H1 Hole
H2 Hole
H3 Hole
H4 Hole

Mounting holes

5V TP3
3.3V TP4
1.8V TP6
GND TP7

P4 DNP
(TMS) SWDIO 1
GND 3
SWDCLK (TCK) 5
2 MCU_TXD
4
6 MCU_RXD
VMCU

P5 DNP
(TXD) CCU_CMD 1
GND 3
CCU_CLK (RXD) 5
2 CCU_DAT
4
6 EN_PMIC
3.3V

P6 DNP
CCU_RXD 1
GND 3
CCU_TXD 5
2 EN_3V3
4
6 EN_1V8
1.8V

To the middle board

P1 53647-0374
GSPI_SEL 1
GND 3
GSPI_MISO 5
GSPI_MOSI 7
9
GND 11
GSPI_CLK 13
RTC_CLK 15
5V 17
I2C_SDA 19
I2C_SCL 21
GND 23
I2S_SCLK 25
I2S_DIN 27
GND 29
I2S_DOUT
2 C21 2200p GND
4 1.8V
6 CCU_RXD
8 CCU_TXD
10
12 GSPI_INT
14 CCU_DAT
16
18 5V
20 CCU_CMD
22 CCU_CLK
24 GND
26 RTC_INT
28 I2S_FSYNC
30 3.3V C22 2200p GND

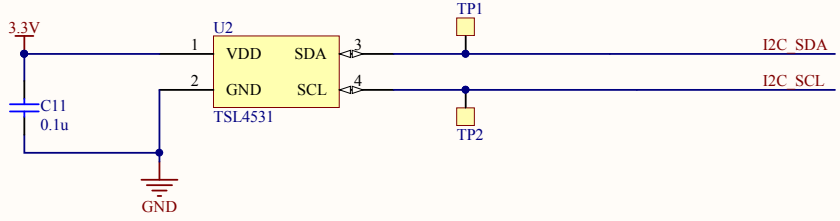
RTC_CLK# R28 DNP
1.8V R81 DNP
R82 DNP

C20 5V 2200p GND

C61 0.1u GND
EN_PMIC R61 10k VMCU
R37 100
R38 100
R39 100 PON
R31 DNP RTC_INT#
Q2B Si1912EDH
Q2A Si1912EDH
EN_3V3
EN_1V8

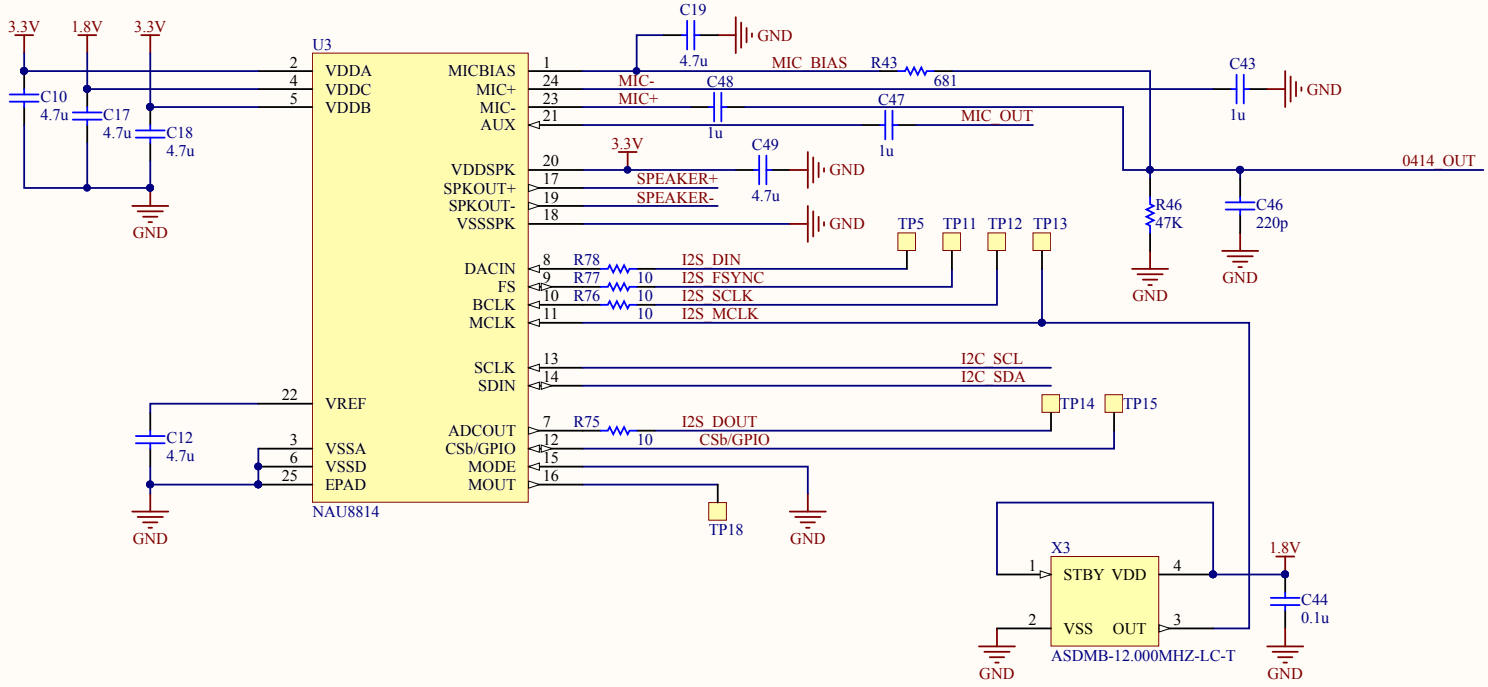
Hello

TITLE: Morpheus top	REV: EVT2
DATE: 9/23/2014	DRAWN BY: D. Fusi
	SHEET 1 OF 7



Hello

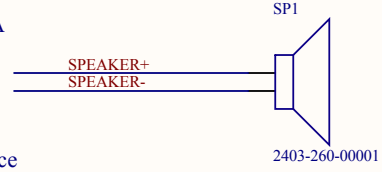
TITLE: ALS		REV: EVT2
DATE: 9/23/2014	DRAWN BY: D. Fusi	SHEET 2 OF 7



Hello

TITLE: Codec	REV: EVT2
DATE: 9/23/2014	DRAWN BY: D. Fusi
	SHEET 3 OF 7

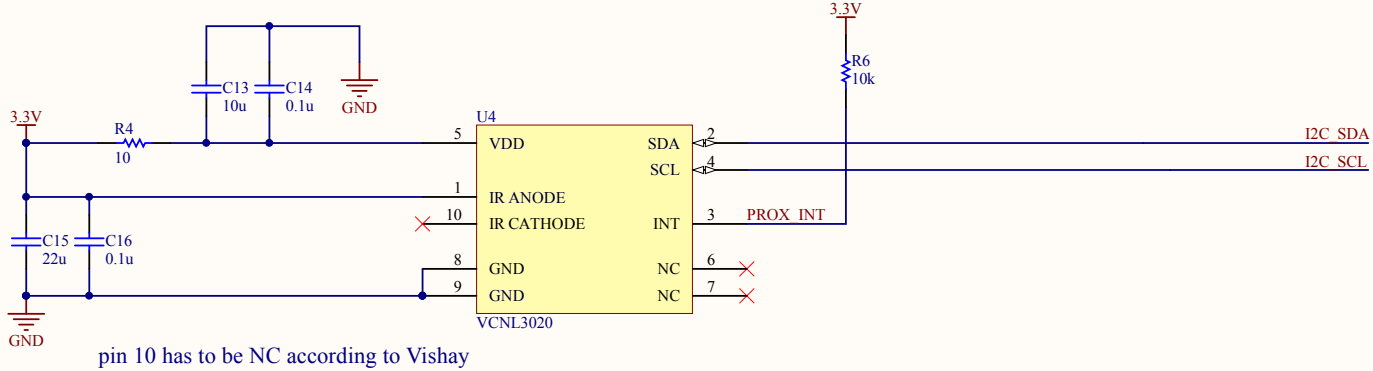
max output current @ 5V = 15mA



max speaker power = 500mW

max sp7.9 mA @ 8 ohm impedance

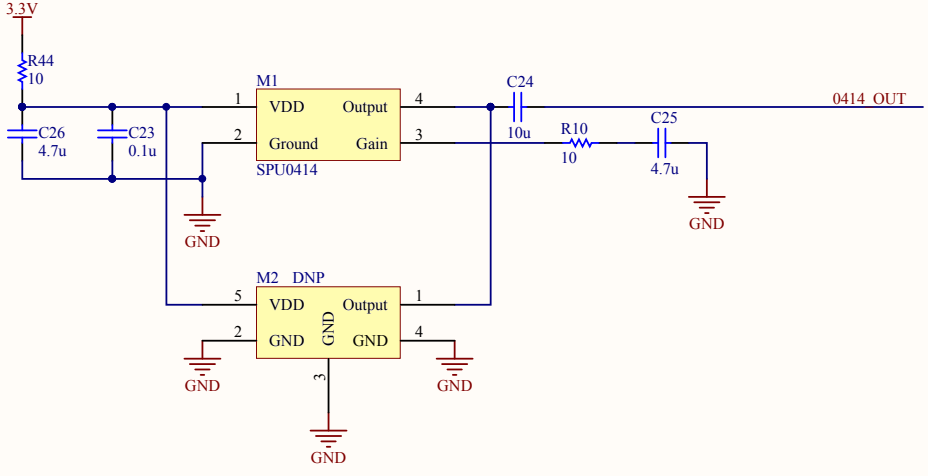
Hello		
TITLE: Speaker		REV: 1
DATE: 9/23/2014	DRAWN BY: D. Fusi	SHEET 4 OF 7



pin 10 has to be NC according to Vishay

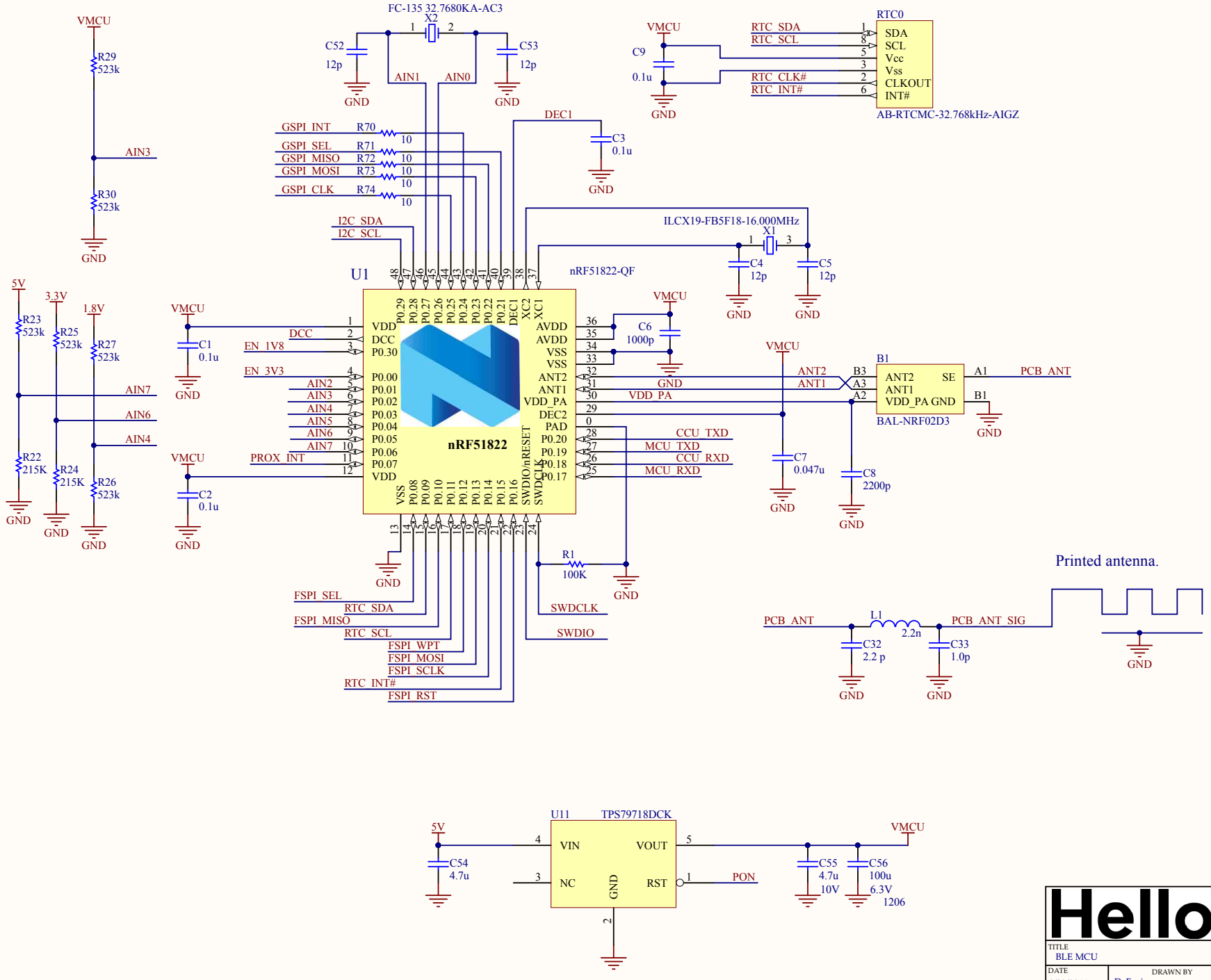
Hello

TITLE: Proximity		REV: EVT2
DATE: 9/23/2014	DRAWN BY: D. Fusi	SHEET 5 OF 7



Hello

TITLE	REV
Microphone	EVT2
DATE: 9/23/2014 — DRAWN BY: D. Fusi	SHEET 6 OF 7

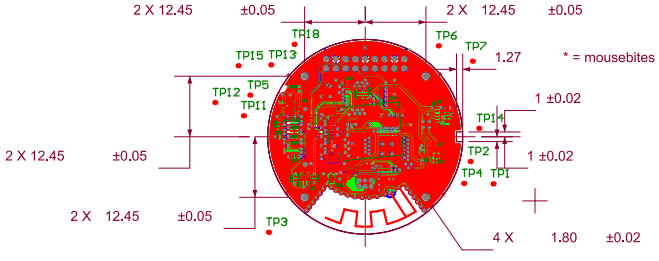

VMCU
R29
523k
AIN3
R30
523k
GND
5V
3.3V
1.8V
R23
523k
R25
523k
R27
523k
AIN7
AIN6
AIN4
R22
215K
R24
215K
R26
523k
GND
FC-135 32.7680KA-AC3
X2
C52
12p
C53
12p
AIN1
AIN0
GSPI_INT
GSPI_SEL
GSPI_MISO
GSPI_MOSI
GSPI_CLK
R70
R71
R72
R73
R74
10
I2C_SDA
I2C_SCL
DEC1
C3
0.1u
U1
nRF51822-QF
nRF51822
VDD
DCC
P0.30
P0.00
P0.01
P0.02
P0.03
P0.04
P0.05
P0.06
P0.07
AVDD
VSS
ANT2
ANT1
VDD_PA
DEC2
PAD
P0.20
P0.19
P0.18
P0.17
SWDIO/nRESET
SWDCLK
C1
0.1u
C2
0.1u
DCC
EN_1V8
EN_3V3
AIN2
AIN3
AIN4
AIN5
AIN6
AIN7
PROX_INT
C6
1000p
CCU_TXD
MCU_TXD
CCU_RXD
MCU_RXD
R1
100K
SWDCLK
SWDIO
FSPI_SEL
RTC_SDA
FSPI_MISO
RTC_SCL
FSPI_WPT
FSPI_MOSI
FSPI_SCLK
RTC_INT#
FSPI_RST
ILCX19-FB5F18-16.000MHz
X1
C4
12p
C5
12p
C9
0.1u
RTC0
SDA
SCL
Vcc
Vss
CLKOUT
INT#
RTC_SDA
RTC_SCL
RTC_CLK#
RTC_INT#
AB-RTCMC-32.768kHz-AIGZ
B1
ANT2
ANT1
VDD_PA
GND
SE
A1
A2
A3
B3
PCB_ANT
BAL-NRF02D3
C7
0.047u
C8
2200p
Printed antenna.
PCB_ANT
L1
2.2n
PCB_ANT_SIG
C32
2.2 p
C33
1.0p
U11
TPS79718DCK
VIN
VOUT
NC
GND
RST
PON
C54
4.7u
C55
4.7u
10V
C56
100u
6.3V
1206
Hello
TITLE
BLE MCU
REV
EVT2
DATE
9/23/2014
DRAWN BY
D. Fusi
SHEET 7 OF 7

Fabrication / Assembly Notes
1. Material: Rigid
2. Number of electrical layers: 4
3. Trace / Space minimum: 0.1 mm (all layers)
4. Thickness: 0.76 mm (finished)
5. Finish: ENIG plating on exposed copper
6. Soldermask: per IPC-SM-840, color green registration within +/- 50um of circuit layer
7. Silkscreen: do print silkscreen on top and bottom layers
8. RoHS: parts shall be RoHS compliant as per European Union directive 2002/95/EC
9. Board must be lead free process compatible and able to withstand minimum of
   5 cycles at 250 degrees celsius
10. All Test/QA/QC markings to be made on back side of PCB

Layer	Name	Material	Thickness	Constant	Board Layer Stack
1	Top Paste				
2	Top Overlay				
3	Top Solder	Solder Resist	0.010mm	3.5	
4	Top Layer	Copper	0.036mm		
5	Dielectric 1	FR-4	0.254mm	4.2	
6	GND	Copper	0.017mm		
7	Dielectric 2		0.127mm	4.2	
8	PWR	Copper	0.017mm		
9	Dielectric 3	FR-4	0.254mm	4.2	
10	Bottom Layer	Copper	0.036mm		
11	Bottom Solder	Solder Resist	0.010mm	3.5	
12	Bottom Overlay				
13	Bottom Paste				

Symbol	Hit Count	Finished Hole Size	Plated	Hole Type
⌑	1	0.700mm (27.56mil)	NPTH	Round
⌾	1	0.900mm (35.43mil)	NPTH	Round
□	4	0.900mm (35.43mil)	PTH	Round
⊠	16	0.100mm (3.94mil)	PTH	Round
▽	16	1.700mm (66.93mil)	PTH	Round
○	57	0.200mm (7.87mil)	PTH	Round
	95 Total			

* = Mousebite locations
for panelization



METRIC		DRAFTER	DATE	TITLE:
DIMENSIONS ARE IN MILLIMETERS				
TOLERANCES:		DESIGNER	DATE	
0 > - < 2	0.05			
2 > - < 10	0.08			
10 > - < 50	0.10			
50 > - < 100	0.15			
100 > - < 200	0.20			
200 > -	0.20			
ANGLES	1.00			

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SIZE	DWG. NO.	REV
B		
SCALE: 2:1	WEIGHT:	SHEET 1 OF 1