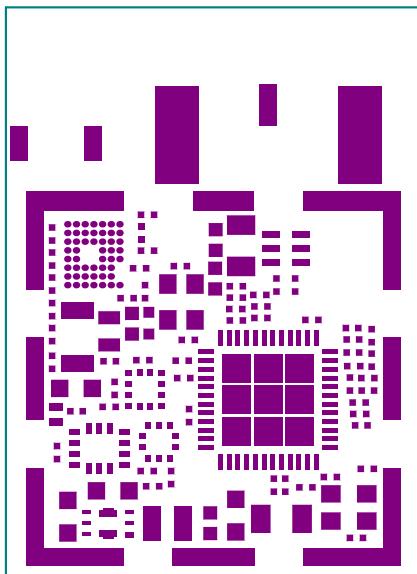
TOP DESIGNATOR  
TOP ASSEMBLY



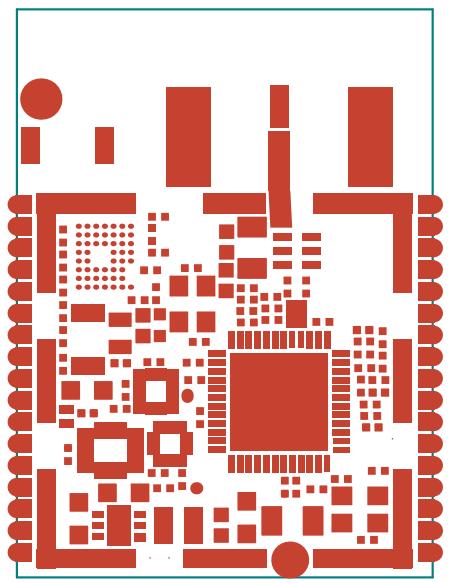
**TOP ASSEMBLY**



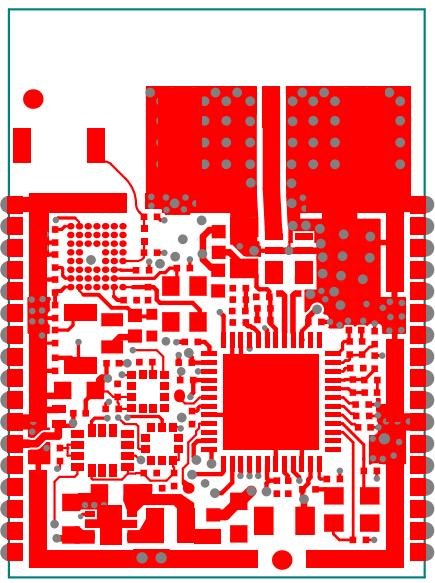
TOP\_OVERLAY



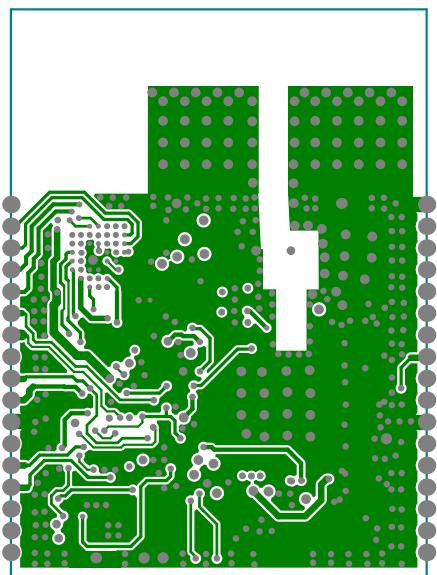
SOLDERPASTE TOP



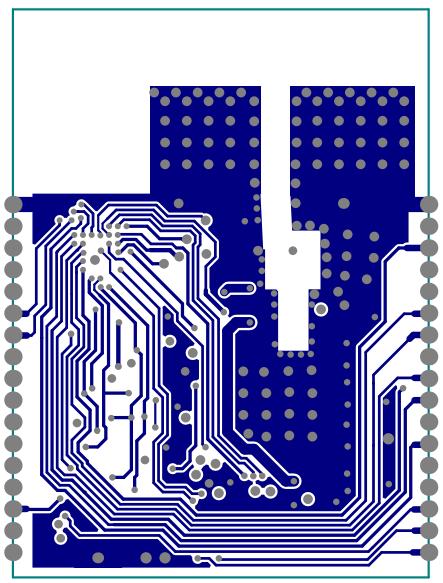
TOP MASK



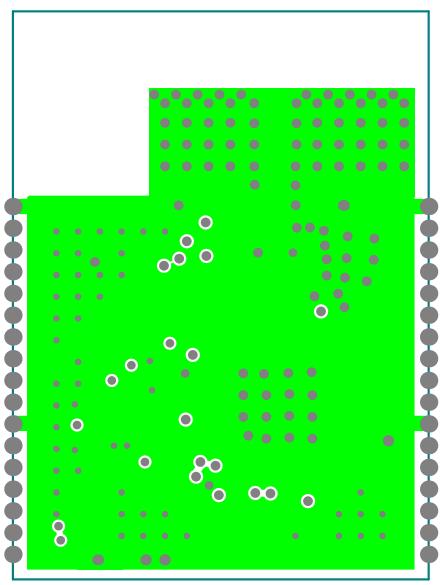
LAYER-01\_TOP



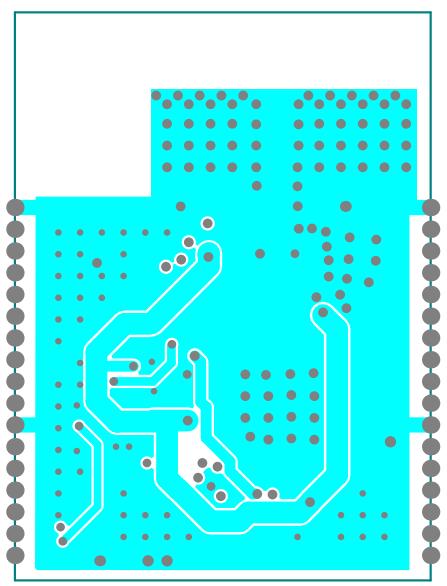
LAYER-02



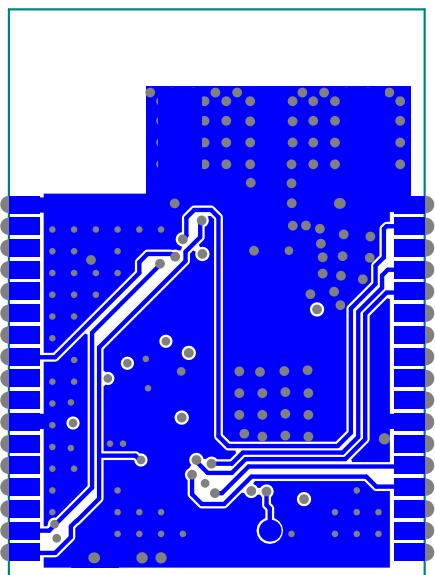
LAYER-03



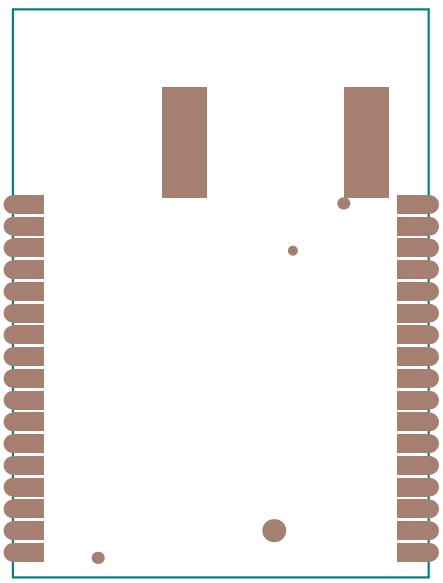
LAYER-04



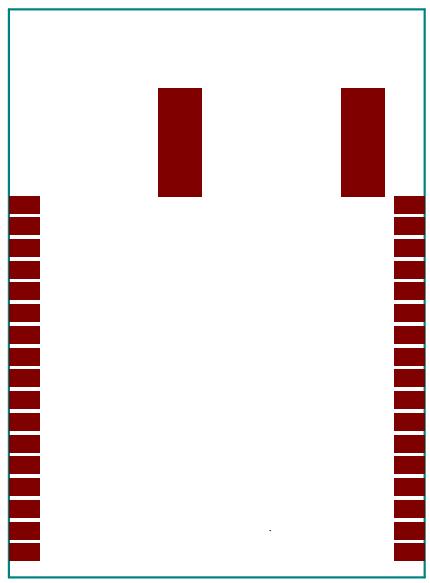
LAYER-05



LAYER-06\_BOTTOM



BOTTOM MASK



SOLDERPASTE BOTTOM

