A   B

2   2

1   1

VCC

U1
DWM1000

Pin	Signal		Pin	Signal

5 VDDAON
6 VDD
7 VDD

(5) DWM_RESETn — 3 RESETn

(5) DWM_SPI_CSn — 17 SPI_CSn
(5) DWM_SPI_CLK — 20 SPI_CLK
(5) DWM_SPI_MISO — 19 SPI_MISO
(5) DWM_SPI_MOSI — 18 SPI_MOSI

(5) DWM_WAKEUP — 2 WAKEUP

8 GND
16 GND
21 GND
23 GND
24 GND

EXTON 1

GPIO0/RXOKLED 15 DWM_RXOK (5)
GPIO1/SFDLED 14 DWM_SFD (5)
GPIO2/RXLED 13 DWM_RX (5)
GPIO3/TXLED 12 DWM_TX (5)
GPIO4 11
GPIO5/SPIPOL 10
GPIO6/SPIPHA 9
GPIO7 4
IRQ/GPIO8 22 DWM_IRQ (5)
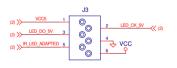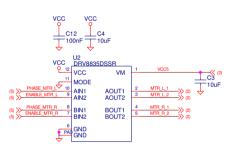
SwARM_Schematics

Size A   DWM1000   Rev
                                   1.0

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B

A   B   C   D

IR_LED_ADAPTED (2)

R13
20

IR_LED
(5)
Q4
DMN2050L

R1
10K
VCC5 (2)

SPI_LED_DO (5)
Q1
2N7002
LED_DO_5V (2)

R12
10K
VCC5 (2)

SPI_LED_CK (5)
Q3
2N7002
LED_CK_5V (2)

J3

VCC5 (2)   1
LED_DO_5V (2)   3
IR_LED_ADAPTED (2)   5
2   LED_CK_5V (2)
4   VCC
6

VCC   VCC

C12
100nF
C4
10uF

VCC
U2
DRV8835DSSR

12 VCC   VM 1   VCC5 (2)
11 MODE
PHASE_MTR_L (5)   10 AIN1   AOUT1 2   MTR_L_1 (2)
ENABLE_MTR_L (5)   9 AIN2   AOUT2 3   MTR_L_2 (2)
PHASE_MTR_R (5)   8 BIN1   BOUT1 4   MTR_R_1 (2)
ENABLE_MTR_R (5)   7 BIN2   BOUT2 5   MTR_R_2 (2)
6 GND
PAD GND

C3
10uF (2)

J2

MTR_R_1 (2)   1
INFRA_TRA_R (5)   3
5
2   MTR_R_2 (2)
4   R8   1K   INFRA_LED_R (5)
6

J1

MTR_L_1 (2)   1
INFRA_TRA_L (5)   3
5
2   MTR_L_2 (2)
4   R9   1K   INFRA_LED_L (5)
6

VCC   J4

1
3
5
9
2   SWDAT (5)
4   SWCLK (5)
6
8
10   RSTn_MCU (5)

SwARM_Schematics

Size   B   Motors, LEDs and SWD connectors   Rev 1.0

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MOL-47346-0001
J5

VBUS
DM
DP
ID
GND

USB_DP (5)
USB_DM (5)

C1
10uF

U3
MCP73831T-2ACI/OT
VDD   VBAT
PROG
STAT   GND

R6
1K

D1
GREEN

R7
100K

R2
10K

C2
10uF

Q6 NTR2101PT1G
0 R

R15
100K

2N7002
Q7

MCU_nSHUTDOWN (5)

R14
100K

Q2   NTR2101PT1G

MBRA140
D2

C6
1uF

U4
MIC5504-3.3YM5-TR
Vin   Vout
CE   GND

VCC

C5
1uF

Q5
NTR2101PT1G

J8

R
0

J7
VCC
TEMP
GND

MOL22-05-3031

SwARM_Schematics

Size B   Power control related components   Rev
1.0

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A   B   C   D

4   4

3   3

2   2

1   1

VCC VCC VCC VCC VCC   VCC VCC

C14 C15 C16 C17 C9   C18 C8
100nF 100nF 100nF 100nF 10uF   100nF 10uF

U6
STM32F302R6T6

VCC VCC   VCC VCC
C13 C10
100nF 10uF

VCC
VBAT

VDDA

PA0   14
PA1   15   INFRA_LED_L   (2)
PA2   16   PHASE_MTR_L   (2)   VCC
PA3   17   ENABLE_MTR_L   (2)
PA4   20
PA5   21   R3
PA6   22   4,7K
PA7   23   INFRA_TRA_L   (2)
PA8   41   DWM_RXOK   (1)
PA9   42   DWM_SFD   (1)   VCC
PA10   43   DWM_WAKEUP   (1)
PA11   44   USB_DM   (3)   R5
PA12   45   USB_DP   (3)   4,7K

(2) SWDAT   46   PA13/JTMS/SWDIO
(2) SWCLK   49   PA14/JTCK/SWCLK
(2) MCU_nSHUTDOWN   50   PA15/JTDI
(3)   55   PB3/JTDO
(2) ENABLE_MTR_R   56   PB4/JNTRST

PB0   26   INFRA_TRA_R   (2)
PB1   27
PB2   28
PB5   57   PHASE_MTR_R   (2)
PB6   58   INFRA_LED_R   (2)
PB7   59   MPU_INT   (6)
PB8   61   MPU_I2C_SCL   (6)
PB9   62   MPU_I2C_SDA   (6)

C19 18pF
C20 18pF   QZ1
8 MHz

3   PC14/OSC32_IN
4   PC15/OSC32_OUT
5   PF0/OSC_IN
6   PF1/OSC_OUT

PB10   29
PB11   30
PB12   33   DWM_SPI_CSn   (1)
PB13   34   DWM_SPI_CLK   (1)
PB14   35   DWM_SPI_MISO   (1)
PB15   36   DWM_SPI_MOSI   (1)

J6
VCC
2
1
JUMPER 2PTS

60   BOOT0

R11
10K

PC0   8
PC1   9
PC2   10
PC3   11
PC4   24
PC5   25
PC6   37   DWM_RESETn   (1)
PC7   38   DWM_IRQ   (1)
PC8   39   DWM_RX   (1)
PC9   40   DWM_TX   (1)
PC10   51   SPI_LED_CK   (2)
PC11   52   IR_LED   (2)
PC12   53   SPI_LED_DO   (2)
PC13   2

(2) RSTn_MCU   7   RSTn

PD2   54

GND GND GND GND   GNDA

VCC   VCC

C21   C11
100nF 10nF

U7
MPU9250

VCC

VDD   AUX_CL   7
VDDIO   AUX_DA   21
RESV/VDDIO

VCC   INT   12   MPU_INT   (5)

R10
10K

VCC
R4   SPI_CSn   22
10K   SPI_SCK/SCL   23
(5)   (5)   MPU_I2C_SCL
            SPI_MOSI/SDA   24
      MPU_I2C_SDA
            SPI/MISO/AD0   9
                           REGOUT   10
            EXP   FSYNC   11
            GND_PAD   RESV_GND 20   C7
            GND   18   100nF