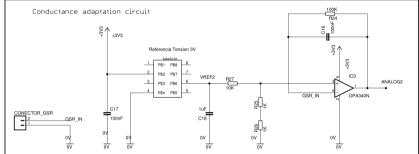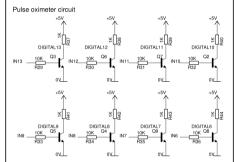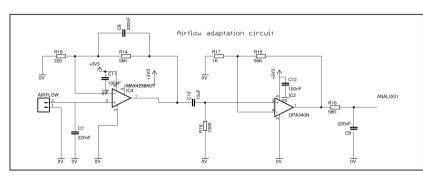# eHealth sensor platform schematic

ECG circuit

+5V V+ +5V V+
C2 0.1uF 0V
R3 47K
C2
IC1A OPA4340U
VR
R6 47K
ECG_REF
ECG_LEADS
ECG+ / ECG- / ECG_REF
R1 100k
R4 2.2M
VR
R8 2.2M
R9 100k
ECG+
ECG-
INA1 INA321EA
IN- / IN+
+5V V+
C1 0.1uF 0V
R2 1M
VR
C3 0.1uF
IC1B OPA4340U
C4 4.7nF
R5 1M
R7 3.3k
VR
R12 820
R13 1M
IC1D OPA4340U
R10 4.7k
IC1C OPA4340U
R11 47k
ANALOG0ECG
C5 1uF 0V
C6 0.1uF 0V

Blood pressure connector

P2 DIGITAL0
P3 +3V3
P4 0V
P1 DIGITAL1

Push button

+5V
P1 / P2 / P3 / P4
10K R46
DIGITAL4
0V

Conductance adaptation circuit

+3V3 +3V3
Referencia Tension 3V
MAX6163
PS1 PS8 / PS2 PS7 / PS3 PS6 / PS4 PS5
VREF2
R27 10K
1uF C18
R25 1K
R26 1K
R24 100K
C16 100nF
+3V3
GSR_IN
IC3 OPA340N
ANALOG2
CONECTOR_GSR
GSR_IN
C17 100nF
0V

Pulse oximeter circuit

+5V +5V +5V +5V
R37 1K / R38 1K / R39 1K / R40 1K
DIGITAL13 / DIGITAL12 / DIGITAL11 / DIGITAL10
IN13 / IN12 / IN11 / IN10
R29 10K Q3 / R30 10K Q6 / R31 10K Q7 / R32 10K Q2
+5V +5V +5V +5V
R41 1K / R42 1K / R43 1K / R44 1K
DIGITAL9 / DIGITAL8 / DIGITAL7 / DIGITAL6
IN9 / IN8 / IN7 / IN6
R33 10K Q5 / R34 10K Q4 / R35 10K Q9 / R36 10K Q8

Airflow adaptation circuit

R19 220
C8 220nF
R14 56K
+3V3
C11 100nF
IC4 MAX4236AUT
AIRFLOW
C7 220nF
R18 100K
C10 10uF
R17 1K
R15 56K
+3V3
C12 100nF
IC2 OPA340N
R16 56K
ANALOG1
220nF C9
0V

Glucometer Circuit

+5V
74AHC1G126
VCC OE A GND Y
U$3
DIGITAL0
DIGITAL5
+5V
C14 100nF
C15 100nF
IC5
C1+ C1- C2+ C2-
V+ V-
C20 100nF
C21
DIGITAL5 / DIGITAL1
74AHC1B126
OE A GND VCC Y
U$2
R53 10K
T1IN T2IN R1OUT R2OUT
T1OUT T2OUT R1IN R2IN
MAX3232CUE
E A B R

MUSCULE SENSOR

SMOOTH
R51 1K
ADA4692-4RU
IC7D
ANALOG0EMG
V+ IC7P
ADA4692-4RU
V-
JP1
ANALOG0EMG / ANALOG0 / ANALOG0ECG
MEASURE
C30 10nF
R28 150K
R45 150K R23 150K R47 150K
ADA4692-4RU
IC7A
D3
IC7C ADA4692-4RU
RECTIFY
R48 150K
RECTIFY
R49 80K6
R50 80K6
C27 1uF
ADA4692-4RU
IC7B
SMOOTH
V+
C29 1uF
C28 1uF
V-
ECG_LEADS1
MID / END / 0V
R52 240
MID / END / MEASURE
V+ / V-

Temperature adaptation circuit

+3V3
Referencia Tension 3V
MAX6163
PS1 PS8 / PS2 PS7 / PS3 PS6 / PS4 PS5
VREF
0.1uF C19
1uF C13
R20 4K7
R22 820
TEMP+
R21 4K7
CON1 1503_02
+3V3
TEMP-
INA2 INA321EA
Amplificador de instrumentación
ANALOG3
TEMP+
+3V3

Connectors

ICSP Connector
ICSP
VCC
GND
LCD connector
JP2
V+ / 0V / DIGITAL0 / DIGITAL1
ACC Connector
87758-0216
+3V3 X3-1 X3-2 ANALOG4
ANALOG5 87758-0216 X4-1 X4-2 DIGITAL3
DIGITAL2 87758-0216 X5-1 X5-2 0V
87758-0216
POWER
10x1F-H8.5
IN13 IN12 IN11 IN10 IN9 IN8 IN7 IN6 +3V3
8x1F-H8.5
IOH1
IOL
10x1F-H8.5
SCL SDA
IOH
6x1F-H8.5
+3V3 ANALOG3
AD
8x1F-H8.5

IC6
SHDNOUT
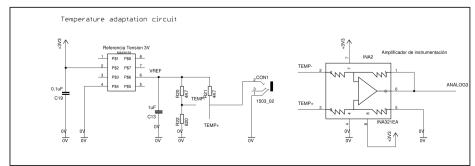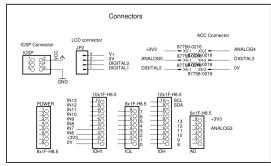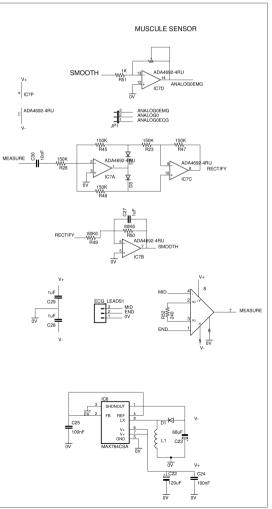C25 100nF
FB REF LX
V+ GND
MAX764CSA
D1
68uF C23
L1
C22 120uF
C24 100nF
0V V- V+

APPENDIX 1

The "EMG v3 Sensor"