U3 (7805) NEEDS HEAT SINK FOR MAX DISSIPATION OF 1.7W
U2 (LM1117-3.3) NEEDS TOP SIDE COPPER AREA OF 0.5 SQin
U4 (LM1117-1.25) NEEDS TOP SIDE COPPER AREA OF 0.1 SQin

220mA MAX
170mA MAX

U3 7805 — PWRP — C1 10uF/25V/Elect. — VCC 5V — C24 10uF/10V/C
U2 LM1117MP-3.3CT — VC3 3.3V — C23 100uF/16V/Elect. — R18 0R
U4 LM1117MP-ADJ — VINT 1.25V — C30 100uF/16V/Elect.
GND — DGND

U6 MN13821K — VC3 — R6 3K3 — NRESET

C2 22pF/50V — V1 16.9344MHz — C10 22pF/50V — CLKIN — XTAL

NRESET — R4 3K3 — LRCK_D

U7 — VROUT0 — VROUT1 — RTXO — RTXI — RESET — NMI — PPI_CLK — PPI0 — PPI1 — PPI2 — PPI3 — PF15 — PF14 — PF13 — PF12 — PF11 — PF10 — PF9 — PF8 — PF7/SPISEL7 — PF6/SPISEL6 — PF5/SPISEL5 — PF4/SPISEL4 — PF3/SPISEL3 — PF2/SPISEL2 — PF1/SPISEL1/TMK — PF0/SPISS — SPCK — MISO — MOSI — DT1SEC — DT1PRI — TFS1 — TSCLK1 — DR1SEC — DR1PRI — RFS1 — RSCLK1 — DT0SEC — DT0PRI — TFS0 — TSCLK0 — DR0SEC — DR0PRI — RFS0 — RSCLK0 — TMR2 — TMR1 — TMR0 — TX — RX — EMU — TRST — SCKE — SMS — CLKOUT — SRAS — SCAS — SWE — SA10 — BR — ARDY — AMS0 — AMS1 — AMS2 — AMS3 — AOE — ARE — AWE — ABE0 — ABE1 — ADDR1 — ADDR2 — ADDR3 — ADDR4 — ADDR5 — ADDR6 — ADDR7 — ADDR8 — ADDR9 — ADDR10 — ADDR11 — ADDR12 — ADDR13 — ADDR14 — ADDR15 — ADDR16 — ADDR17 — ADDR18 — ADDR19 — BGH — BG — DATA0 — DATA1 — DATA2 — DATA3 — DATA4 — DATA5 — DATA6 — DATA7 — DATA8 — DATA9 — DATA10 — DATA11 — DATA12 — DATA13 — DATA14 — DATA15 — BMODE0 — BMODE1 — TCK — TDO — TDI — TMS
BF531SBST

C26 1uF/10V/C — C25 1uF/10V/C — C27 1uF/10V/C — C28 1uF/10V/C — VINT — DGND

H1 — H

TO IO BOARD
CN2A — HEADER 12X2 — AGND — GIN — EOUT — AGND — FBYPR — FONR — EPW — RFSW — EPCW — MIDIRX — PWRP — GND

EOUT — C33 22uF/10V/C — R68 27k — U9B TLC2272 — R65 15k — R67 3k — R12 1.8k — P1A 5K/Lin — TOP
C34 15nF/Mylar

AUDIO CODEC
U1 PCM3010 — VINL — VINR — VREF1 — VREF2 — VCOM — VOUTL — VOUTR — VCC — AGND — DEMP0 — DEMP1 — PDWN — SCK1 — MCLK — VDD — DGND — LRCK — BCK — DIN — DOUT — FMT0 — FMT1 — TEST
C3 10uF/10V/C — C4 22uF/10V/C — C5 10uF/10V/C — C6 10uF/10V/C — R10 330R — R11 330R — C9 10uF/10V/C — C8 10uF/10V/C — C7 10uF/10V/C — ADCDAT — R50 33 — R51 33 — R52 33 — R53 33 — R54 33
LRCK — BCK — DACDAT

R38 0R

VCC — C32 1uF/10V/C — U9A TLC2272 — R63 680k — C31 47nFM — R64 18k — R66 3k — P1B 5K/Lin — R13 1.8k — TOP — SENSITIVITY

CS1 0.47uF — D19A MMBD4148SE — R62 33k — R45 470k — R60 470k — D20A MMBD4148SE — C54 0.47uF — R61 33k

REMOTE FSW INTERFACE
R2 68R — Q2 MMBT3906 — RFSW — R32 10k — U12A LM393 — R17 1k — FSIN — Q1 MMBT3904 — R3 10K — C50 68pF — FSOUT

CURRENT LIMITED
EXPRESSION PEDAL REF SUPPLY
R30 1k — U12B LM393 — EPCW — C55 10uFC — PSREF — R31 10K — PMUX1
R37 1k

CAPS CLOSE TO ADC
C12 47nF — P0
C13 47nF — P1
C14 47nF — P2
C15 47nF — P3
C16 47nF — P4
C17 47nF — P5
C18 47nF — P6
C19 47nF — P7
C20 47nF — P8
C21 47nF — P9
C22 47nF — P10
C37 47nF — P11
C38 47nF — P12
C39 47nF — P13
C46 47nF — P14
C47 47nF — P15
C48 47nF — P16

EC-7885_IOrA
EC-7885_IOrA SCH

R1 3K3

DOWNLOAD/DEBUG
CN1 — CON10M — GND — SPCKB — MOSI — MISO — NBROMCS — NPCCS — NRESET

R58 33 — NBROMCS — MISO — U8 25C256 BOOT ROM 256Kb, SPI — CS — SO — WP — GND — VCC — HLD — CK — DI — SPCK — MOSI — C52 68pF — R7 3K3 — C29 47nF
R8 3K3 — R5 3K3
R14 3K3 — R15 3K3 — R16 3K3

ADDITIONAL POT MUX
U11 HC4052 — Y0 — Y2 — Y — Y3 — Y1 — X — X0 — X3 — INH — VEE — GND — A0 — A1 — VCC — X2 — X1 — P12 — P14 — P15 — P13 — P8 — P11 — PMUX1 — PMUX0
C36 47nF

POT AND BUTTON ADC
TLV1543
U10 — CH0 — CH1 — CH2 — CH3 — CH4 — CH5 — CH6 — CH7 — CH8 — CH9 — CH10 — VCC — CLK — EOC — ADDR — DO — REF+ — REF- — SPCKB — NPSCS — MOSI — MISO — PSREF
C35 1uF/10V/C — R33 10K — P16

2.5V REFERENCE
R9 470 — U5 LM431ACM3 — CA — AN — RF — C11 22uF/10V/C — PSREF

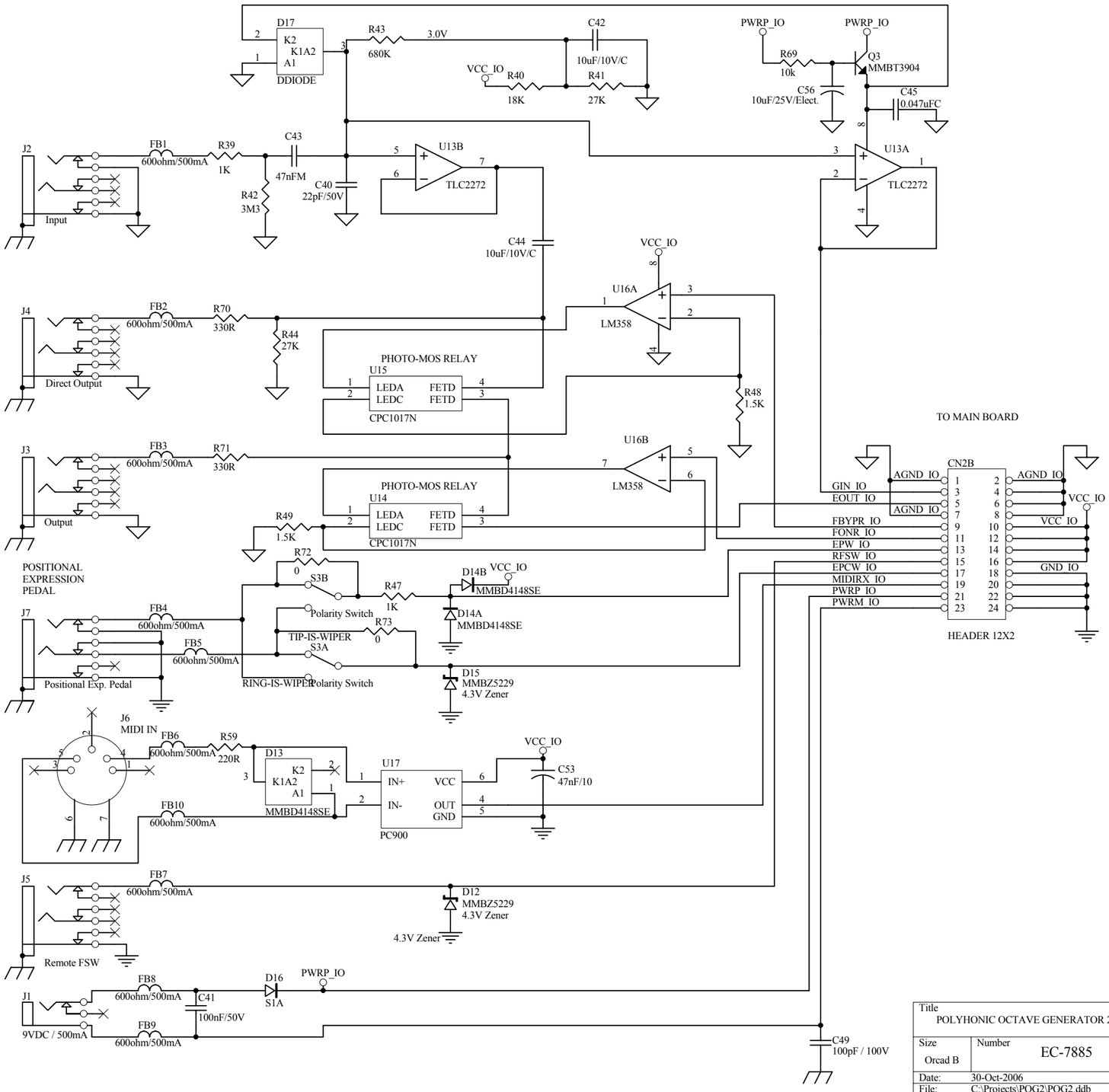
P0 10K/Lin — DRY MIX
P1 10K/Lin — SUB-SUB
P2 10K/Lin — SUBOCT
P3 10K/Lin — ORIG
P4 10K/Lin — 5th
P5 10K/Lin — OCTAVE
P6 10K/Lin — OCT+5th
P7 10K/Lin — 2OCTAVE
P8 10K/Lin — 2OCT+5TH
P9 10K/Lin — 3OCTAVE
P10 10K/Lin — 4OCTAVE
P11 10K/Lin — FILTER FREQ
P12 10K/Lin — FILTER RESONANCE
P13 10K/Lin Center — ATK-DCY LOW
P14 10K/Lin Center — ATK-DCY HIGH

CLIP — D1 LED — L10 — R29 220R
BASS MONO/POLY — D18 LED — L11 — R57 220R
EFFECT — D11 LED — L9 — R28 220R
ENVELOPE — D10 LED — L8 — R27 220R
PEDAL REVERSE — D9 LED — L7 — R26 220R

SYNTH FILTER — D2 LED — L6 — R19 220R
WAA-WAA — D3 LED — L5 — R20 220R
FREEZE+ VOLUME — D4 LED — L4 — R21 220R
GLISSANDO FREEZE — D5 LED — L3 — R22 220R
EFFECT VOLUME — D6 LED — L2 — R23 220R
WHOLETONE BEND — D7 LED — L1 — R24 220R
OCTAVE BEND — D8 LED — L0 — R25 220R

R34 2K2 — BYPASS FSW CN4 — CON2
R55 2K2 — ENV FSW CN3 — CON2
R35 2K2 — EXP Button FSW CN5 — CON2
S1 — PEDAL REVERSE
R36 2K2 — S2 — PEDAL MODE
R56 2K2 — S4 — BASS MONO

Title	POLYHONIC OCTAVE GENERATOR 2 MAIN BOARD		
Size: Orcad C	Number: EC-7885	Revision: A	
Date: 30-Oct-2006		Sheet 1 of 2	
File: C:\Projects\POG2\POG2.ddb		Drawn By: David Cockerell	


D17
K2
K1A2
A1
DDIODE
R43
680K
3.0V
C42
10uF/10V/C
VCC_IO
R40
18K
R41
27K
PWRP_IO
PWRP_IO
R69
10k
Q3
MMBT3904
C56
10uF/25V/Elect.
C45
0.047uFC
J2
FB1
600ohm/500mA
R39
1K
C43
47nFM
R42
3M3
C40
22pF/50V
Input
U13B
TLC2272
U13A
TLC2272
C44
10uF/10V/C
VCC_IO
U16A
LM358
J4
FB2
600ohm/500mA
R70
330R
R44
27K
Direct Output
PHOTO-MOS RELAY
U15
LEDA
LEDC
FETD
FETD
CPC1017N
R48
1.5K
TO MAIN BOARD
U16B
LM358
J3
FB3
600ohm/500mA
R71
330R
Output
PHOTO-MOS RELAY
U14
LEDA
LEDC
FETD
FETD
CPC1017N
R49
1.5K
CN2B
AGND_IO
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EOUT_IO
AGND_IO
FBYPR_IO
FONR_IO
EPW_IO
RFSW_IO
EPCW_IO
MIDIRX_IO
PWRP_IO
PWRM_IO
AGND_IO
VCC_IO
VCC_IO
GND_IO
HEADER 12X2
POSITIONAL
EXPRESSION
PEDAL
R72
0
S3B
D14B
MMBD4148SE
VCC_IO
R47
1K
D14A
MMBD4148SE
J7
FB4
600ohm/500mA
FB5
600ohm/500mA
Positional Exp. Pedal
Polarity Switch
TIP-IS-WIPER
R73
0
S3A
RING-IS-WIPER
Polarity Switch
D15
MMBZ5229
4.3V Zener
J6
MIDI IN
FB6
600ohm/500mA
R59
220R
D13
K2
K1A2
A1
MMBD4148SE
FB10
600ohm/500mA
U17
IN+
IN-
VCC
OUT
GND
PC900
VCC_IO
C53
47nF/10
J5
FB7
600ohm/500mA
Remote FSW
D12
MMBZ5229
4.3V Zener
4.3V Zener
J1
FB8
600ohm/500mA
C41
100nF/50V
FB9
600ohm/500mA
9VDC / 500mA
D16
S1A
PWRP_IO
C49
100pF / 100V
Title
POLYHONIC OCTAVE GENERATOR 2 I/O BOARD
Size
Orcad B
Number
EC-7885
Revision
A
Date:
30-Oct-2006
Sheet 2 of 2
File:
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Drawn By:
David Cockerell