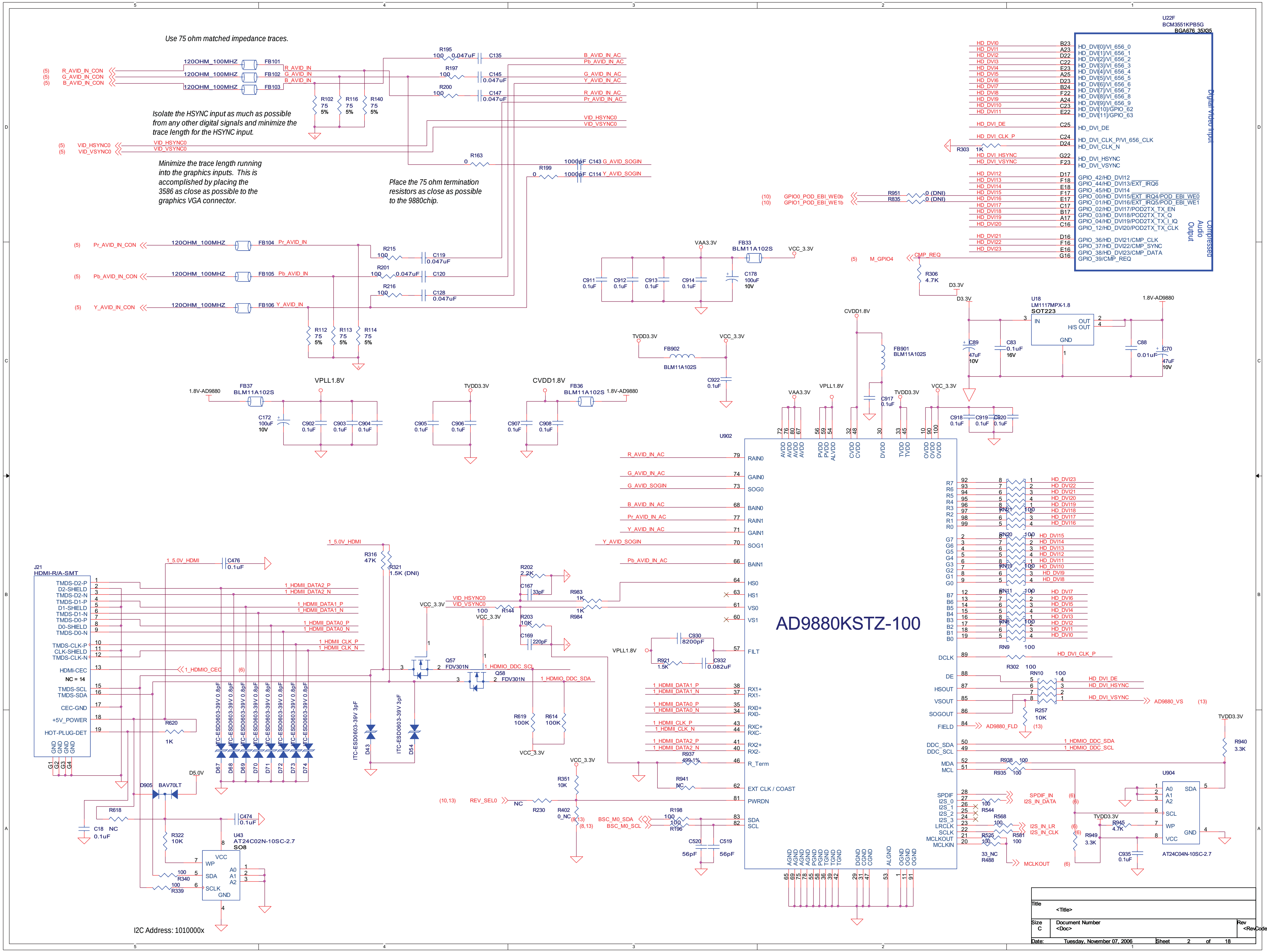

Use 75 ohm matched impedance traces.
R_AVID_IN_CON
G_AVID_IN_CON
B_AVID_IN_CON
120OHM_100MHZ
FB101
FB102
FB103
R102 75 5%
R116 75 5%
R140 75 5%
R195 100 0.047uF C135
R197 100 C145 0.047uF
R200 100 C147 0.047uF
B_AVID_IN_AC
Pb_AVID_IN_AC
G_AVID_IN_AC
Y_AVID_IN_AC
R_AVID_IN_AC
Pr_AVID_IN_AC
VID_HSYNC0
VID_VSYNC0
Isolate the HSYNC input as much as possible from any other digital signals and minimize the trace length for the HSYNC input.
Minimize the trace length running into the graphics inputs. This is accomplished by placing the 3586 as close as possible to the graphics VGA connector.
Place the 75 ohm termination resistors as close as possible to the 9880chip.
R163 0 1000pF C143 G_AVID_SOGIN
R199 0 1000pF C114 Y_AVID_SOGIN
Pr_AVID_IN_CON
Pb_AVID_IN_CON
Y_AVID_IN_CON
FB104 Pr_AVID_IN
FB105 Pb_AVID_IN
FB106 Y_AVID_IN
R215 100 C119 0.047uF
R201 100 0.047uF C120
R216 100 C128 0.047uF
R112 75 5%
R113 75 5%
R114 75 5%
U22F
BCM3551KPB5G
BGA676_35X35
Digital Video Input
Compressed Audio Output
HD_DVI_DE
HD_DVI_CLK_P
HD_DVI_HSYNC
HD_DVI_VSYNC
R303 1K
GPIO0_POD_EBI_WE0b
GPIO1_POD_EBI_WE1b
R951 0 (DNI)
R835 0 (DNI)
M_GPIO4
CMP_REQ
R306 4.7K
VAA3.3V
FB33 BLM11A102S
VCC_3.3V
C911 0.1uF
C912 0.1uF
C913 0.1uF
C914 0.1uF
C178 100uF 10V
U18
LM1117MPX-1.8
SOT223
1.8V-AD9880
D3.3V
C89 47uF 10V
C83 0.1uF 16V
C88 0.01uF
C70 47uF 10V
CVDD1.8V
FB901 BLM11A102S
TVDD3.3V
FB902 BLM11A102S
C922 0.1uF
C917 0.1uF
VPLL1.8V
FB37 BLM11A102S
C172 100uF 10V
C902 0.1uF
C903 0.1uF
C904 0.1uF
C905 0.1uF
C906 0.1uF
FB36 BLM11A102S
C907 0.1uF
C908 0.1uF
C918 0.1uF
C919 0.1uF
C920 0.1uF
U902
AD9880KSTZ-100
J21
HDMI-R/A-SMT
TMDS-D2-P
D2-SHIELD
TMDS-D2-N
TMDS-D1-P
D1-SHIELD
TMDS-D1-N
TMDS-D0-P
D0-SHIELD
TMDS-D0-N
TMDS-CLK-P
CLK-SHIELD
TMDS-CLK-N
HDMI-CEC
NC = 14
TMDS-SCL
TMDS-SDA
CEC-GND
+5V_POWER
HOT-PLUG-DET
1_5.0V_HDMI
C476 0.1uF
R316 47K
R321 1.5K (DNI)
Q57 FDV301N
Q58 FDV301N
1_HDMIO_CEC
1_HDMIO_DDC_SCL
1_HDMIO_DDC_SDA
ITC-ESD0603-39V 0.8pF
ITC-ESD0603-39V 3pF
R620 1K
D905 BAV70LT
D5.0V
R618
C18 NC 0.1uF
C474 0.1uF
R322 10K
U43
AT24C02N-10SC-2.7
SO8
R340 100
R339 100
I2C Address: 1010000x
R202 2.2K
C167 33pF
R983 1K
R984 1K
R144 100
R203 10K
C169 220pF
C930 8200pF
R921 1.5K
C932 0.082uF
R619 100K
R614 100K
R937 499 1%
R941 NC
REV_SEL0
NC
R230
R402 0_NC
R351 10K
BSC_M0_SDA
BSC_M0_SCL
R198 100
R196 100
C520 56pF
C519 56pF
R_Term
EXT CLK / COAST
PWRDN
RN21 100
RN20 100
RN19 100
RN11 100
RN8 100
RN9 100
R302 100
RN10 100
R257 10K
AD9880_VS
AD9880_FLD
R938 100
R935 100
SPDIF_IN
I2S_IN_DATA
I2S_IN_LR
I2S_IN_CLK
MCLKOUT
R544 100
R568 100
R525 100
R581 100
R488 33_NC
U904
AT24C04N-10SC-2.7
R940 3.3K
R949 3.3K
R945 4.7K
C935 0.1uF
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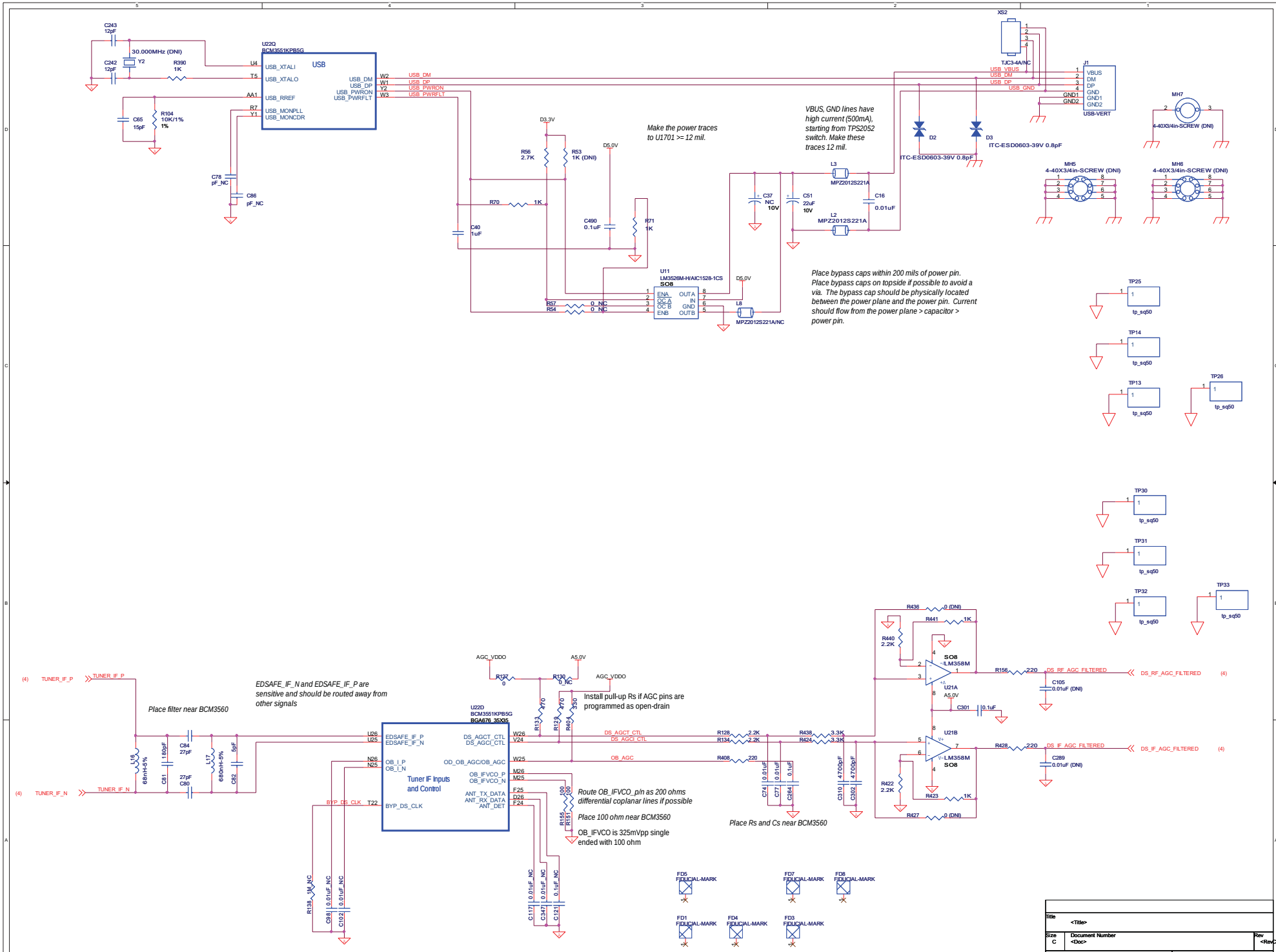
C243 12pF
30.000MHz (DNI)
C242 12pF
Y2
R390 1K
U22Q BCM3551KPB5G
USB
USB_XTALI
USB_XTALO
USB_RREF
USB_MONPLL
USB_MONCDR
USB_DM
USB_DP
USB_PWRON
USB_PWRFLT
C85 15pF
R104 10K/1% 1%
C78 pF_NC
C86 pF_NC
R7
Y1
USB_DM
USB_DP
USB_PWRON
USB_PWRFLT
XS2
TJC3-4A/NC
USB_VBUS
USB_DN
USB_DP
USB_GND
J1
VBUS
DM
DP
GND
GND1
GND2
USB-VERT
MH7
4-40X3/4in-SCREW (DNI)
MH5
4-40X3/4in-SCREW (DNI)
MH6
4-40X3/4in-SCREW (DNI)
D3.3V
R56 2.7K
R53 1K (DNI)
D5.0V
R70 1K
C40 1uF
C490 0.1uF
R71 1K
Make the power traces to U1701 >= 12 mil.
VBUS, GND lines have high current (500mA), starting from TPS2052 switch. Make these traces 12 mil.
D2
ITC-ESD0603-39V 0.8pF
D3
ITC-ESD0603-39V 0.8pF
L3
MPZ2012S221A
L2
MPZ2012S221A
C37 NC 10V
C51 22uF 10V
C16 0.01uF
U11
LM3526M-H/AIC1528-1CS
SO8
ENA
OC A
OC B
ENB
OUTA
IN
GND
OUTB
R57 0_NC
R54 0_NC
L8
MPZ2012S221A/NC
Place bypass caps within 200 mils of power pin. Place bypass caps on topside if possible to avoid a via. The bypass cap should be physically located between the power plane and the power pin. Current should flow from the power plane > capacitor > power pin.
TP25
TP14
TP13
TP26
TP30
TP31
TP32
TP33
tp_sq50
(4) TUNER_IF_P
TUNER_IF_P
(4) TUNER_IF_N
TUNER_IF_N
Place filter near BCM3560
EDSAFE_IF_N and EDSAFE_IF_P are sensitive and should be routed away from other signals
L16 68nH-5%
C84 27pF
C81 1.8pF
C80 27pF
L17 68nH-5%
C82 5pF
AGC_VDDO
A5.0V
R127 0
R130 0_NC
Install pull-up Rs if AGC pins are programmed as open-drain
R133 470
R129 470
R60 330
U22D
BCM3551KPB5G
BGA676_35X35
EDSAFE_IF_P
EDSAFE_IF_N
OB_I_P
OB_I_N
BYP_DS_CLK
Tuner IF Inputs and Control
DS_AGCT_CTL
DS_AGCI_CTL
OD_OB_AGC/OB_AGC
OB_IFVCO_P
OB_IFVCO_N
ANT_TX_DATA
ANT_RX_DATA
ANT_DET
DS_AGCT_CTL
DS_AGCI_CTL
OB_AGC
Route OB_IFVCO_p/n as 200 ohms differential coplanar lines if possible
Place 100 ohm near BCM3560
OB_IFVCO is 325mVpp single ended with 100 ohm
R155 100
R151 100
R138 1K_NC
C98 0.01uF_NC
C102 0.01uF_NC
C117 0.01uF_NC
C347 0.01uF_NC
C121 0.1uF_NC
R436 0 (DNI)
R441 1K
R440 2.2K
SO8
LM358M
U21A
A5.0V
C301 0.1uF
R156 220
DS_RF_AGC_FILTERED
C105 0.01uF (DNI)
R128 2.2K
R134 2.2K
R438 3.3K
R424 3.3K
R408 220
C74 0.01uF
C77 0.01uF
C264 0.1uF
C310 4700pF
C302 4700pF
Place Rs and Cs near BCM3560
U21B
R428 220
DS_IF_AGC_FILTERED
C289 0.01uF (DNI)
R422 2.2K
R423 1K
R427 0 (DNI)
FD5 FIDUCIAL-MARK
FD7 FIDUCIAL-MARK
FD8 FIDUCIAL-MARK
FD1 FIDUCIAL-MARK
FD4 FIDUCIAL-MARK
FD3 FIDUCIAL-MARK
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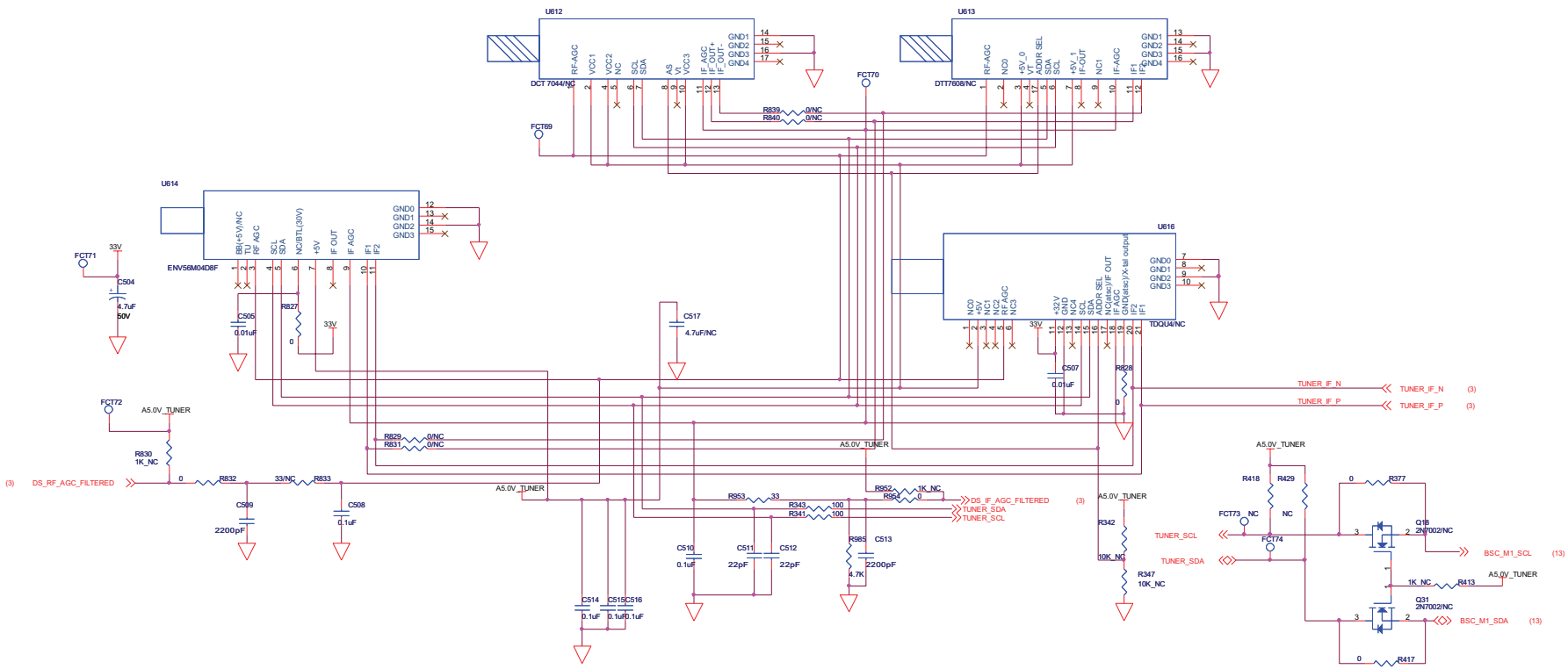

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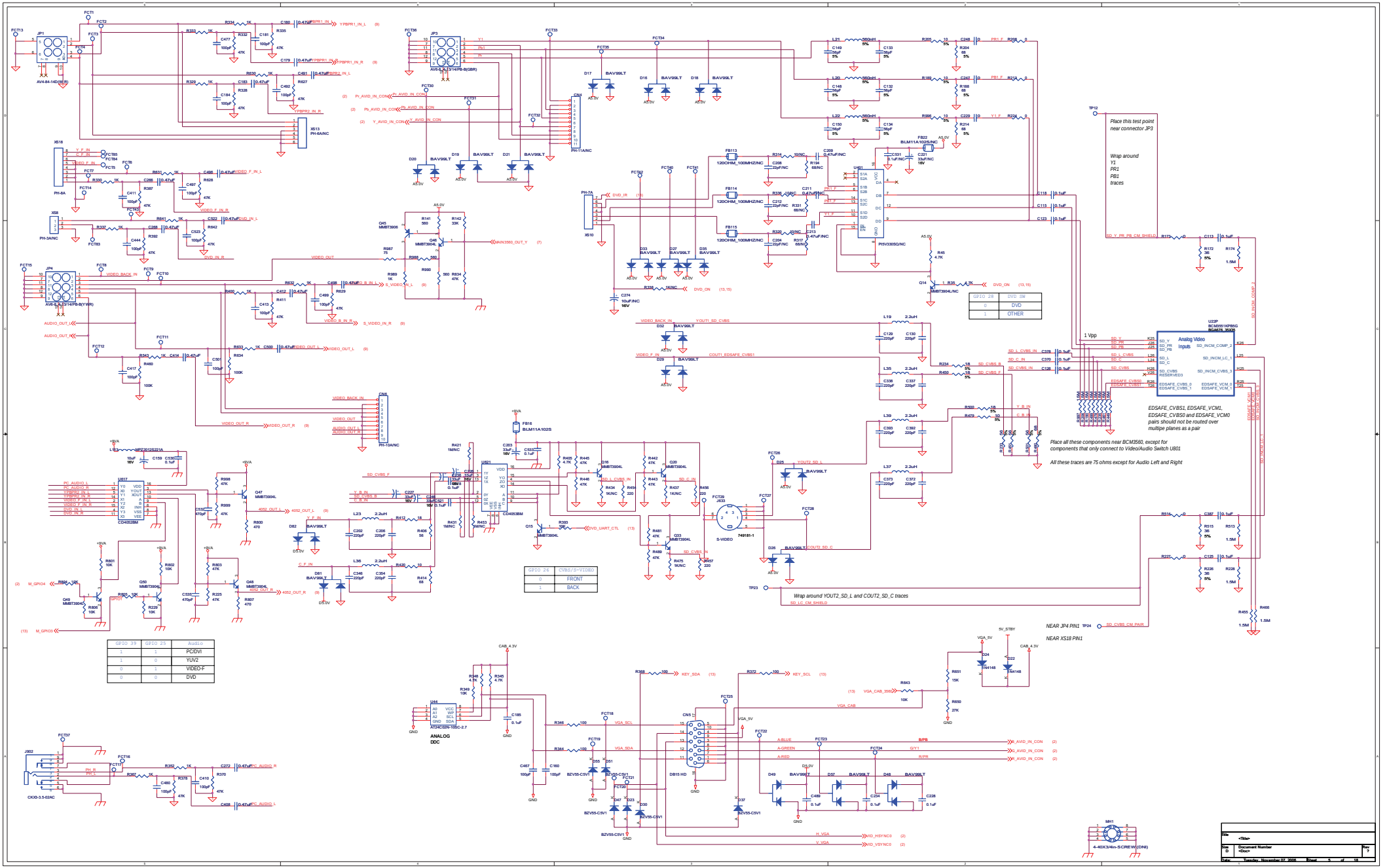
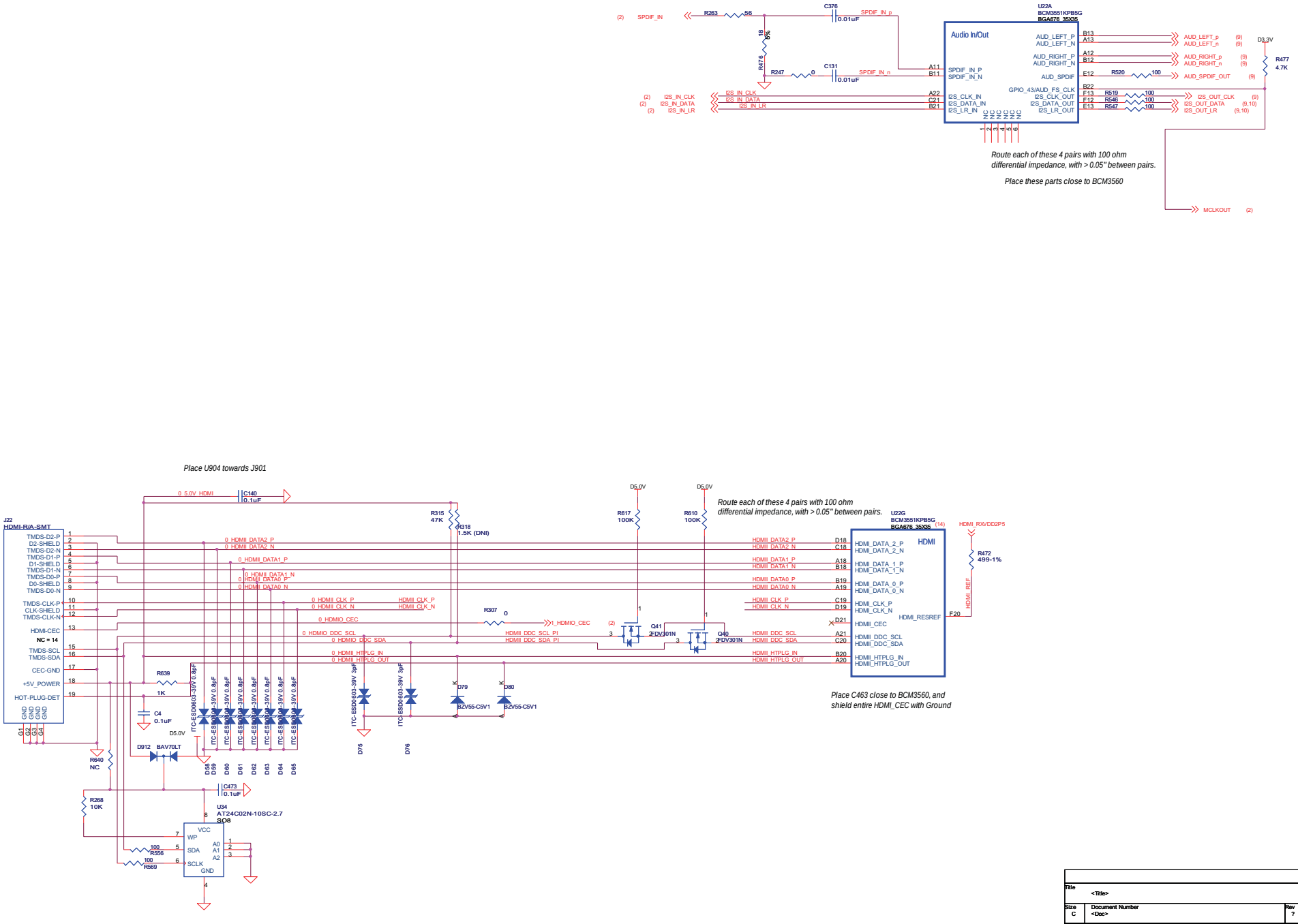

Place this test point near connector JP3
Wrap around Y1 PR1 PB1 traces
Place all these components near BCM3560, except for components that only connect to Video/Audio Switch U801
All these traces are 75 ohms except for Audio Left and Right
EDSAFE_CVBS1, EDSAFE_VCM1, EDSAFE_CVBS0 and EDSAFE_VCM0 pairs should not be routed over multipe planes as a pair
Wrap around YOUT2_SD_L and COUT2_SD_C traces
NEAR JP4 PIN1
NEAR XS18 PIN1
ANALOG DDC
Analog Video Inputs
S-VIDEO
DB15 HD
1 Vpp
GPIO 26 CVBS/S-VIDEO
0 FRONT
1 BACK
GPIO 28 DVD SW
0 DVD
1 OTHER
GPIO 39 GPIO 25 Audio
1 1 PC/DVI
1 0 YUV2
0 1 VIDEO-F
0 0 DVD


U22A
BCM3551KPB5G
BGA676_35X35
Audio In/Out
SPDIF_IN
SPDIF_IN_P
SPDIF_IN_N
I2S_IN_CLK
I2S_IN_DATA
I2S_IN_LR
I2S_CLK_IN
I2S_DATA_IN
I2S_LR_IN
AUD_LEFT_P
AUD_LEFT_N
AUD_RIGHT_P
AUD_RIGHT_N
AUD_SPDIF
GPIO_43/AUD_FS_CLK
I2S_CLK_OUT
I2S_DATA_OUT
I2S_LR_OUT
AUD_LEFT_p
AUD_LEFT_n
AUD_RIGHT_p
AUD_RIGHT_n
AUD_SPDIF_OUT
I2S_OUT_CLK
I2S_OUT_DATA
I2S_OUT_LR
MCLKOUT
D3.3V
R477
4.7K
Route each of these 4 pairs with 100 ohm
differential impedance, with > 0.05" between pairs.
Place these parts close to BCM3560
Place U904 towards J901
J22
HDMI-R/A-SMT
TMDS-D2-P
D2-SHIELD
TMDS-D2-N
TMDS-D1-P
D1-SHIELD
TMDS-D1-N
TMDS-D0-P
D0-SHIELD
TMDS-D0-N
TMDS-CLK-P
CLK-SHIELD
TMDS-CLK-N
HDMI-CEC
NC = 14
TMDS-SCL
TMDS-SDA
CEC-GND
+5V_POWER
HOT-PLUG-DET
0_5.0V_HDMI
C140
0.1uF
R315
47K
R318
1.5K (DNI)
R307
0
R617
100K
R610
100K
Route each of these 4 pairs with 100 ohm
differential impedance, with > 0.05" between pairs.
U22G
BCM3551KPB5G
BGA676_35X35
HDMI
HDMI_DATA_2_P
HDMI_DATA_2_N
HDMI_DATA_1_P
HDMI_DATA_1_N
HDMI_DATA_0_P
HDMI_DATA_0_N
HDMI_CLK_P
HDMI_CLK_N
HDMI_CEC
HDMI_DDC_SCL
HDMI_DDC_SDA
HDMI_HTPLG_IN
HDMI_HTPLG_OUT
HDMI_RESREF
HDMI_REF
R472
499-1%
Q41
2FDV301N
Q40
2FDV301N
R639
1K
C4
0.1uF
D5.0V
D912
BAV70LT
R640
NC
R268
10K
C473
0.1uF
U34
AT24C02N-10SC-2.7
SO8
R556
100
R569
100
D79
BZV55-C5V1
D80
BZV55-C5V1
Place C463 close to BCM3560, and
shield entire HDMI_CEC with Ground
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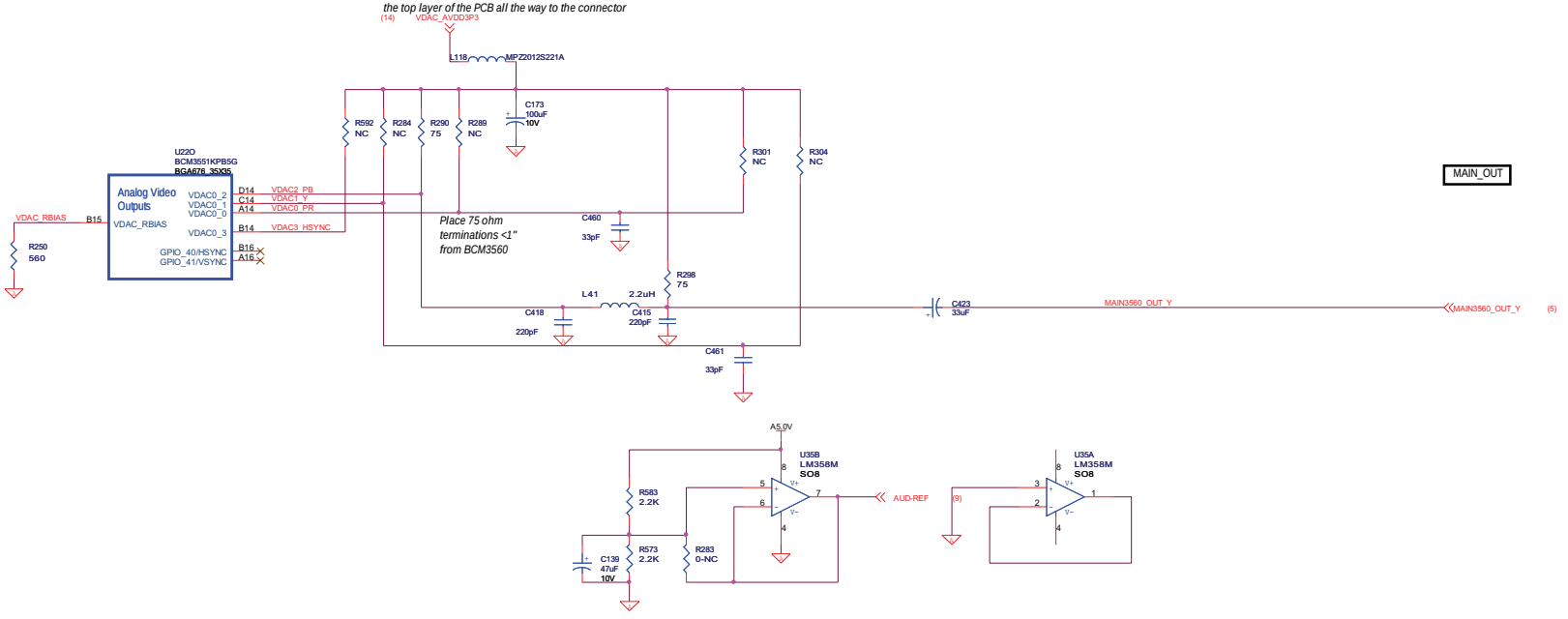
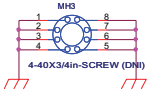
VDAC_AVDD33 needs to be very clean. If you use switching supplies, consider using a small linear regulator for this supply. (250 mA worst case)

Route VDAC_AVDD33 as a wide trace or fill area on the top layer of the PCB all the way to the connector





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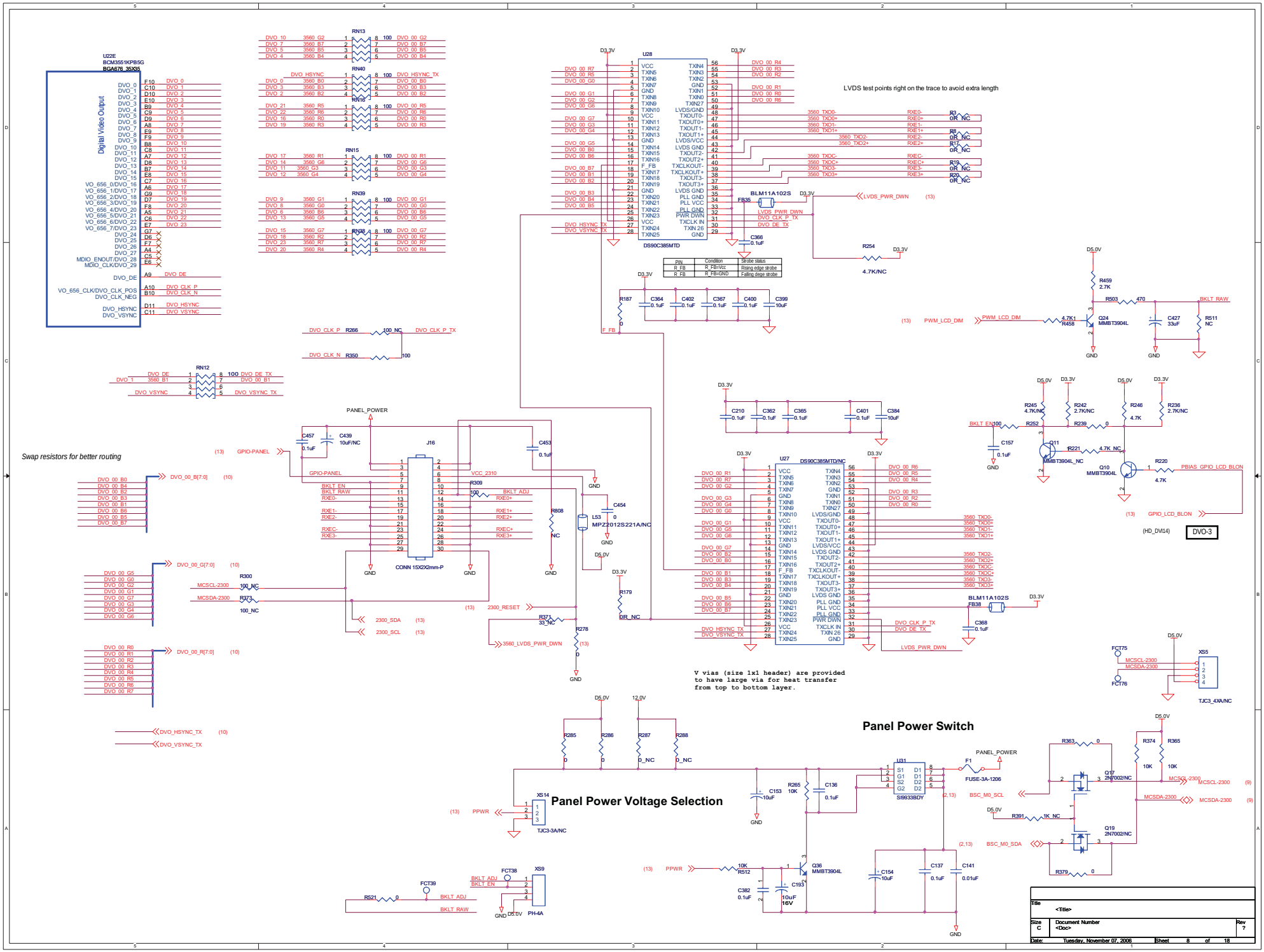
U22E
BCM3551KPB5G
BGA676 35X35
Digital Video Output
DVO_0
DVO_1
DVO_2
DVO_3
DVO_4
DVO_5
DVO_6
DVO_7
DVO_8
DVO_9
DVO_10
DVO_11
DVO_12
DVO_13
DVO_14
DVO_15
DVO_16
DVO_17
DVO_18
DVO_19
DVO_20
DVO_21
DVO_22
DVO_23
DVO_24
DVO_25
DVO_26
DVO_27
DVO_28
DVO_29
DVO_DE
DVO_CLK_P
DVO_CLK_N
DVO_HSYNC
DVO_VSYNC
MDIO_ENOUT/DVO_28
MDIO_CLK/DVO_29
VO_656_0/DVO_16
VO_656_1/DVO_17
VO_656_2/DVO_18
VO_656_3/DVO_19
VO_656_4/DVO_20
VO_656_5/DVO_21
VO_656_6/DVO_22
VO_656_7/DVO_23
VO_656_CLK/DVO_CLK_POS
DVO_CLK_NEG
RN13
RN40
RN16
RN15
RN39
RN38
RN12
U28
DS90C385MTD
U27
DS90C385MTD/NC
LVDS test points right on the trace to avoid extra length
Swap resistors for better routing
PANEL_POWER
J16
CONN 15X2X2mm-P
GPIO-PANEL
PWM_LCD_DIM
BKLT_RAW
BKLT_EN
BKLT_ADJ
PBIAS_GPIO_LCD_BLON
GPIO_LCD_BLON
LVDS_PWR_DWN
3560_LVDS_PWR_DWN
2300_RESET
2300_SDA
2300_SCL
MCSCL-2300
MCSDA-2300
PPWR
BSC_M0_SCL
BSC_M0_SDA
V vias (size 1x1 header) are provided to have large via for heat transfer from top to bottom layer.
Panel Power Switch
Panel Power Voltage Selection
SI9933BDY
MMBT3904L
MMBT3904L_NC
MPZ2012S221A/NC
BLM11A102S
DS90C385MTD
TJC3-3A/NC
TJC3_4XA/NC
PH-4A
FUSE-3A-1206
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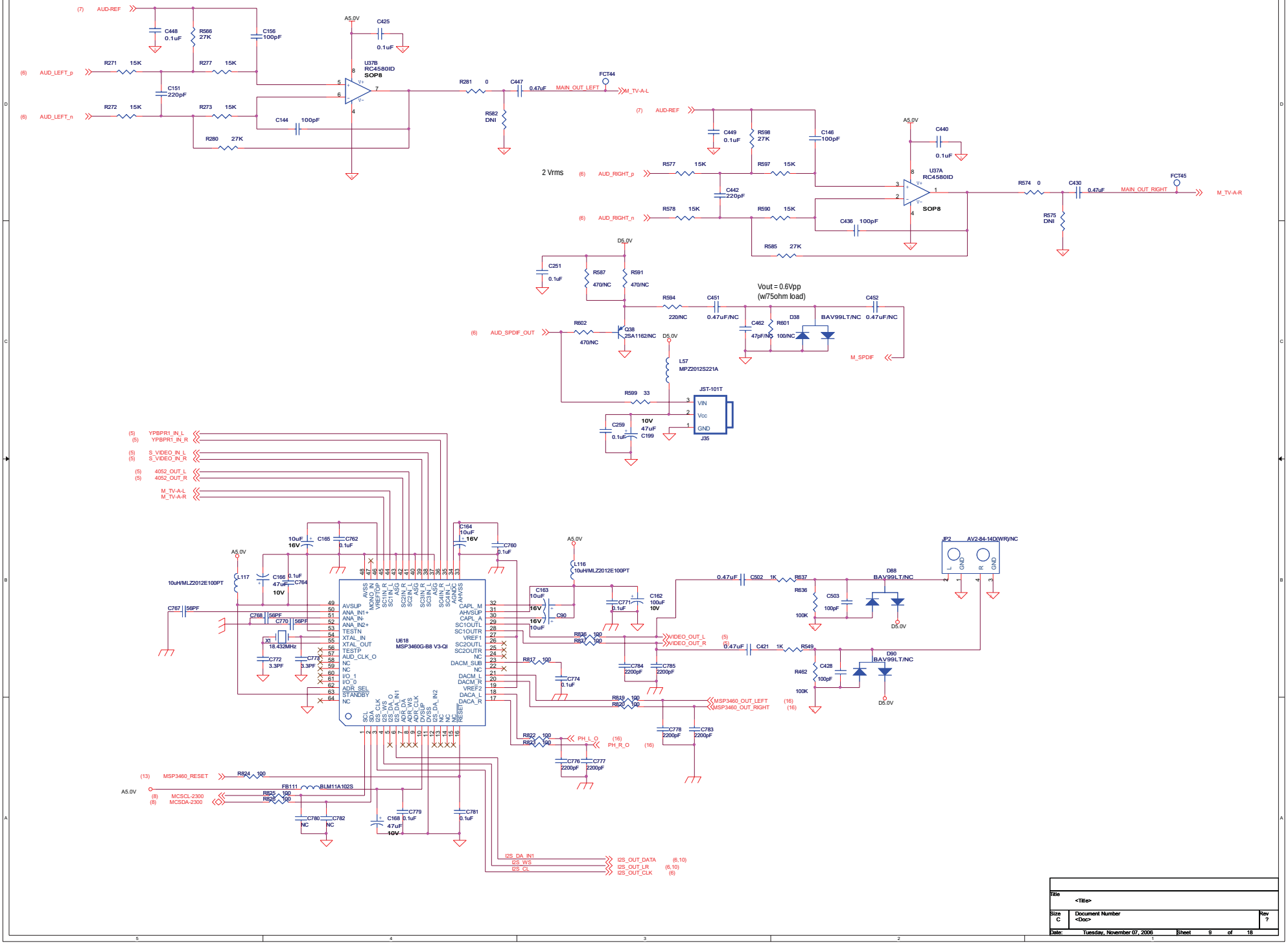
DVO-3
(HD_DVI4)


(7) AUD-REF
C448 0.1uF
R566 27K
C156 100pF
R271 15K
R277 15K
(6) AUD_LEFT_p
C151 220pF
R272 15K
R273 15K
(6) AUD_LEFT_n
R280 27K
C144 100pF
A5.0V
C425 0.1uF
U37B RC4580ID SOP8
R281 0
C447 0.47uF
MAIN_OUT_LEFT
FCT44
M_TV-A-L
R582 DNI
2 Vrms
(7) AUD-REF
C449 0.1uF
R598 27K
C146 100pF
R577 15K
R597 15K
(6) AUD_RIGHT_p
C442 220pF
R578 15K
R590 15K
(6) AUD_RIGHT_n
C436 100pF
R585 27K
A5.0V
C440 0.1uF
U37A RC4580ID SOP8
R574 0
C430 0.47uF
MAIN_OUT_RIGHT
FCT45
M_TV-A-R
R575 DNI
D5.0V
C251 0.1uF
R587 470/NC
R591 470/NC
Vout = 0.6Vpp
(w/75ohm load)
R594 220/NC
C451 0.47uF/NC
C452 0.47uF/NC
C482 47pF/NC
R601 100/NC
D38 BAV99LT/NC
(6) AUD_SPDIF_OUT
R602 470/NC
Q38 2SA1162/NC
L57 MPZ2012S221A
M_SPDIF
R599 33
JST-101T
VIN
Vcc
GND
J35
C259 0.1uF
10V
47uF
C199
(5) YPBPR1_IN_L
(5) YPBPR1_IN_R
(5) S_VIDEO_IN_L
(5) S_VIDEO_IN_R
(5) 4052_OUT_L
(5) 4052_OUT_R
M_TV-A-L
M_TV-A-R
A5.0V
10uF 16V C165
C762 0.1uF
C164 10uF 16V
C760 0.1uF
L117 10uH/MLZ2012E100PT
C166 47uF 10V
C764 0.1uF
C767 56PF
C768 56PF
C770 56PF
X1 18.432MHz
C772 3.3PF
C773 3.3PF
U618 MSP3460G-B8 V3-QI
AVSUP
ANA_IN1+
ANA_IN-
ANA_IN2+
TESTN
XTAL_IN
XTAL_OUT
TESTP
AUD_CLK_O
NC
I/O_1
I/O_0
ADR_SEL
STANDBY
CAPL_M
AHVSUP
CAPL_A
SC1OUTL
SC1OUTR
VREF1
SC2OUTL
SC2OUTR
DACM_SUB
DACM_L
DACM_R
VREF2
DACA_L
DACA_R
SCL
SDA
I2S_CLK
I2S_WS
I2S_DA_O
I2S_DA_IN1
ADR_DA
ADR_CLK
DVSUP
DVSS
I2S_DA_IN2
RESET
A5.0V
L116 10uH/MLZ2012E100PT
C163 10uF 16V
C90 16V 10uF
C771 0.1uF
C162 100uF 10V
R836 100
R837 100
C784 2200pF
C785 2200pF
R817 100
C774 0.1uF
R819 100
R820 100
C778 2200pF
C783 2200pF
R822 100
R823 100
C776 2200pF
C777 2200pF
PH_L_O (16)
PH_R_O (16)
VIDEO_OUT_L (5)
VIDEO_OUT_R (5)
MSP3460_OUT_LEFT (16)
MSP3460_OUT_RIGHT (16)
JP2 AV2-84-14D(WR)/NC
L GND R GND
0.47uF C502 1K R637
R636 100K
C503 100pF
D88 BAV99LT/NC
D5.0V
0.47uF C421 1K R549
R462 100K
C428 100pF
D90 BAV99LT/NC
D5.0V
(13) MSP3460_RESET
R824 100
A5.0V
FB111 BLM11A102S
(8) MCSCL-2300
(8) MCSDA-2300
R825 100
R826 100
C780 NC
C782 NC
C779 0.1uF
C168 47uF 10V
C781 0.1uF
I2S_DA_IN1
I2S_WS
I2S_CL
I2S_OUT_DATA (6,10)
I2S_OUT_LR (6,10)
I2S_OUT_CLK (6)
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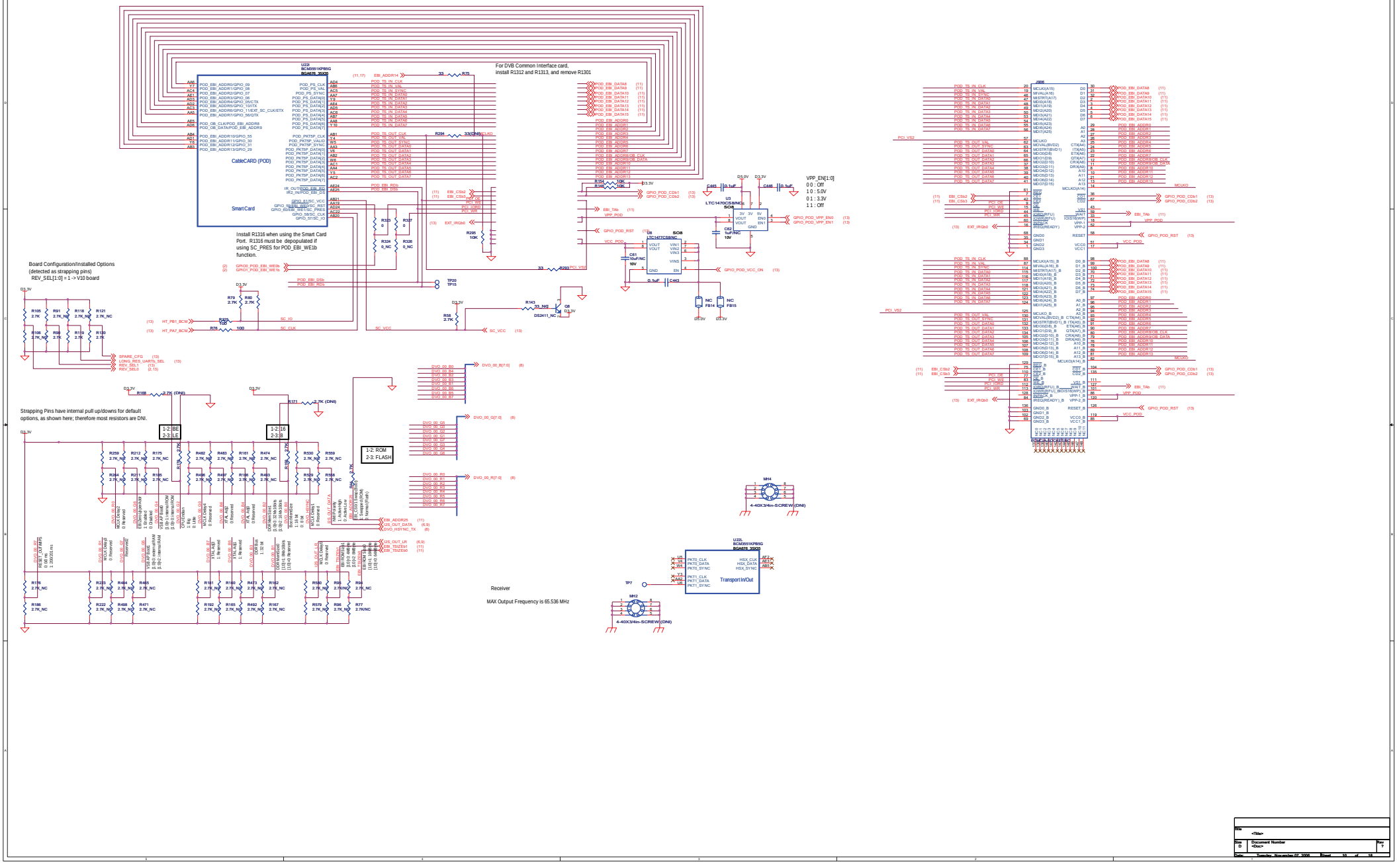
U22
BCM65516KPBSG
BGA676_35X35
CableCARD (POD)
Smart Card
For DVB Common Interface card,
install R1312 and R1313, and remove R1301
Install R1316 when using the Smart Card
Port. R1316 must be depopulated if
using SC_PRES for POD_EBI_WE1b
function.
Board Configuration/Installed Options
(detected as strapping pins)
REV_SEL[1:0] = 1 -> V10 board
Strapping Pins have internal pull up/downs for default
options, as shown here; therefore most resistors are DNI.
1-2: BE
2-3: LE
1-2: I16
2-3: I8
1-2: ROM
2-3: FLASH
Receiver
MAX Output Frequency is 65.536 MHz
VPP_EN[1:0]
0 0 : Off
1 0 : 5.0V
0 1 : 3.3V
1 1 : Off
U3
LTC1470CS8#NC
SO8
U8
LTC1477CS8#NC
U25
BCM3551KPBSG
BGA676_35X35
Transport In/Out
J305
4-40X3/4in-SCREW(DNI)
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Connect PCI_VIO to 5V if any BCM3560 PCI or other digital pin is connected or pulled to a 5V source; otherwise connect PCI_VIO to 3.3V.

U22H
BCM3551KPB5G
BGA676_35X35

PCI/EBI

Reset triggers when D3.3V < 2.93V, for 200ms

Tri-state CableCard (POD) bus to support hot insertion

U7 IMP809TEUR-T

U13 74LVC245A/NC TSSOP20

U14 NC7SZ08P5/NC SC70-5

U12 S29GL064A11TFIR3 TSOP56

FLASH 128Mbit 8Mx16

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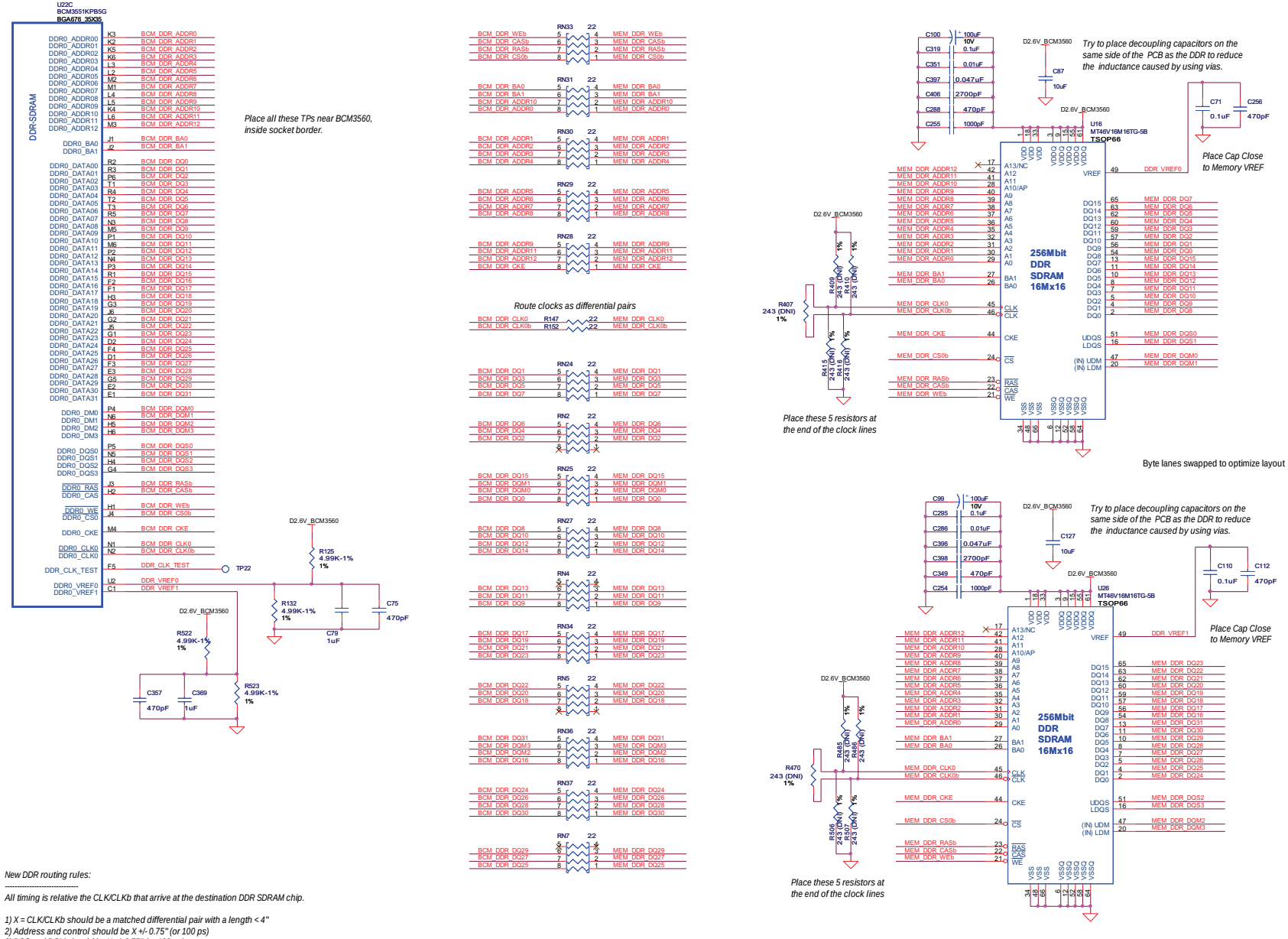
U2C
BCM3551KPB5G
BGA676_35X35
DDR-SDRAM
Place all these TPs near BCM3560, inside socket border.
Route clocks as differential pairs
Place these 5 resistors at the end of the clock lines
Try to place decoupling capacitors on the same side of the PCB as the DDR to reduce the inductance caused by using vias.
Place Cap Close to Memory VREF
256Mbit DDR SDRAM 16Mx16
U16
MT46V16M16TG-5B
TSOP66
Byte lanes swapped to optimize layout
U26
MT46V16M16TG-5B
TSOP66
New DDR routing rules:
All timing is relative the CLK/CLKb that arrive at the destination DDR SDRAM chip.
1) X = CLK/CLKb should be a matched differential pair with a length < 4"
2) Address and control should be X +/- 0.75" (or 100 ps)
3) DQS and DQM should be X +/- 0.75" (or 100 ps)
4) All DQs should match corresponding byte lane DQS/DQMs within +/- 0.20" (or 30 ps)
5) Place 22 ohm resistors for DQ and DQS bidirectional lines half-way between BCM and Memory.
6) Place 22 ohm resistors for CLK, ADDR, BA, DM, RAS, CAS, WE, CKE output-only lines near BCM.
7) Place DDR_VREF[2:1] resistor dividers near BCM.
8) Trace impedances should be 60 to 65 ohms
9) Route DDR_VREF[2:1] with 30-mil trace and at least 1 high quality ceramic bypass capacitor for each connection to a device.
10) All traces should have a >= 3 to 1 spacing ratio from the reference GND/PWR layer. (e.g. 15 mil line-to-line spacing for a 5 mil dielectric thickness)
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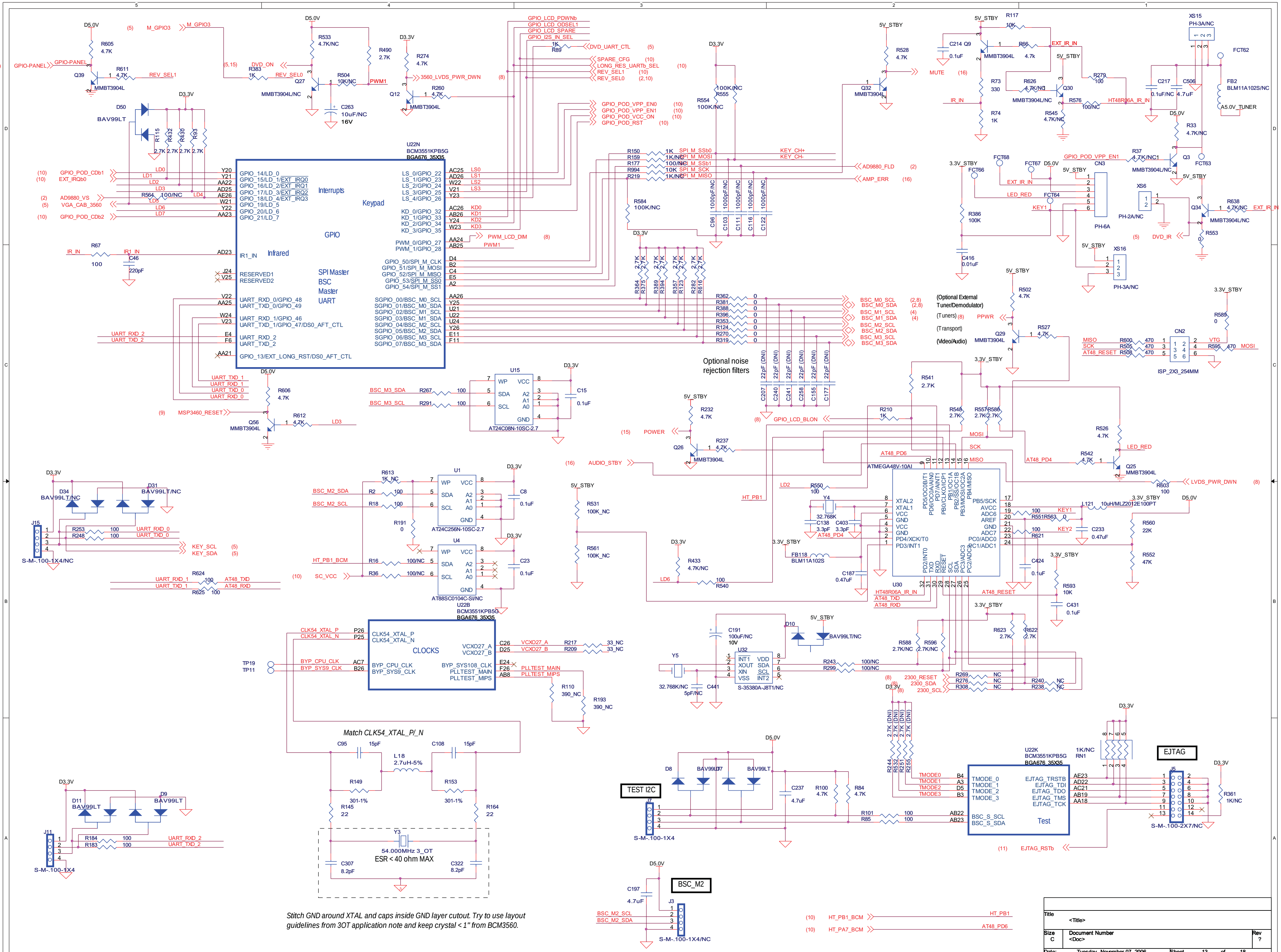

U22N
BCM3551KPB5G
BGA676_35X35
Interrupts
Keypad
GPIO
Infrared
SPI Master
BSC
Master
UART
Optional noise
rejection filters
(Optional External
Tuner/Demodulator)
(Tuners)
(Transport)
(Video/Audio)
U15
AT24C08N-10SC-2.7
U1
AT24C256N-10SC-2.7
U4
AT88SC0104C-SI/NC
U22B
BCM3551KPB5G
BGA676_35X35
CLOCKS
U30
ATMEGA48V-10AI
U32
S-35380A-J8T1/NC
U22K
BCM3551KPB5G
BGA676_35X35
Test
TEST I2C
BSC_M2
EJTAG
ISP_2X3_254MM
Match CLK54_XTAL_P/_N
54.000MHz 3_OT
ESR < 40 ohm MAX
Stitch GND around XTAL and caps inside GND layer cutout. Try to use layout guidelines from 3OT application note and keep crystal < 1" from BCM3560.
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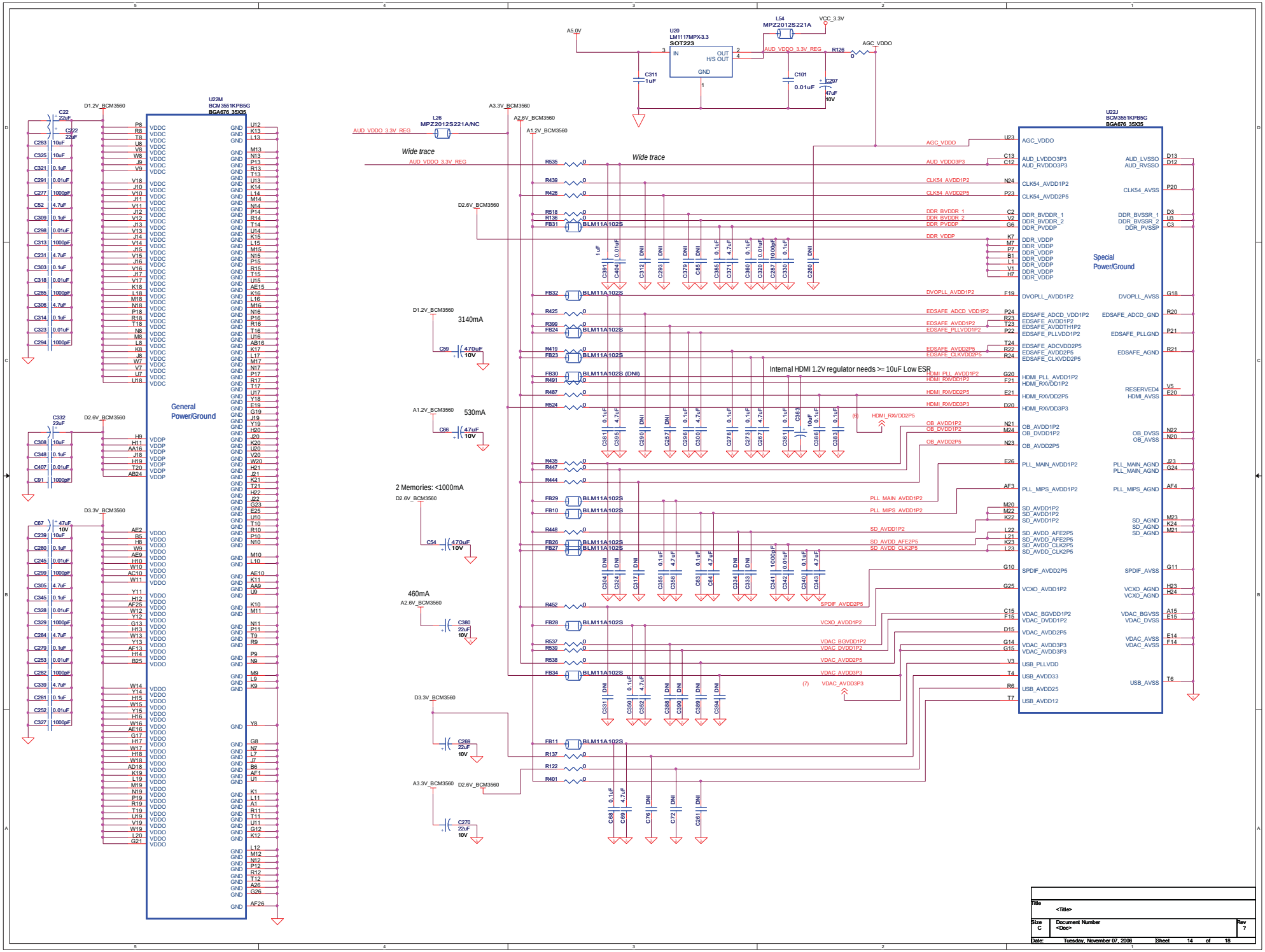
U22M
BCM3551KPB5G
BGA676_35X35
General
Power/Ground
U22J
BCM3551KPB5G
BGA676_35X35
Special
Power/Ground
U20
LM1117MPX-3.3
SOT223
L54
MPZ2012S221A
L26
MPZ2012S221A/NC
Wide trace
Wide trace
Internal HDMI 1.2V regulator needs >= 10uF Low ESR
3140mA
530mA
2 Memories: <1000mA
460mA
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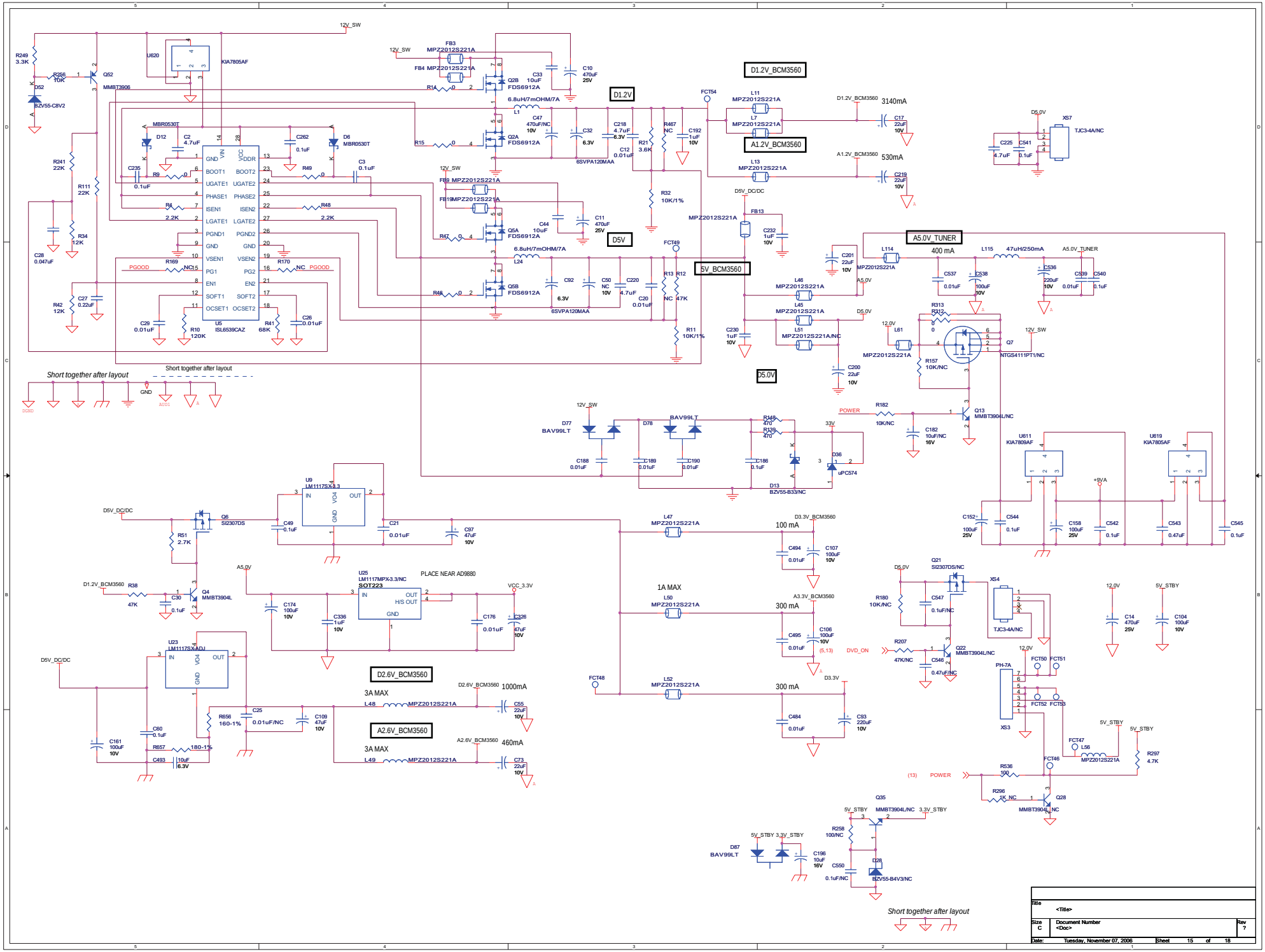
12V_SW
U620
KIA7805AF
R249 3.3K
R356 10K
Q52 MMBT3906
D52 BZV55-C8V2
FB3 MPZ2012S221A
FB4 MPZ2012S221A
Q2B FDS6912A
C33 10uF
C10 470uF 25V
D1.2V_BCM3560
D1.2V
R14 0
6.8uH/7mOHM/7A
L1
C47 470uF/NC 10V
Q2A FDS6912A
C32 6.3V
C218 4.7uF 6.3V
C12 0.01uF
6SVPA120MAA
R21 3.6K
R467 NC
C192 1uF 10V
R15 0
FCT54
L11 MPZ2012S221A
L7 MPZ2012S221A
D1.2V_BCM3560 3140mA
C17 22uF 10V
A1.2V_BCM3560
A1.2V_BCM3560 530mA
L13 MPZ2012S221A
C219 22uF 10V
D5.0V
XS7 TJC3-4A/NC
C225 4.7uF
C541 0.1uF
MBR0530T
D12
D6 MBR0530T
C2 4.7uF
C282 0.1uF
C235 0.1uF
R9 0
R49 0
C3 0.1uF
R241 22K
R111 22K
R34 12K
C28 0.047uF
R42 12K
C27 0.22uF
R4 2.2K
R48 2.2K
R169 NC
R170 NC
PGOOD
C29 0.01uF
R10 120K
R41 68K
C26 0.01uF
U5 ISL6539CAZ
GND VIN VCC VDDR
BOOT1 BOOT2
UGATE1 UGATE2
PHASE1 PHASE2
ISEN1 ISEN2
LGATE1 LGATE2
PGND1 PGND2
VSEN1 VSEN2
PG1 PG2
EN1 EN2
SOFT1 SOFT2
OCSET1 OCSET2
12V_SW
FB9 MPZ2012S221A
FB19 MPZ2012S221A
Q5A FDS6912A
C44 10uF
C11 470uF 25V
D5V
R47 0
6.8uH/7mOHM/7A
L24
C92 6.3V
C50 NC 10V
C220 4.7uF
C20 0.01uF
6SVPA120MAA
R46 0
FCT49
R13 NC
R12 47K
R11 10K/1%
R32 10K/1%
D5V_DC/DC
FB13
MPZ2012S221A
C232 1uF 10V
5V_BCM3560
C230 1uF 10V
L45 MPZ2012S221A
L51 MPZ2012S221A/NC
C200 22uF 10V
D5.0V
A5.0V_TUNER
C201 22uF 10V
L114 MPZ2012S221A
400 mA
L115 47uH/250mA
A5.0V_TUNER
C537 0.01uF
C538 100uF 10V
C536 220uF 10V
C539 0.01uF
C540 0.1uF
L46 MPZ2012S221A
A5.0V
R313
R312
L61 MPZ2012S221A
12.0V
Q7 NTGS4111PT1/NC
12V_SW
R157 10K/NC
Short together after layout
Short together after layout
GND
D77 BAV99LT
D78 BAV99LT
BAV99LT
C188 0.01uF
C189 0.01uF
C190 0.01uF
R149 470
R139 470
C186 0.1uF
33V
D36 UPC574
D13 BZV55-B33/NC
POWER
R182 10K/NC
Q13 MMBT3904L/NC
C182 10uF/NC 16V
U611 KIA7805AF
U619 KIA7805AF
+9VA
C152 100uF 25V
C544 0.1uF
C158 100uF 25V
C542 0.1uF
C543 0.47uF
C545 0.1uF
U9 LM1117SX3.3
D5V_DC/DC
Q6 SI2307DS
C49 0.1uF
C21 0.01uF
C97 47uF 10V
R51 2.7K
L47 MPZ2012S221A
D3.3V_BCM3560
100 mA
C494 0.01uF
C107 100uF 10V
A5.0V
U25 LM1117MPX-3.3/NC SOT223
PLACE NEAR AD9880
D1.2V_BCM3560
R38 47K
C30 0.1uF
Q4 MMBT3904L
C174 100uF 10V
C336 1uF 10V
VCC_3.3V
C176 0.01uF
C326 47uF 10V
1A MAX
L50 MPZ2012S221A
A3.3V_BCM3560
300 mA
C495 0.01uF
C106 100uF 10V
(5,13)
DVD_ON
R207 47K/NC
Q22 MMBT3904L/NC
C546 0.47uF/NC
D3.3V
FCT48
L52 MPZ2012S221A
300 mA
C484 0.01uF
C93 220uF 10V
Q21 SI2307DS/NC
D5.0V
R180 10K/NC
C547 0.1uF/NC
XS4 TJC3-4A/NC
12.0V
5V_STBY
C14 470uF 25V
C104 100uF 10V
U23 LM1117SX-ADJ
D5V_DC/DC
D2.6V_BCM3560
3A MAX
L48 MPZ2012S221A
D2.6V_BCM3560 1000mA
C55 22uF 10V
C25 0.01uF/NC
C109 47uF 10V
R656 160-1%
C60 0.1uF
C161 100uF 10V
R657 180-1%
C493 10uF 6.3V
A2.6V_BCM3560
3A MAX
L49 MPZ2012S221A
A2.6V_BCM3560 460mA
C73 22uF 10V
PH-7A
FCT50
FCT51
FCT52
FCT53
XS3
FCT47
L56 MPZ2012S221A
FCT46
R297 4.7K
(13) POWER
R536 100
R296 1K/NC
Q28 MMBT3904L/NC
Q35 MMBT3904L/NC
3.3V_STBY
R258 100/NC
D87 BAV99LT
C196 10uF 16V
C550 0.1uF/NC
D28 BZV55-B4V3/NC
Short together after layout
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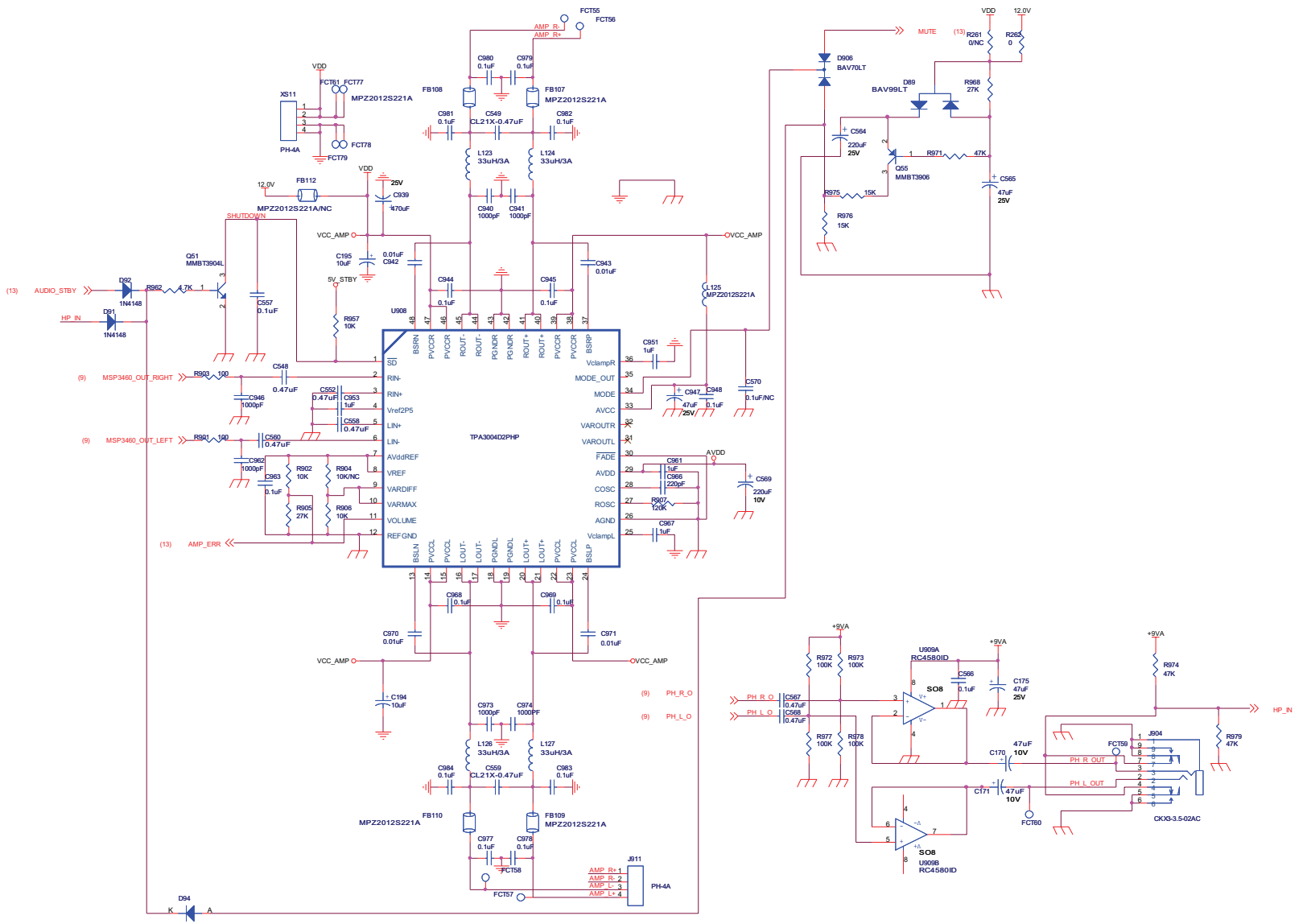
TPA3004D2PHP
U908
SD
RIN-
RIN+
Vref2P5
LIN+
LIN-
AVddREF
VREF
VARDIFF
VARMAX
VOLUME
REFGND
VclampR
MODE_OUT
MODE
AVCC
VAROUTR
VAROUTL
FADE
AVDD
COSC
ROSC
AGND
VclampL
BSRN
PVCCR
ROUT-
PGNDR
ROUT+
BSRP
BSLN
PVCCL
LOUT-
PGNDL
LOUT+
BSLP
MPZ2012S221A
MPZ2012S221A/NC
PH-4A
J911
J904
CKX3-3.5-02AC
SO8
U909A
U909B
RC4580ID
BAV70LT
BAV99LT
MMBT3904L
MMBT3906
1N4148
1N4148/NC
SHUTDOWN
MUTE
AUDIO_STBY
HP_IN
AMP_ERR
PH_R_O
PH_L_O
PH_R_OUT
PH_L_OUT
MSP3460_OUT_RIGHT
MSP3460_OUT_LEFT
VCC_AMP
5V_STBY
VDD
12.0V
+9VA
AVDD
AMP_R-
AMP_R+
AMP_L-
AMP_L+
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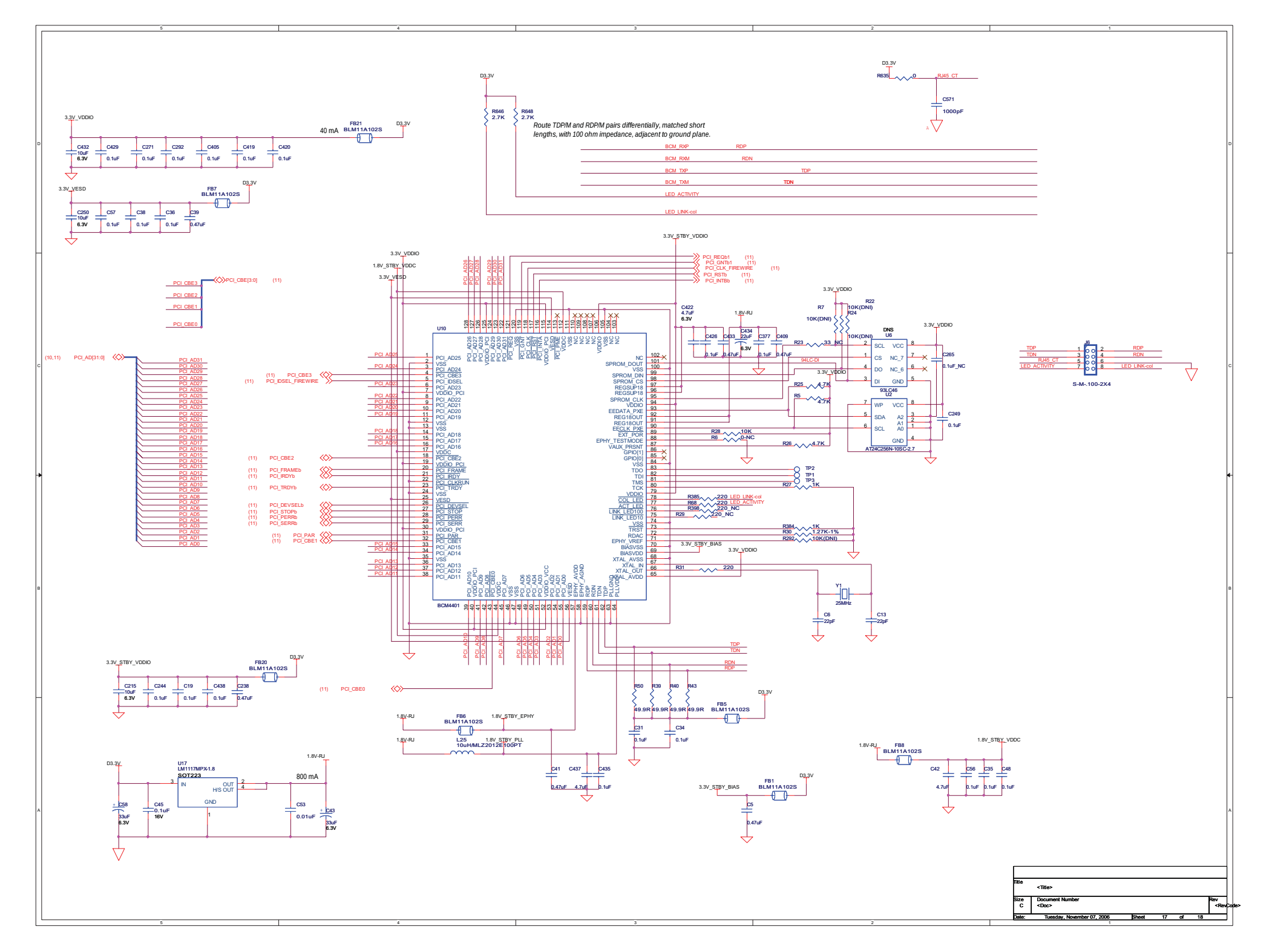
Route TDP/M and RDP/M pairs differentially, matched short lengths, with 100 ohm impedance, adjacent to ground plane.
BCM4401
U10
LM1117MPX-1.8
SOT223
93LC46
A124C256N-10SC-2.7
S-M-.100-2X4
25MHz
800 mA
40 mA
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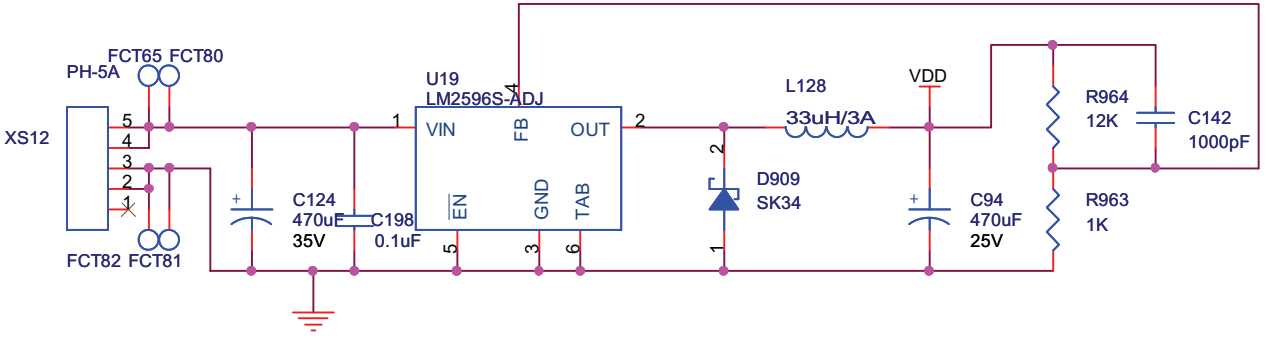

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