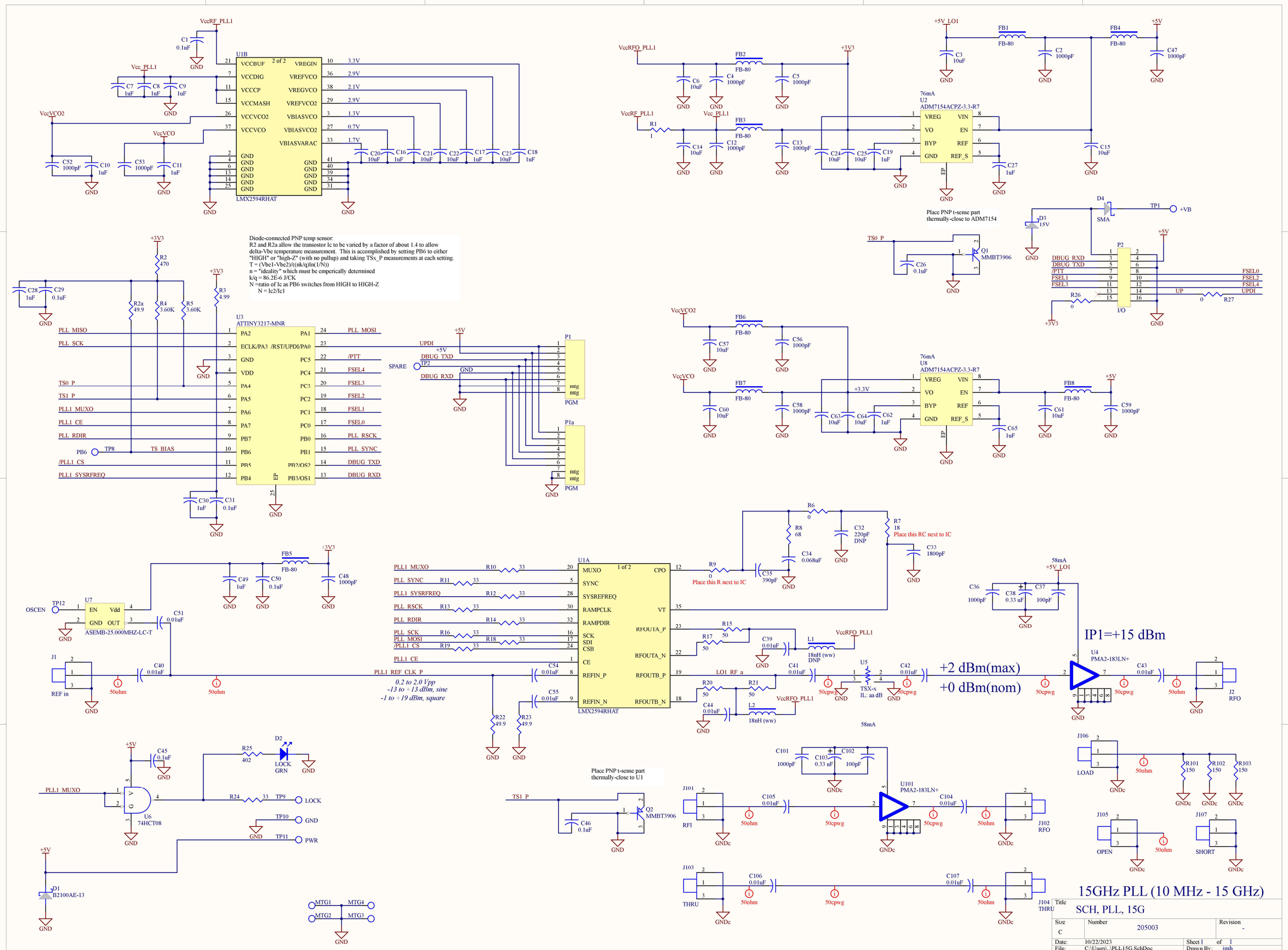
U1B
2 of 2
LMX2594RHAT
VCCBUF
VCCDIG
VCCCP
VCCMASH
VCCVCO2
VCCVCO
VREGIN
VREFVCO
VREGVCO
VREFVCO2
VBIASVCO
VBIASVCO2
VBIASVARAC
3.3V
2.9V
2.1V
2.9V
1.3V
0.7V
1.7V
VccRF_PLL1
Vcc_PLL1
VccVCO2
VccVCO
U3
ATTINY3217-MNR
PLL_MISO
PLL_SCK
TS0_P
TS1_P
PLL1_MUXO
PLL1_CE
PLL_RDIR
PB6
TP8
TS_BIAS
/PLL1_CS
PLL1_SYSRFREQ
PLL_MOSI
/PTT
FSEL4
FSEL3
FSEL2
FSEL1
FSEL0
PLL_RSCK
PLL_SYNC
DBUG_TXD
DBUG_RXD
UPDI
SPARE
TP2
P1
P1a
PGM
Diode-connected PNP temp sensor:
R2 and R2a allow the transostor Ic to be varied by a factor of about 1.4 to allow
delta-Vbe temperature measurement. This is accomplished by setting PB6 to either
"HIGH" or "high-Z" (with no pullup) and taking TSx_P measurements at each setting.
T = (Vbe1-Vbe2)/((nk/q)ln(1/N))
n = "ideality" which must be emperically determined
k/q = 86.2E-6 J/CK
N =ratio of Ic as PB6 switches from HIGH to HIGH-Z
N = Ic2/Ic1
U1A
1 of 2
LMX2594RHAT
MUXO
SYNC
SYSREFREQ
RAMPCLK
RAMPDIR
SCK
SDI
CSB
CE
REFIN_P
REFIN_N
CPO
VT
RFOUTA_P
RFOUTA_N
RFOUTB_P
RFOUTB_N
PLL1_REF_CLK_P
0.2 to 2.0 Vpp
-13 to +13 dBm, sine
-1 to +19 dBm, square
OSCEN
TP12
U7
ASEMB-25.000MHZ-LC-T
J1
REF in
50ohm
Place this R next to IC
Place this RC next to IC
Place PNP t-sense part
thermally-close to ADM7154
Place PNP t-sense part
thermally-close to U1
U2
ADM7154ACPZ-3.3-R7
76mA
U8
ADM7154ACPZ-3.3-R7
76mA
Q1
MMBT3906
Q2
MMBT3906
TS0_P
TS1_P
D4
SMA
TP1
+VB
D3
15V
P2
I/O
DBUG_RXD
DBUG_TXD
/PTT
FSEL1
FSEL3
FSEL0
FSEL2
FSEL4
UPDI
UP
R26
R27
U4
PMA2-183LN+
U101
PMA2-183LN+
58mA
+5V_LO1
IP1=+15 dBm
+2 dBm(max)
+0 dBm(nom)
TSX-x
IL: aa dB
J2
RFO
J101
RFI
J102
RFO
J103
THRU
J104
THRU
J106
LOAD
J105
OPEN
J107
SHORT
U6
74HCT08
D1
B2100AE-13
D2
LOCK
GRN
LOCK
GND
PWR
MTG1
MTG2
MTG3
MTG4
15GHz PLL (10 MHz - 15 GHz)
Title
SCH, PLL, 15G
Size
C
Number
205003
Revision
-
Date: 10/22/2023
Sheet 1 of 1
File: C:\Users\..\PLL15G.SchDoc
Drawn By: jmh