68040

U22
MC68040_33MHZ

CLKPCLK R9
CLKBCLK R7
CLOCKS/STATUS
PCLK
BCLK
PST(3:0)

AD(31:0)
D(31:0)
A(31:0)
BUS

TTR(1:0)
SIZR(1:0)
R_WR N16
TT(1:0)
SIZ(1:0)
R_W
TRANSFER TRAITS
TM(2:0)
TLN(1:0)
UPA(1:0)
_LOCK S18 _LOCKR
_LOCKE R18 _LOCKER
_CIOUT R1

_TSR R16
_TA T14
_TEA S13
_TCITBI T10
S11
PULLUP1 T9
_TS
_TA
_TEA
_TCI
_TBI
DLE
TRANSFER CONTROL
_TIP R15

_BG(0) T13
_BBR T17
_BG
_BB
ARB
_BR T18 _BRR(0)

_IPL(2:0)
_AVEC T11
_IPL(2:0)
_AVEC
_IPEND S1

SC(1:0)
SC(1:0)
_MI Q16

_RESETOUT S7
_MODEN T5
PULLUP1 S6
_RSTI
_CDIS
_MDIS
RESET
_RSTO R3 _CPURSTIN

TESTTDI S3
TESTTCK S4
TESTTMS S5
PON T3
TDI
TCK
TMS
_TRST
JTAQ
TDO T2 TESTTDO040

TMC

U38
TMC_CHIP

CLK100MTTLN 179
CLKBCLK 144
145
CLK100
BCLKIN
BCLKE
CLOCKS
CLK20 177 CLK20
CLK25 176 CLK25
CLK33 175 CLK33

AD(31:0)
SIZ(1:0)
R_W 96
TT(1:0)
AD(31:0)
SIZ(1:0)
_RW
TT(1:0)
SYSTEM BUS

_TS 101
_TA 100
_TEA 99
_TCITBI 98
_TS
_TA
_TEA
_TCITBI

_BR(2:0)
_BB 102
_LOCK 151
_LOCKE 147
_BR(2:0)
_BB
_LOCK
_LOCKE
ARBITRATION
_BG(2:0) _BG(2:0)

PON 163
_CPURSTIN 162
_RSTOUT 161
PON
_CPURSTIN
_RESETIN
RST
_RESETOUT 160 _RESETOUT

VD(15:0)
_VRAS 182
_VCAS(1:0) 14
_VWE
VMA(8:0)
_VDTOE 18 _VDTOE
VDSF 19 VDSF
_VSYNC 15
HSYNC_ 13 _HSYNC
VBLANK_ 17 VBLANK
_VSOE(1:0)
VSC(1:0) CLKVSC(1:0)
CLKVCLK 173
VCLK
VLOAD 10 VLOAD
VIDEO

PD0(3:0)
PD1(3:0)
PD0(3:0)
PD1(3:0)
_RASA 44 _RASA
_RASB 40 _RASB
_RASC 42 _RASC
_RASD 41 _RASD
_RASV 43 _RASV
_CAS0(3:0) _CAS0(3:0)
_CAS1(3:0) _CAS1(3:0)
_WE(3:0) _WE(3:0)
MA0(10:0) MA0(10:0)
MA1(10:0) MA1(10:0)
_ROMSEL 20 _ROMSEL
MEM CTL

_RDLE0 23 _RDLE0
_RDLE1 22 _RDLE1
_RDLOE0 28 _RDLOE0
_RDLOE1 27 _RDLOE1
WRLE0 26 WRLE0
WRLE1 25 WRLE1
_WRLOE 24 _WRLOE
LATCH CTL

ADBDATAIN 169
ADBDATAIN
ADB
ADBDRIVE 171 ADBDRIVE

GPOUT 172 GPOUT
_TMCINT(2:0) _TMCINT(2:0)
MISC

TESTDOPC 166
TESTTCK 164
TESTTMS 165
168
TDI
TCK
TMS
ATPG
JTAG
TDO 167 TESTTDOTMC

EPROM

MA0R(10:0) 10:0
MA1R(5:0) 16:11
ROM_A(16:0)
A(16:0) D(7:0) ROM_D(7:0) 7:4 PD0(3:0) 3:0 PD1(3:0)
_ROMSEL R101 261 _ROMSELR
22 _CE
24 _OE
31 _P
1 VPP
VCC
U2
AM27C010

RESET INVERTER

U5
74ACT00
RESETOUT 1 2 3 _CONFIGRST

U39
74F00
RESETOUT 1 2 3 RESETOUT

CLOCK SPEED SELECT

CLKC20M R139 10 NO LOAD
CLKC25M R138 10 CLK25PLLIN

GPOUT JUMPER

GPOUT NO_LOAD 1 2 JP10

LA TEST POINTS

_TMCINT(0) NO_LOAD 1 2 JP5
_TMCINT(1) NO_LOAD 1 2 JP8
_BR(1) NO_LOAD 1 2 JP9
_TMCINT(2) NO_LOAD 1 2 JP4
_BG(1) NO_LOAD 1 2 JP6
_RSTOUT NO_LOAD 1 2 JP7

INTERLEAVE LATCH CLOCKS

U39
74F00
WRLE1 4 5 6 _LATWRLE1 R110 10 _LATWRLE1R
CLKBCLKB 9 10 8 _LATWRLE0 R123 10 _LATWRLE0R
WRLE0
U39
74F00

PULLUPS

VCC
R71 10K PULLUP1
R70 10K _BB
R68 10K _AVEC
R79 221 _LOCK
R81 221 _LOCKE

CURRENT SELECTS

VCC
R57 10K NO LOAD 2
R58 10K NO LOAD 1
R59 10K NO LOAD 0
_IPL(2:0)

LOW CURRENT SELECT:
2 Installed = DATA BUS
1 Installed = ADDRESS and CONTROL
0 Installed = ARBITRATION and MISC

CONFIGURATION

_CONFIGRST
CR12 MMBD201T1 15
CR11 MMBD201T1 NO_LOAD 14
CR10 MMBD201T1 13
CR9 MMBD201T1 NO_LOAD 12
AD(31:0)

BITS 15:12 = CPU TYPE: 0100 = TURBO
0101 = TURBOC

_CONFIGRST
CR16 MMBD201T1 NO_LOAD 11
CR8 MMBD201T1 NO_LOAD 10
CR15 MMBD201T1 NO_LOAD 9
CR22 MMBD201T1 NO_LOAD 8
AD(31:0)

BITS 11:8 = Board Revision

_CONFIGSPD
_CONFIGRST
CR20 MMBD201T1 NO_LOAD 1
CR19 MMBD201T1 0
AD(31:0)

BITS 2:0 = CPU SPEED: 101 = 20MHZ
110 = 25MHZ
111 = 33MHZ

MEMSPSEL1
MEMSPSEL0
CR14 MMBD201T1 5
CR21 MMBD201T1 4
AD(31:0)

BITS 5:4 = MEM SPEED: 11 = 100NS
10 = 80NS
01 = 70NS

ADB DRIVER

VCC
2
CR13
3
1
MMBD7000L
FL2
100MHz
ADBJ
ADBF
R126 1.0K ADBDATAIN

VCC
R55 475
Q5 MMBT4401T1 ADBF
ADBDRIVE
R56 1.0K ADBDRVRES

SPEED JUMPER

VCC
R145 10K
NO_LOAD 1 2 JP11
SPEEDSEL
R6 1.0K

VCC
R137 10K

U6
74ACT00
RESETOUT 1 2 3 _CONFIGSPD

PHASE LOCKED LOOP

PWRPLLVCC
PWRPLLGND
C109 0.1 50V
L5 10uH
PLLSIG1
C111 0.1 50V
C110 3300PF 50V
VCC
L6 10uH
R136 1.0M
R135 1.0K
RC1
10
8
9
GNDA U45 VCCA
MC88915FN70
RC1
CLKPLLQ3
CLKC33M
CLK25PLLIN
TESTPLLEN
5 FEEDBACK
7 SYNC(0)
11 SYNC(1)
6 REFSEL
18 PLLEN
12 FREQSEL
4 _RST
LOCK 19
CLKPLLOUTX2 26
2XQ
Q0 14
CLKPLLQ0 16
Q1 21
Q2 23
Q3 28
CLKPLLQ5 2
_Q5 25
QDIV2
R144 40.2 CLKPCLK
R142 21.5 CLKBCLK
R143 40.2 CLKBCLKB
R93 162
VCC
C112 0.1 50V
C121 3300PF 50V
C120 3300PF 50V
C115 3300PF 50V
C114 3300PF 50V
C116 3300PF 50V

U6
74ACT00
U6
74ACT00
U6
74ACT00

PN4243.AC	Color Turbo
Sheet 2	of 16

CPU : TMC : EPROM : PLL : CONFIG : ADB

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