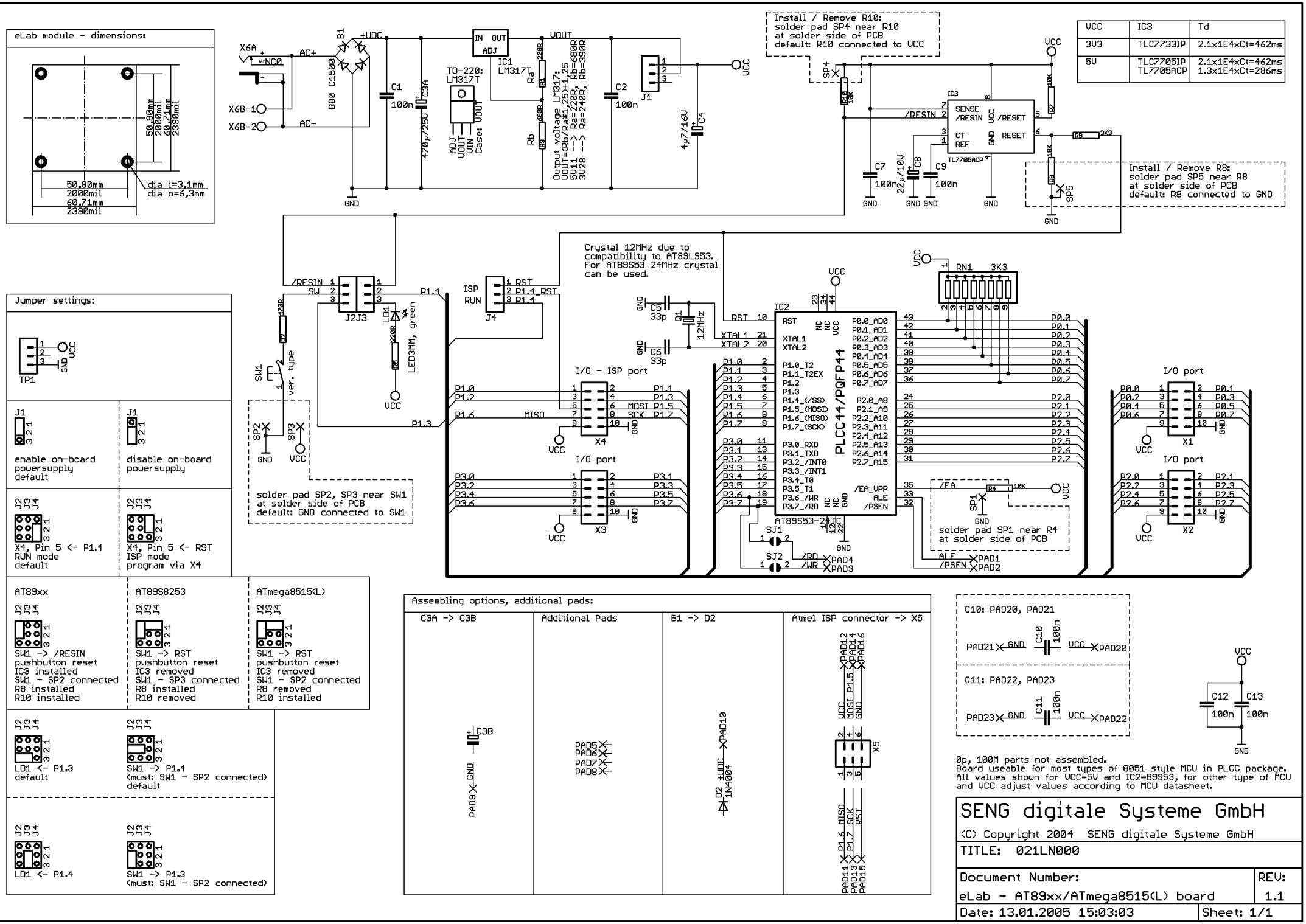
eLab module - dimensions:
50,80mm
2000mil
60,71mm
2390mil
dia i=3,1mm
dia o=6,3mm
X6A
X6B-1
X6B-2
NC0
AC+
AC-
B1
B80 C1500
+UDC
C1
100n
C3A
470µ/25V
IC1
LM317T
TO-220:
LM317T
IN OUT
ADJ
VOUT
ADJ VOUT VIN Case: VOUT
Ra
R1
220R
Rb
R3
680R
Output voltage LM317:
VOUT=(Rb/Ra*1,25)+1,25
5V11 --> Ra=220R, Rb=680R
3V28 --> Ra=240R, Rb=390R
C2
100n
J1
4µ7/16V
C4
VCC
GND
Install / Remove R10:
solder pad SP4 near R10
at solder side of PCB
default: R10 connected to VCC
SP4
R10
10K
IC3
SENSE
/RESIN
CT
REF
VCC
/RESET
GND
RESET
TL7705ACP
R7
10K
R9
3K3
R8
10K
SP5
C7
100n
C8
22µ/10V
C9
100n
Install / Remove R8:
solder pad SP5 near R8
at solder side of PCB
default: R8 connected to GND
VCC | IC3 | Td
3V3 | TLC7733IP | 2.1x1E4xCt=462ms
5V | TLC7705IP | 2.1x1E4xCt=462ms
TLC7705ACP | 1.3x1E4xCt=286ms
Crystal 12MHz due to
compatibility to AT89LS53.
For AT89S53 24MHz crystal
can be used.
C5
33p
C6
33p
Q1
12MHz
IC2
PLCC44/PQFP44
AT89S53-24JC
RST
XTAL1
XTAL2
P1.0_T2
P1.1_T2EX
P1.2
P1.3
P1.4_(/SS)
P1.5_(MOSI)
P1.6_(MISO)
P1.7_(SCK)
P3.0_RXD
P3.1_TXD
P3.2_/INT0
P3.3_/INT1
P3.4_T0
P3.5_T1
P3.6_/WR
P3.7_/RD
P0.0_AD0
P0.1_AD1
P0.2_AD2
P0.3_AD3
P0.4_AD4
P0.5_AD5
P0.6_AD6
P0.7_AD7
P2.0_A8
P2.1_A9
P2.2_A10
P2.3_A11
P2.4_A12
P2.5_A13
P2.6_A14
P2.7_A15
/EA_VPP
ALE
/PSEN
RN1
3K3
/EA
R4
10K
SP1
solder pad SP1 near R4
at solder side of PCB
ALE
/PSEN
PAD1
PAD2
SJ1
SJ2
/RD
/WR
PAD4
PAD3
I/O port
X1
X2
X3
X4
P0.0
P0.1
P0.2
P0.3
P0.4
P0.5
P0.6
P0.7
P2.0
P2.1
P2.2
P2.3
P2.4
P2.5
P2.6
P2.7
P1.0
P1.1
P1.2
P1.3
P1.4
P1.5
P1.6
P1.7
P3.0
P3.1
P3.2
P3.3
P3.4
P3.5
P3.6
P3.7
MOSI
SCK
MISO
I/O - ISP port
/RESIN
SW
J2J3
ISP
RUN
J4
RST
P1.4_RST
P1.4
R2
120R
LD1
LED3MM, green
R5
220R
SW1
ver. type
SP2
SP3
solder pad SP2, SP3 near SW1
at solder side of PCB
default: GND connected to SW1
TP1
Jumper settings:
enable on-board
powersupply
default
disable on-board
powersupply
X4, Pin 5 <- P1.4
RUN mode
default
X4, Pin 5 <- RST
ISP mode
program via X4
AT89xx
SW1 -> /RESIN
pushbutton reset
IC3 installed
SW1 - SP2 connected
R8 installed
R10 installed
AT89S8253
SW1 -> RST
pushbutton reset
IC3 removed
SW1 - SP3 connected
R8 installed
R10 removed
ATmega8515(L)
SW1 -> RST
pushbutton reset
IC3 removed
SW1 - SP2 connected
R8 removed
R10 installed
LD1 <- P1.3
default
SW1 -> P1.4
(must: SW1 - SP2 connected)
default
LD1 <- P1.4
SW1 -> P1.3
(must: SW1 - SP2 connected)
Assembling options, additional pads:
C3A -> C3B
C3B
PAD9
GND
Additional Pads
PAD5
PAD6
PAD7
PAD8
B1 -> D2
+UDC
PAD10
D2
1N4004
Atmel ISP connector -> X5
PAD12
PAD14
PAD16
VCC
MOSI P1.5
GND
X5
P1.6 MISO
P1.7 SCK
RST
PAD11
PAD13
PAD15
C10: PAD20, PAD21
PAD21
GND
C10
100n
VCC
PAD20
C11: PAD22, PAD23
PAD23
GND
C11
100n
VCC
PAD22
C12
100n
C13
100n
0p, 100M parts not assembled.
Board useable for most types of 8051 style MCU in PLCC package.
All values shown for VCC=5V and IC2=89S53, for other type of MCU
and VCC adjust values according to MCU datasheet.
SENG digitale Systeme GmbH
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eLab - AT89xx/ATmega8515(L) board
REV:
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Sheet: 1/1