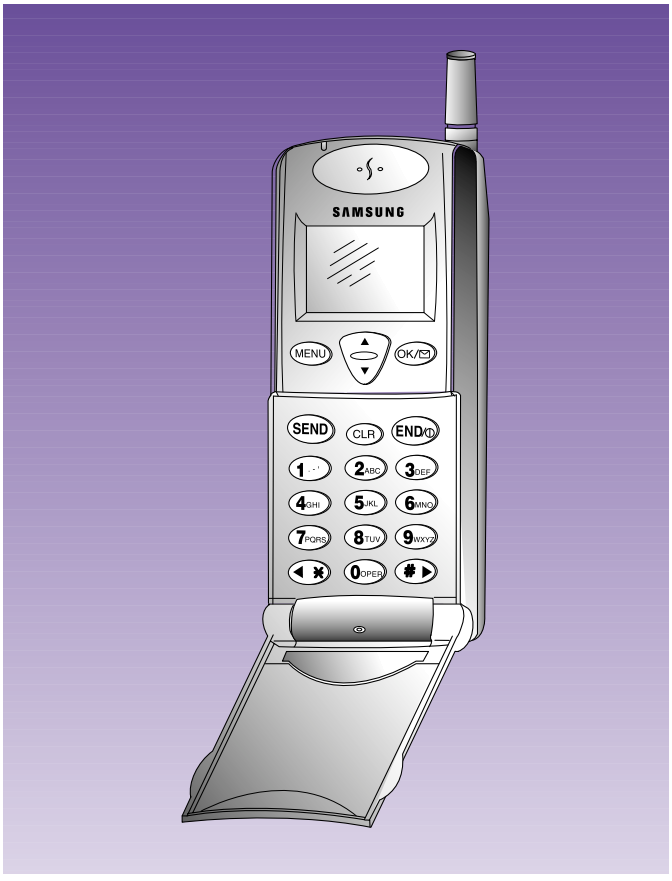
SAMSUNG

PORTABLE CELLULAR TELEPHONE

SCH-2500 Series

SERVICE Manual

PORTABLE CELLULAR TELEPHONE



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Samsung Electronics Co.,Ltd.
GH68-00621A
1999. 9. Rev. 1.0

1. General Introduction

The SCH-25XX DBTM phone functions as analog phone working in AMPS (Advanced Mobile Phone Service) mode, digital cellular phone working in CDMA (Code Division Multiple Access) mode, and digital phone working in PCS (Personal Communication Service) mode.

The following standards and minimum performance standards shall be met or exceeded by each subscriber unit.

Air Interface

The Subscriber Unit shall be Triple mode and Dual band in compliance with ANSI J-STD-008 and TIA/EIA IS-98A.

MS(Mobile Station) meets the specifications of the below;

- ANSI J-STD-008 : Personal Station-base Station Compatibility Requirements for 1.8 to 2.0 GHz CDMA PCS.
- ANSI J-STD-018 : Recommended Minimum Performance Requirements for 1.8 to 2.0 GHz CDMA Personal Stations.
- CDG Ref. Document #27 : High Rate Speech Service Option for Wideband Spread Spectrum Systems.
- TIA/EIA IS-95A : Mobile Station-Base Station Compatibility Standard for Dual-Mode Wideband Spread Spectrum Cellular System.
- IS-96A : Speech Service Option 1 Standard for Dual-Mode Wideband Spread-Spectrum Cellular Syatems.
- IS-98A : Standard for Dual-Mode Wideband Spread Spectrum Cellular Mobile Station.
- IS-126 : Mobile Station Loopback Service Options Standard.

SCH-25XX is composed of main handset, rapid charger, cradle, two batteries (1000 mAh, 1600 mAh), hand-free kit, and travel charger. Hands-free Kit is designed to be operated in full-duplex mode taking turn-around delay between the phone and the system into account.

Memo

2. SPECIFICATION

2-1. General

ITEM	PCS	CDMA	AMPS
Tx Freq. range	1850 ~ 1910MHz	824 ~ 849MHz	824~849MHz
Rx Freq. range	1930 ~1990MHz	869 ~894MHz	869 ~894MHz
Channel Bandwidth	1.23 MHz	1.23 MHz	30 KHz
Channel Spacing	50 KHz	30 KHz	30 KHz
Number of Channel	1200	20FA	832
Duplex Separation	80 MHz	45 MHz	45 MHz
Type of Emission	1M25F9W	40K0F8W,40K0F1D	40K0F8W,40K0F1D
In/Output Impedance	50Ω	50Ω	50Ω
Tx Intermediate Freq.	130.38MHz	130.38MHz	130.38MHz
Rx Intermediate Freq.	210.38MHz	85.38MHz	85.38MHz
Tx Local Freq.	lst(F_{TX}-130.38MHz)	lst(F_{TX}+130.38MHz)	lst(F_{TX}+130.38MHz)
	2nd(260.76MHz)	2nd(260.76MHz)	2nd(260.76MHz)
Rx Local Freq	lst(F_{RX}-210.38MHz)	lst(F_{RX}+85.38MHz)	lst(F_{RX}+85.38MHz)
	2nd(420.76MHz)	2nd(170.76MHz)	2nd(170.76MHz)
TCXO freq	19.68MHz	19.68MHz	19.68MHz
Freq. Stability	(F_{RX}-80MHz)±150Hz	(F_{RX}-45MHz)±300Hz	±2.5ppm
Operating Temperature	-30 °C ~ +60 °C	-30 °C ~ +60 °C	-30 °C ~ +60 °C
Supply Voltage	+3.6V		
Size and Weight	STD : 122cm X 50cm X 26cm, 161 g, 1000 mA		
	MID : 122cm X 50cm X 30cm, 179 g, 1600 mA		

2-2. 1.9GHz CDMA(US PCS)

1) General

Frequency Range	
.Transmitter	: 1850-1910MHz
.Receiver	: 1930-1990MHz
Channel Bandwidth	: 1.23MHz
Channel Spacing	: 50kHz
Number of Channels	: 1200
Duplex Seperation	: 80MHz
Type of Emission	: 1M25F9W
Input/Output impedance	: 50 Ω
Intermediate Frequency	
.Transmitter	: 130.38MHz
.Receiver	: 210.38MHz
Local Frequency	
.Transmitter	: lst(F_{TX}-130.38), 2nd(260.76MHz),
.Receiver	: lst(F_{RX}-210.38MHz), 2nd(420.76MHz),
TCXO Frequency	: 19.68MHz
Frequlency Stability	: (F_{TX}-80MHz)±150Hz
Operation Temperature	: -30 °C ~ 60 °C
Supply Voltage	: +3.6V

2) Transmitter

Waveform Quality	: 0.944 or more
Open Loop Power Conterol Range	
. -25dBm	: -60.5dBm ~ -41.5dBm
. -65dBm	: -20.5dBm ~ +1.5dBm
. -104dBm	: +15.0dBm ~ +30dBm
Minimum Tx Power control	: below -50dBm
Closed Loop Power Control Range	: ±24dB
Maximum RF Output Power	: 200mW(+23dBm)
Occupied Bandwidth	: 1.23MHz
Conducted Spurious Emission @ 1.25MHz	: -42dBc/30kHz

3) Receiver

Rx Sensitivity and Dynamic Range	: -104dBm, FER=0.5% or less
	: -25dBm, FER=0.5% or less
Conducted Spurious Emission	
. 1930 ~ 1990MHz	: <-81dBm
. 1850 ~ 1910MHz	: <-61dBm
. All Other Frequencies	: <-47dBm
Single Tone Desensitization	: lower than 1%
Rx power = -101dBm	
Tone power = -30dBm	
Tone offset from carrier = ±1.25MHz	
Intermodulation Spurious Response Attenuation	: lower than 1%
Rx power = -101dBm	
Tone 1 power = -43dBm	
Tone 2 power = -43dBm	
Tone 1 : offset from carrier = ± 1.25MHz	
Tone 2 : offset from carrier = ± 2.05MHz	

2-3 800MHz CDMA

1) General

Frequency Range	
.Transmitter	: 824 ~849MHz
.Receiver	: 869 ~894MHz
Channel Bandwidth	: 1.23MHz
Channel Spacing	: 30kHz
Number of Channels	: 20FA
Duplex Seperation	: 45 MHz
Type of Emission	: 40KOF8W, 40KOF1D
Input/Output Impedance	: 50Ω
Intermediate Frequency	
.Transmitter	: 130.38MHz
.Receiver	: 85.38MHz
Local Frequency	
.Transmitter	: lst(F_{TX}-130.38MHz),2nd(260.76MHz)
.Receiver	: lst(F_{TX}-85.38MHz),2nd(170.76MHz)
TCXO Frequency	: 19.68MHz
Frequency Stability	: (F_{TX}-45MHz)±300Hz
Operation Temperature	: -30 ^{o}C ~ 60 ^{o}C
Supply Voltage	: +3.6V

2) Transmitter

Waveform Quality	: 0.944 or more
Open Loop power Control Range	
. -25dBm	: -57.5dBm ~ -38.5dBm
. -65dBm	: -17.5dBm ~ +1.5dBm
. -104dBm	: +18.0dBm ~ +30dBm
Minimum Tx Power Control	: below -50dBm
Closed Loop Power Control Range	: ±24dB
Maximum RF Output Power	: 200mW(+23dBm)
Occupied Bandwidth	: 1.23MHz
Conducted Spurious Emission @900 KHz	: -42dBc/30kHz
@1.25MHz	: -54dBc/30kHz

3) Receiver

Rx Sensitivity and Dynamic Range	: -104dBm, FER=0.5% or less
	: -25dBm, FER=0.5% or less
Conducted Spurious Emission	
.869 ~ 894 MHz	: <-81dBm
.824 ~ 849 MHz	: <-61dBm
.A11 Other Frequencies	: <-47dBm
Single Tone Desenstization	:lower than 1%
Rx power level = -101dBm	
Tone power level = -30dBm	
Tone offset from carrier = ± 900kHz	
Intermodulation Spurious Response Attenuation	: lower than 1%
Rx power = -101dBm	
Tone 1 power = -43dBm	
Tone 2 power = -43dBm	
Tone 1 offset from carrier = ± 900kHz	
Tone 2 offset from carrier = ± 1,700kHz	

2-4 800MHZ CELLULAR(AMPS)

1) General

Frequency Range	
.Transmitter	: 824 ~ 849MHz
.Receiver	: 869 ~ 894MHz
Channel Spacing	: 30kHz
Number of Channels	: 832
Duplex Seperation	: 45MHz
Frequency Stability	: ±2.5ppm(-30 °C ~ 60 °C, -22°F ~ 140°F)
Modulation/Demodulation	
.Voice	: PM
.Data	: FM
Operating Temperature	: -30°C ~ 60°C, -22°F ~ 140°F
Supply Voltate	: +3.6V

2) Transmitter

RF output power	: 0.6W(+2/-4dB)
Carrier ON/OFF conditions	
“ON” Condition	: within ±3dB of specification output (in 2 ms)
“OFF” Condition	: below -60dBm (in 2 ms)
Compresssor	
Compression Rate	: 2 : 1
Attack Time	: 3ms
Recovery Time	: 13.5ms
Reference Input	: input power level for producing a nominal ±2.9kHz
	: peak frequency deviation of transmitted carrier
Preamphasis	: 6dB/oct within 0.3 ~ 3kHz
Maximum Frequency Deviation	
F3 of G3	: ±12kHz
Supervisory Audio Tone	: ± 2kHz(±10%)
Signling Tone	: ± 8kHz(±10%)
Wideband Data	: ± 8kHz(±10%)

Post Deviation Limiter Filter	
3.0 ~ 5.9 kHz	: above 40 LOG(F/3000)dB
5.9 ~6.1 kHz	: above 35dB
6.1 ~15 kHz	: above 40 LOG(F/3000)dB
Over 15 kHz	: above 28 dB
Spectrum Noise Suppression	
For all modulation	
fo +20 kHz ~ fo +45 kHz	: above 26dB
For modulation by voice and SAT	
fo +45 kHz	: above 63dB+10LOG(PY)dB
For modulation by WBD(without SAT) and ST(with SAT)	
fo +45 kHz ~ fo + 60 kHz	: above 45 dB
fo +60 kHz ~ fo + 90 kHz	: above 65 dB
fo +90 kHz ~ 2 fo	: above 63 dB + 10 LOG(PY) dB (where fo = carrier frequency PY = mean output power in watts)
Harmonic and conducted Spurious Emissions	: below 43 + 10 LOG(PY) dB

3) Receiver

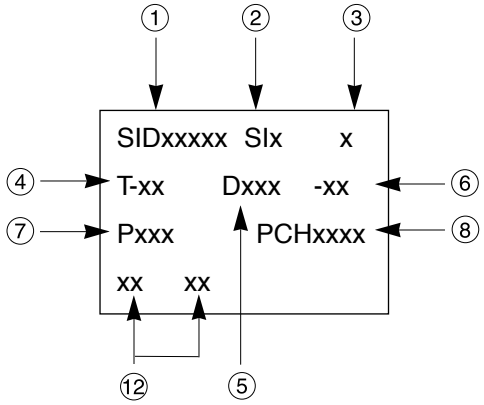
De-emphasis	: -6dB/oct within 0.3 ~ 3KHz
Expandor	
Expandor Rate	: 1 : 2
Attack time	: within 3 ms
Recovery Time	: Within 13.5 ms
Recovery input	: output power level to a 1000Hz tone from a carrier within ±2.9 kHz peak frequency deviation
Sensitivity	: 12 dB SINAD/-116dBm
Intermodulation Spurious Response Attenuation	: above 65dB
RSSI Range	: avoce 60dB
Protection Against Spurious Response Interference	: above 60dB

In Band Conducted Spurious Emission	
Transmit Band	: below -60dBm
Receive Band	: below -80dBm
Out of Band Conducted	
Spurious Emissions	: below -47dBm
Radiated Spurious Emission	
Frequency Range	: Maximum Allowable EIRP
25 ~ 70MHz	: -45dBm
70 ~ 130MHz	: -41dBm
130 ~ 174 MHz	: -41 ~ -32dBm
174 ~ 260 MHz	: -32dBm
260 ~ 470 MHz	: -32 ~-26dBm
470 ~ 1G MHz	: -21dBm

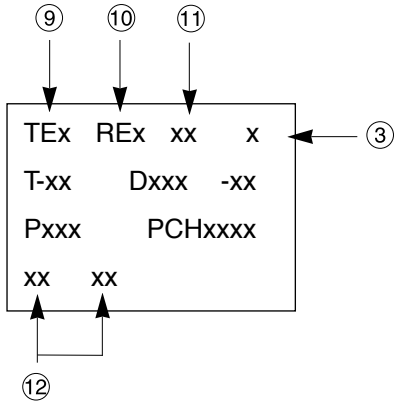
2-5 PCS Debug Display Information

To select debug display mode : prgss [MENU] + [8] and press [0] + [0] +[0] +[0] +[0] +[0] and press [1] or OK

IN IDLE MODE



IN CONVERSATION MODE



① Sxxxxx : SID (System Identification) toggle
Nxxxxx : NID (Network Identification) toggle

② SIx : Slot cycle index (lowest between the system and the phone will be used)
1. SIO : Slot Index 0
2. SI1 : Slot Index 1
3. SI2 : Slot Index 2

③ Handset Status

0 - NO SVC	7 - Release
1 - Synchronization(Init)	8 - Overhead
2 - Paging (Idle)	9 - Origination
3 - Vocoder-Init	A - Page - Reg
4 - Waiting for order	B - Order - Reg
5 - Waiting for answer	C - Reg
6 - Conversation state	D-Msg

④ T-xx : Tx adjust, Value ranges from +63 ~ - 63dB

⑤ Dxxx : Sector power in dBm

⑥ -xx : ec/Io

⑦ Pxxx : PN offset

⑧ CHxxxx : Channel number

⑨ TV : Tx vocoder rate (8 is full rate, 1 is 1/8th rate)

⑩ RV : Rx vocoder rate (8 is full rate, 1 is 1/8th rate)

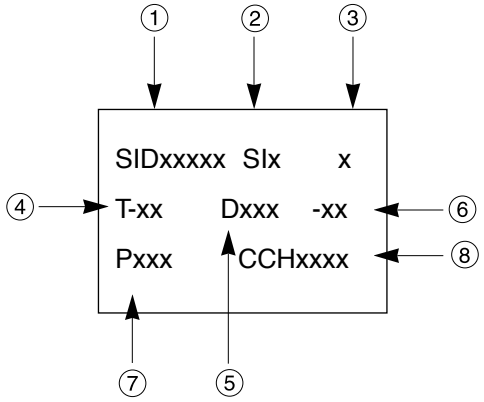
⑪ xx : Walsh code used in traffic channel

⑫ System acquisition state

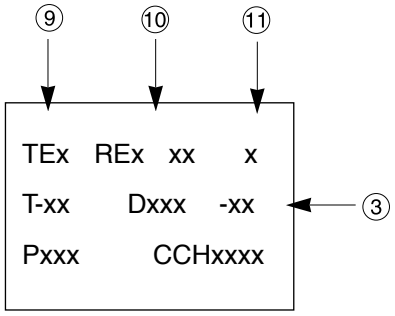
2-6 CDMA Debug Display Information (menu 8)

To select debug display mode : prgss [MENU] + [8] and press [0] + [0] +[0] +[0] +[0] +[0] and press [1] or OK

IN IDLE MODE



IN CONVERSATION MODE



① Sxxxxx : SID (System Identification) toggle
Nxxxxx : NID (Network Identification) toggle

② SIx : Slot cycle index (lowest between the system and the phone will be used)

③ Handset Status

0 - NO SVC	7 - Release
1 - Synchronization(Init)	8 - Overhead
2 - Paging (Idle)	9 - Origination
3 - Vocoder-Init	A - Page - Reg
4 - Waiting for order	B - Order - Reg
5 - Waiting for answer	C - Reg
6 - Conversation state	D-Msg

④ T-xx : Tx adjust, Value ranges from +63 ~ -63dB

⑤ Dxxx : Sector power in dBm

⑥ -xx : ec/Io

⑦ Pxxx : PN offset

⑧ CHxxxx : Channel number

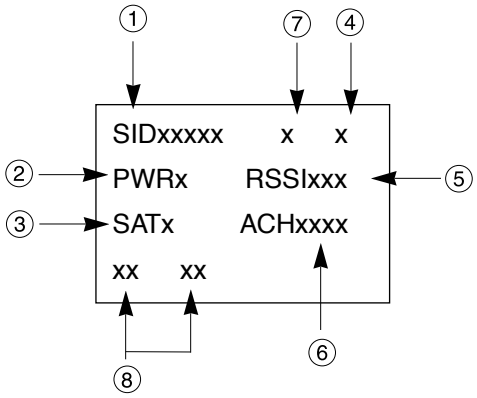
⑨ TEX : Tx vocoder rate (8 is full rate, 1 is 1/8th rate)

⑩ REX : Rx vocoder rate (8 is full rate, 1 is 1/8th rate)

⑪ xx : Walsh code used in traffic channel

2-7 AMPS Debug Display Information

To select debug display mode : prss [MENU] + [8] and press [0] + [0] +[0] +[0] +[0] +[0] and press [1] or OK



① SIDxxxxx : AMPS Home System ID

② PWRx : Power Level 0 ~ 7

③ SATx : Supervisory Audio Tone code (0 ~ 3)

④ x (Using Frequency Band) : A Band or B Band

⑤ RSSIxxx : RSSI value

⑥ CHxxx : Using Channel

⑦ Handset Status :

1 - Initialization state	5 - Waiting for answer
2 - Idle state	6 - Conversation
3 - Vocoder - Init	7 - Release
4 - Waiting for order	8 - System acguisition

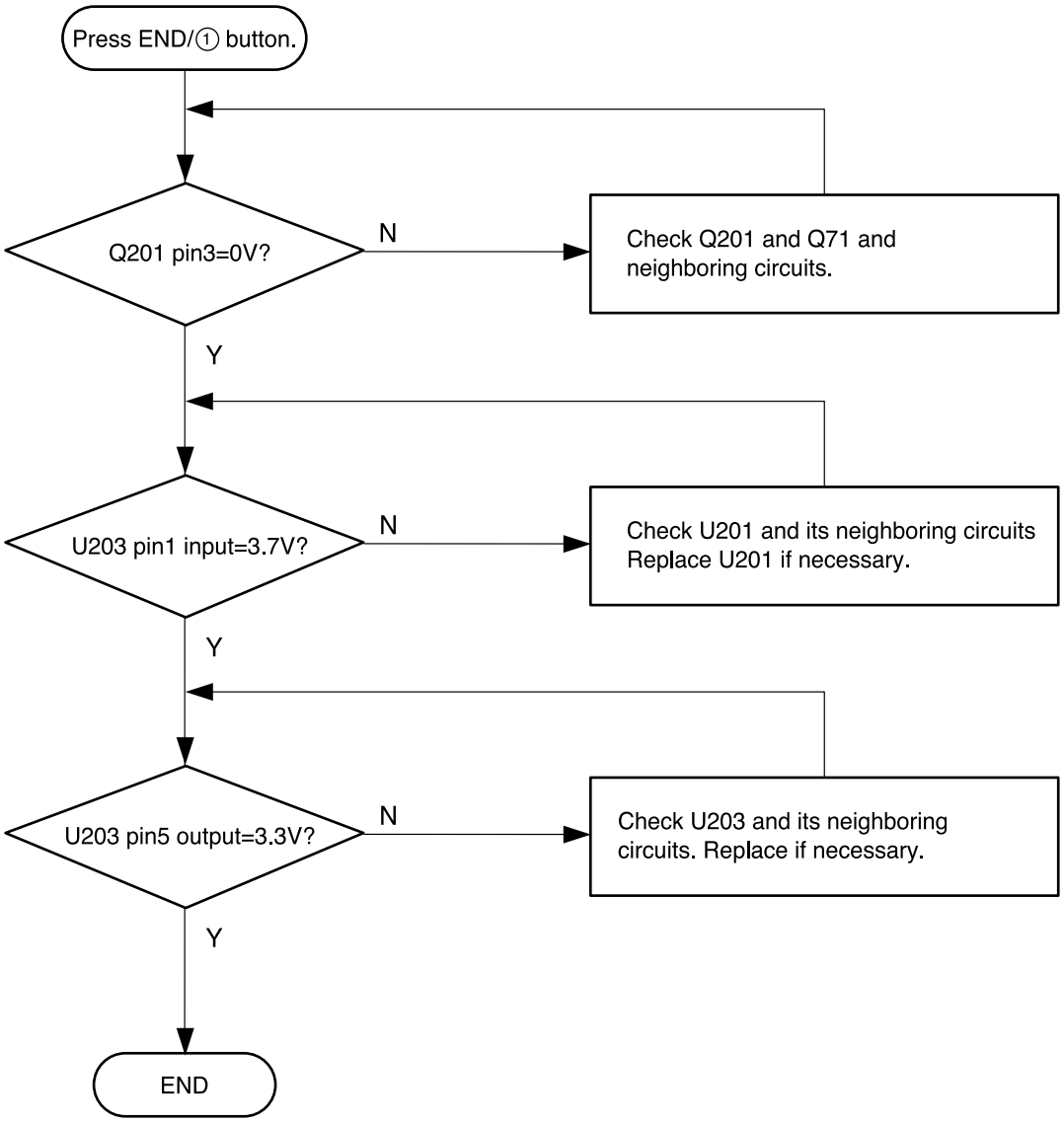
⑧ System acguisition state

Memo

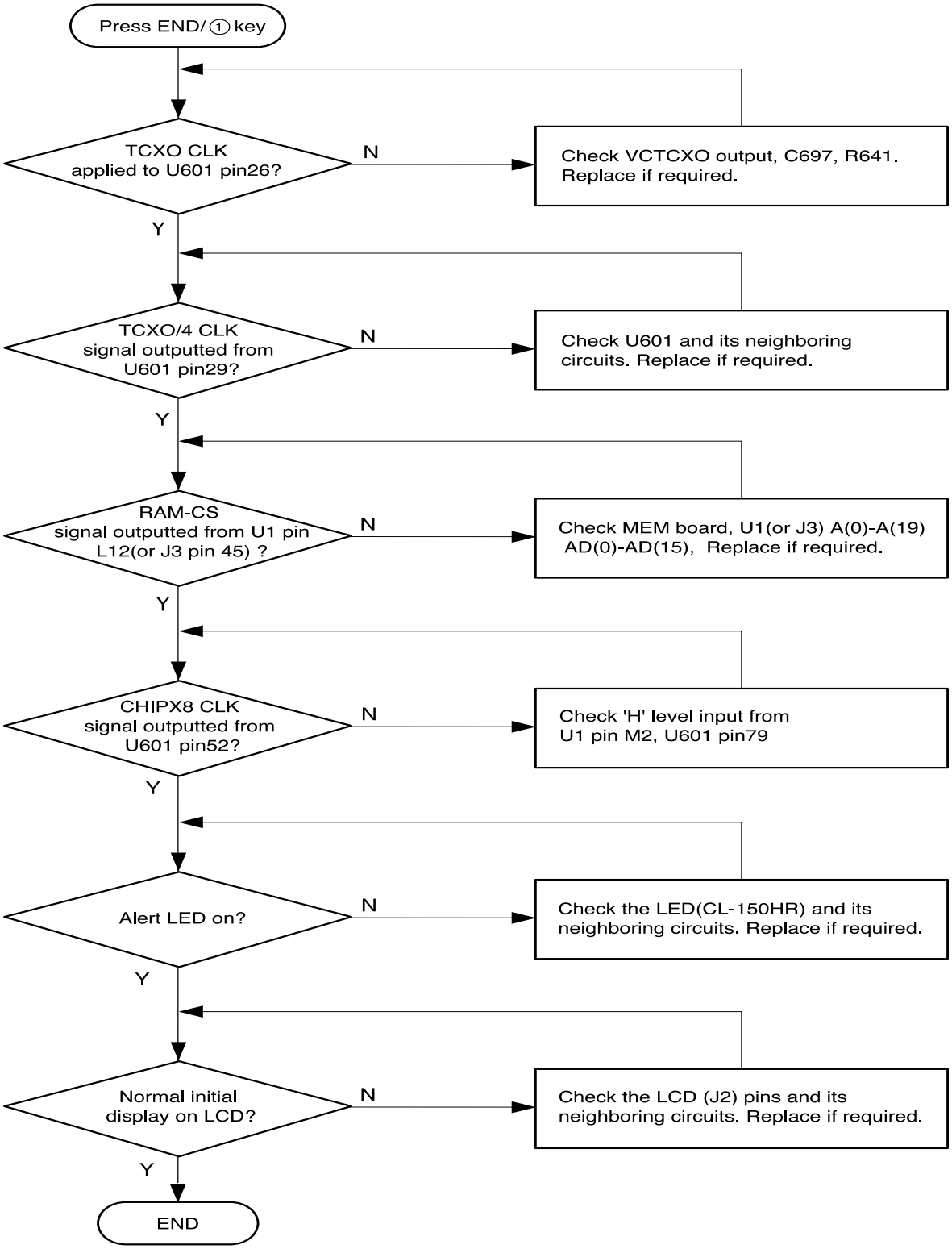
6. Trouble shooting.

6-1. Logic Section

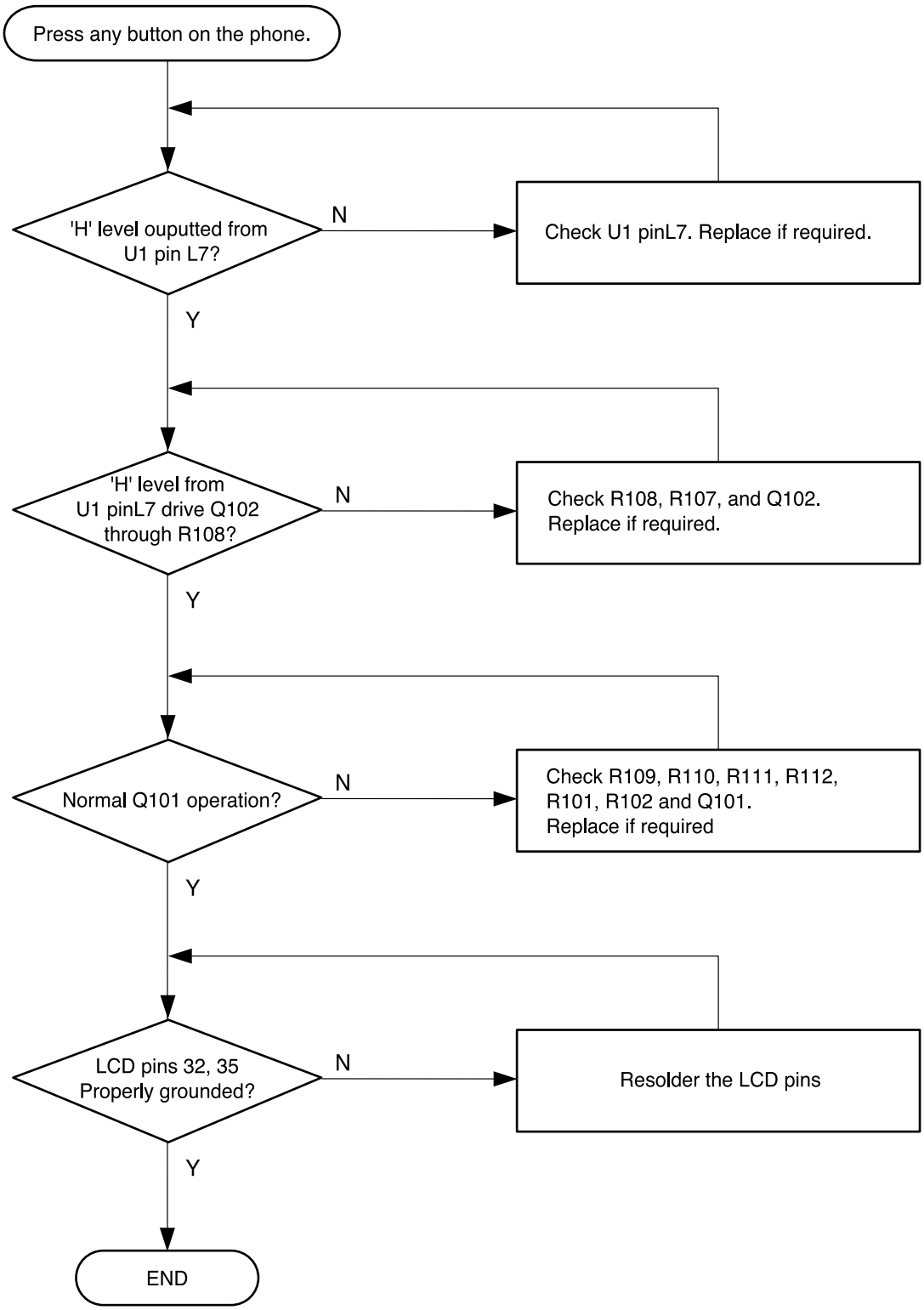
6-1-1 No Power



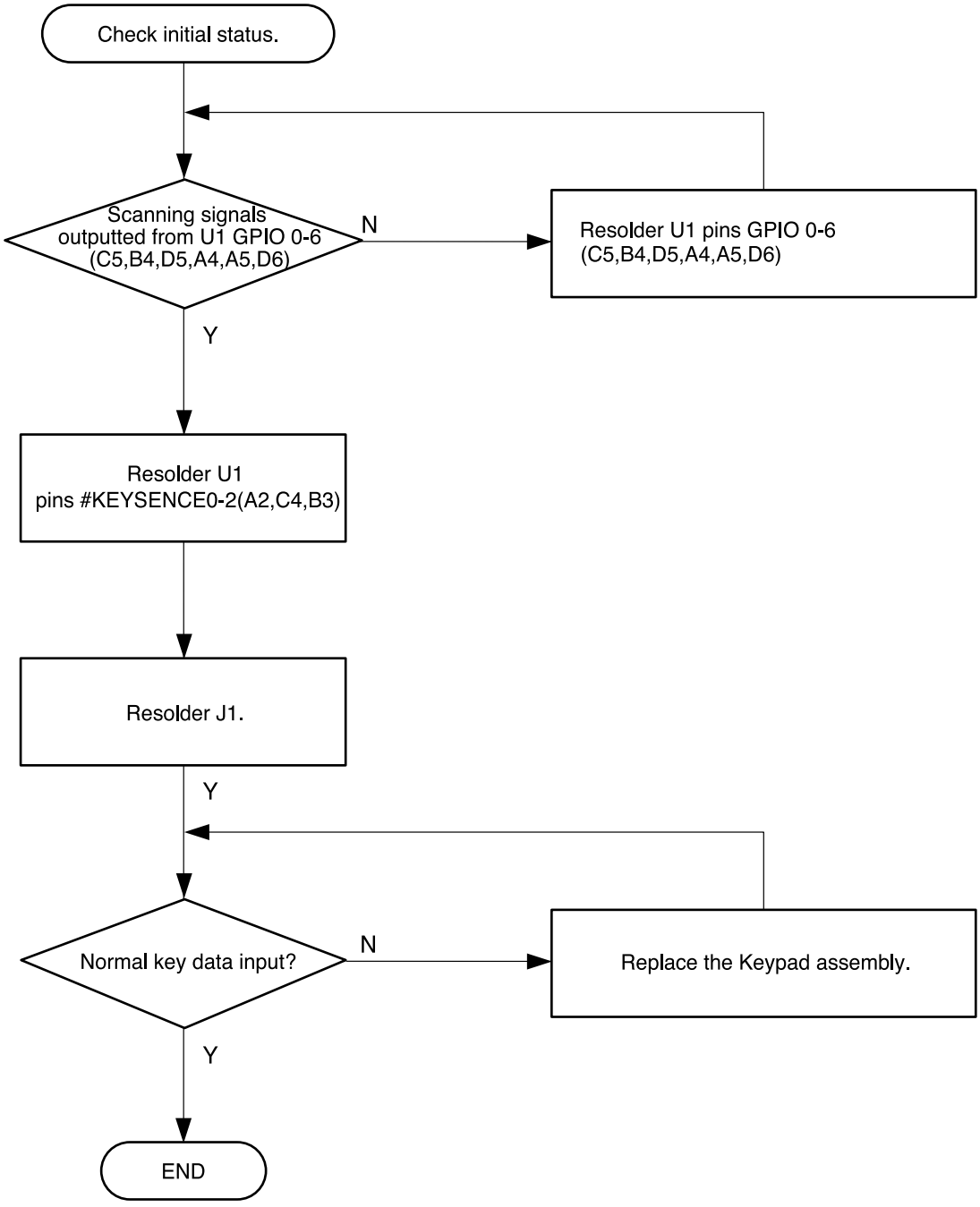
6-1-2 Abnormal initial operation (Normal +3.6V voltage source)



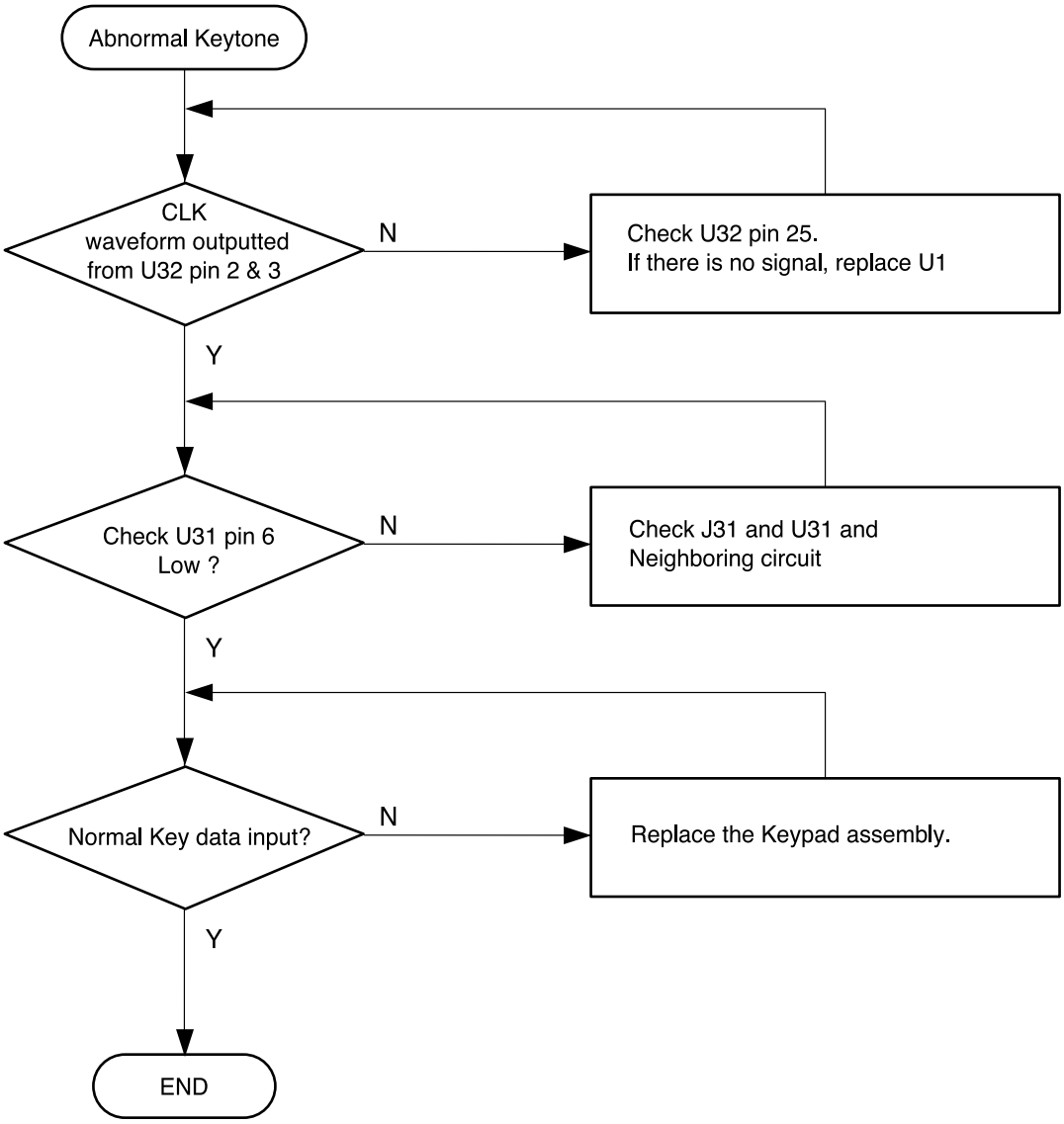
6-1-3 Abnormal Backlight Operation



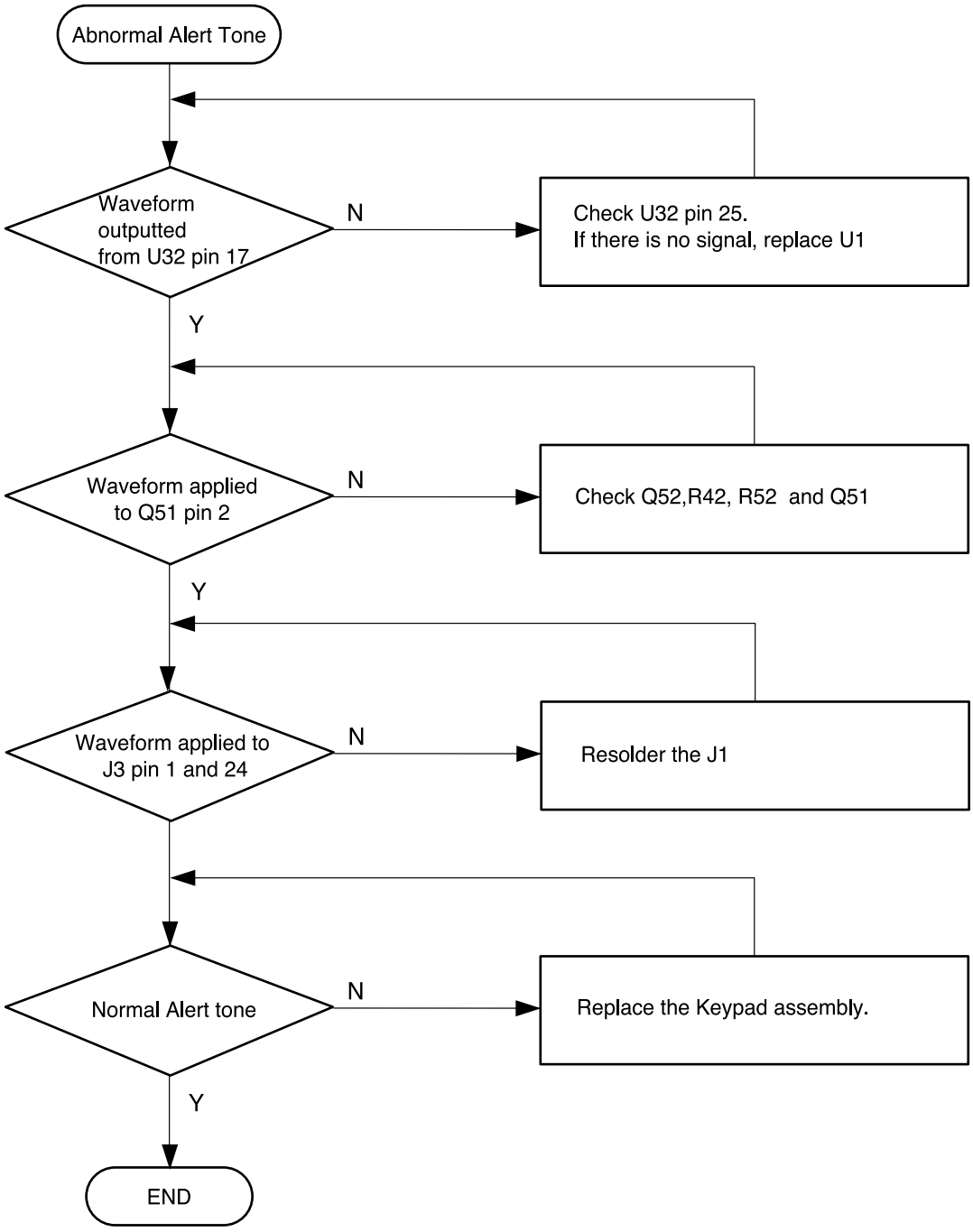
6-1-4 Abnormal Key Data Input



6-1-5 Abnormal Keytone

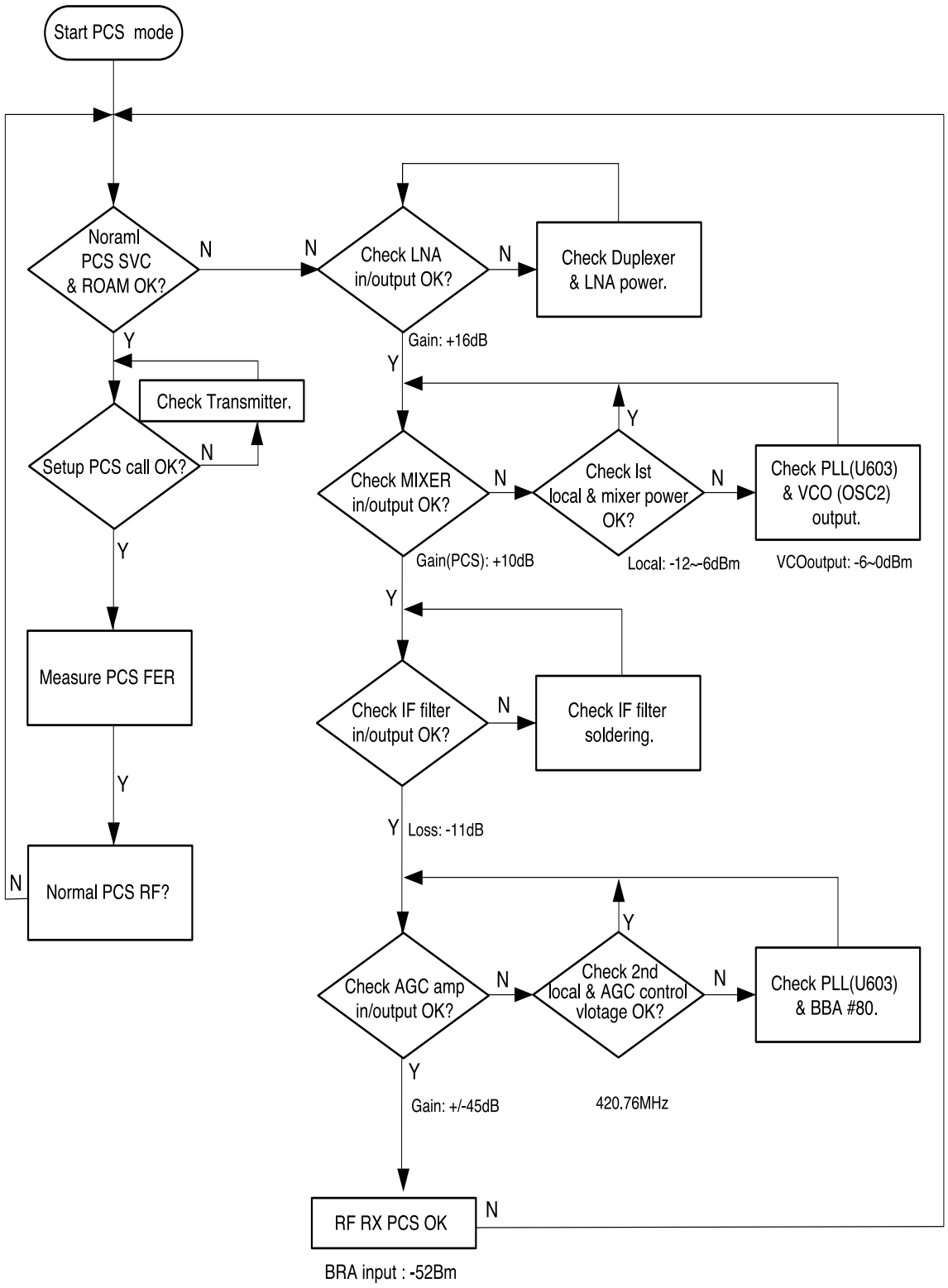


6-1-6 Abnormal Alert Tone

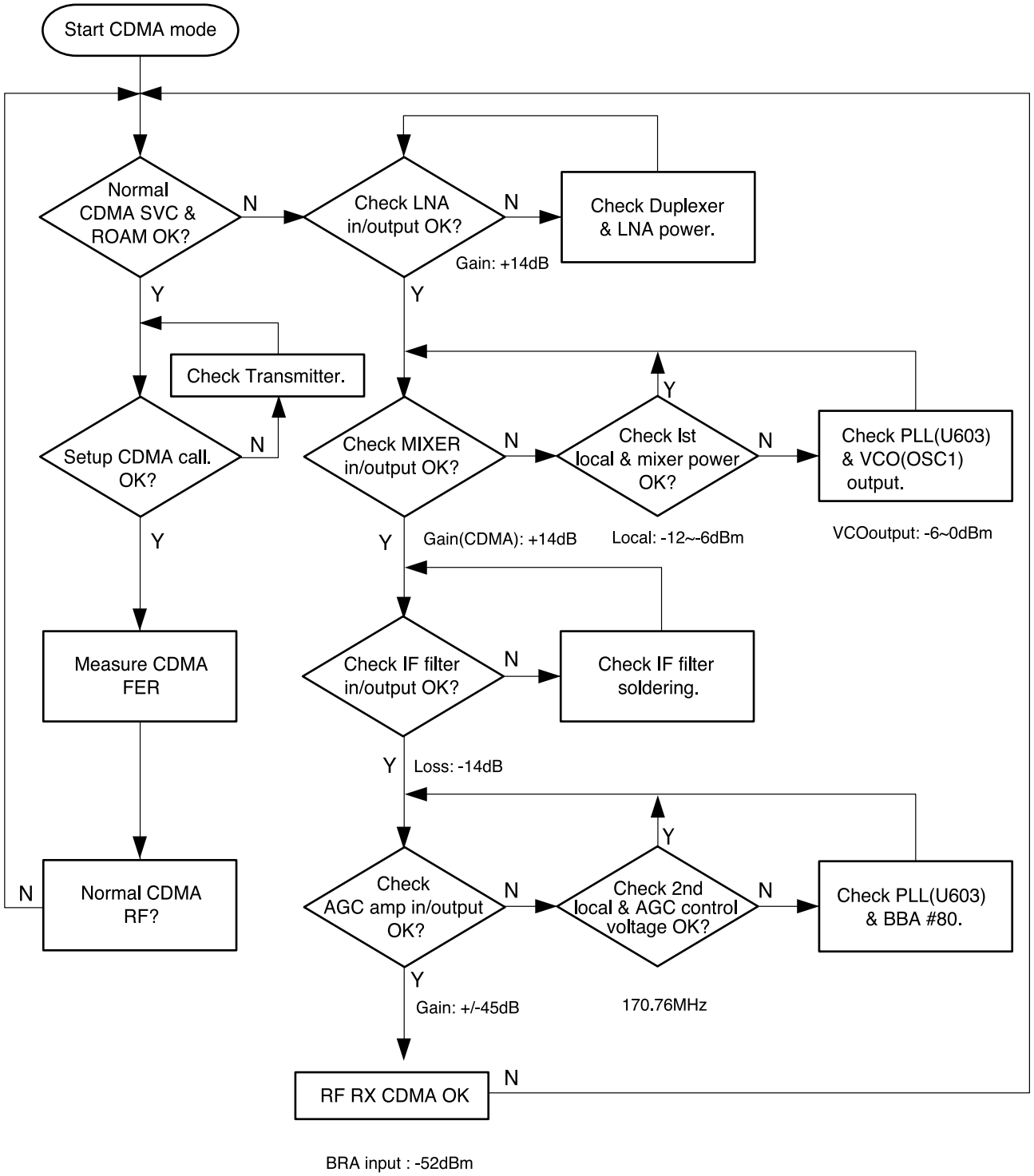


6-2 Receiver Section

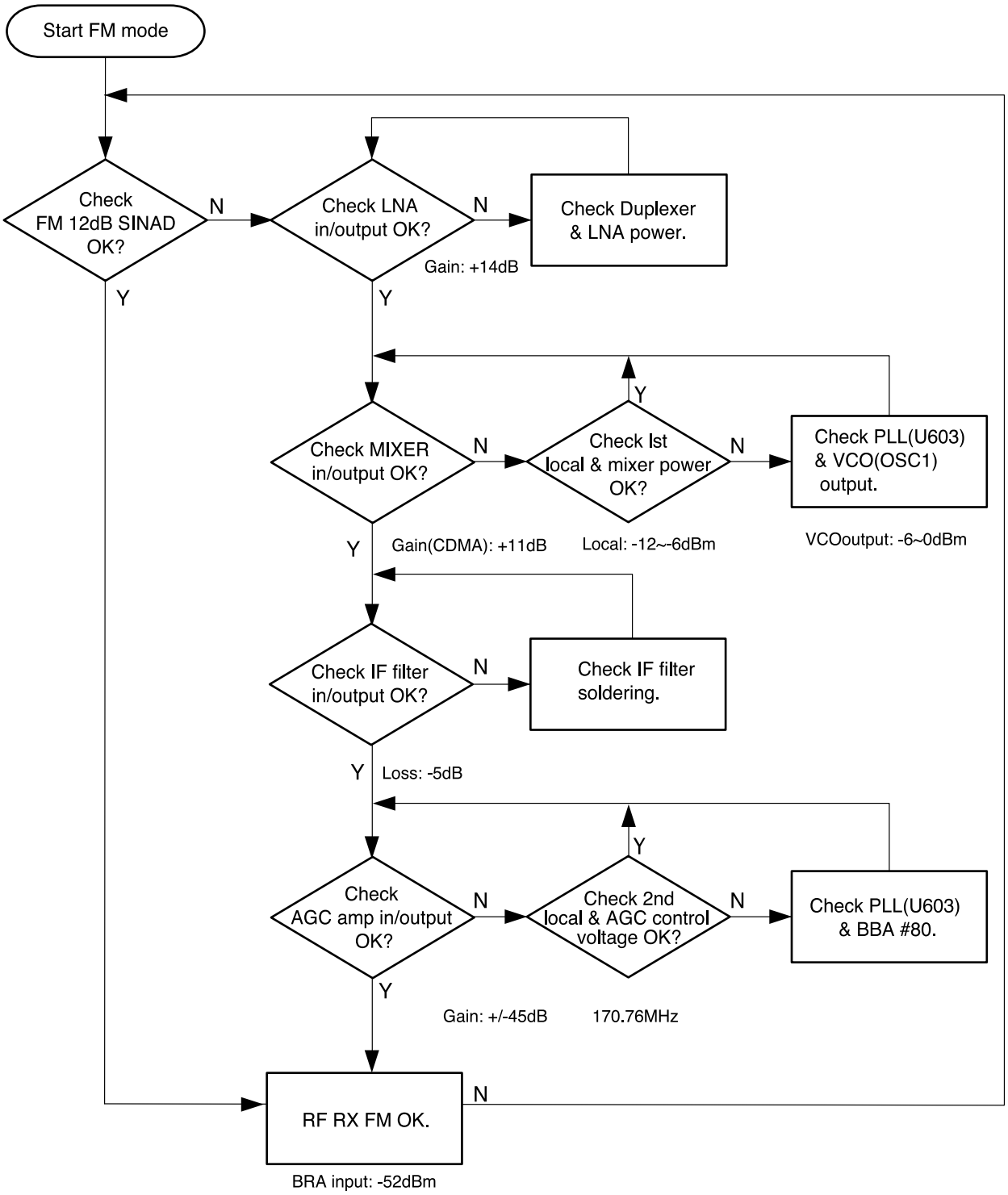
6-2-1 PCS



6-2-2 CDMA

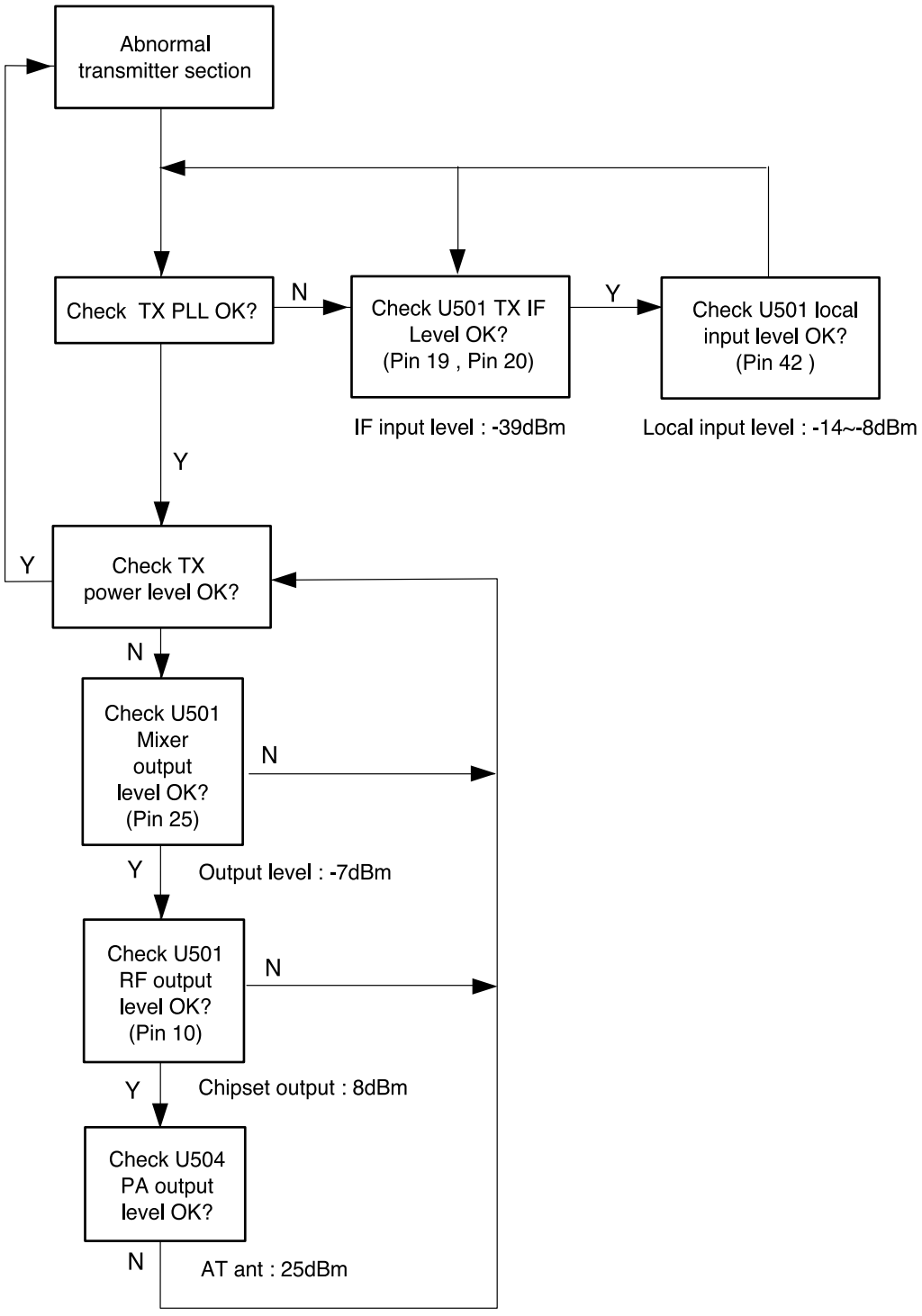

Start CDMA mode
Normal CDMA SVC & ROAM OK?
N
Check LNA in/output OK?
N
Check Duplexer & LNA power.
Gain: +14dB
Y
Y
Check Transmitter.
Setup CDMA call. OK?
N
Check MIXER in/output OK?
N
Check Ist local & mixer power OK?
N
Check PLL(U603) & VCO(OSC1) output.
VCOoutput: -6~0dBm
Y
Y
Gain(CDMA): +14dB
Local: -12~-6dBm
Measure CDMA FER
Check IF filter in/output OK?
N
Check IF filter soldering.
Y
Loss: -14dB
N
Normal CDMA RF?
Check AGC amp in/output OK?
N
Check 2nd local & AGC control voltage OK?
N
Check PLL(U603) & BBA #80.
Y
Gain: +/-45dB
170.76MHz
RF RX CDMA OK
N
BRA input : -52dBm

6-2-3 FM

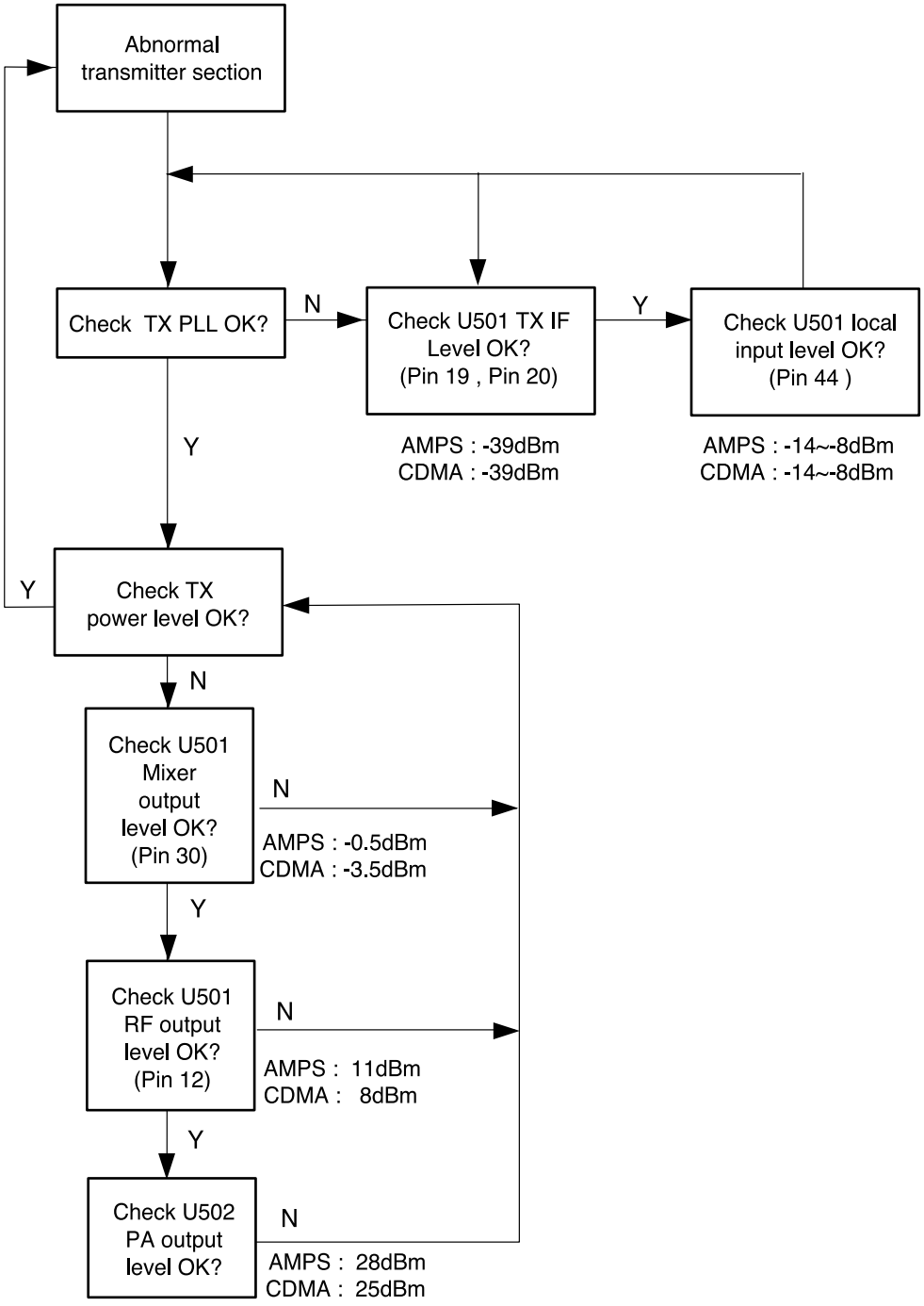

Start FM mode
Check FM 12dB SINAD OK?
N
Y
Check LNA in/output OK?
N
Y
Gain: +14dB
Check Duplexer & LNA power.
Check MIXER in/output OK?
N
Y
Check Ist local & mixer power OK?
N
Y
Check PLL(U603) & VCO(OSC1) output.
VCOoutput: -6~0dBm
Gain(CDMA): +11dB
Local: -12~-6dBm
Check IF filter in/output OK?
N
Y
Check IF filter soldering.
Loss: -5dB
Check AGC amp in/output OK?
N
Y
Check 2nd local & AGC control voltage OK?
N
Y
Check PLL(U603) & BBA #80.
Gain: +/-45dB
170.76MHz
RF RX FM OK.
N
BRA input: -52dBm

6-3 Transmitter Section

6-3-1 PCS



6-3.2 CDMA/ AMPS Mode



Memo

9. PCB Diagrams

9-1 Cellular Phone PCB

9-2 Desk-Top Rapid Charger PCB

9-3 Hands-Free kit PCB

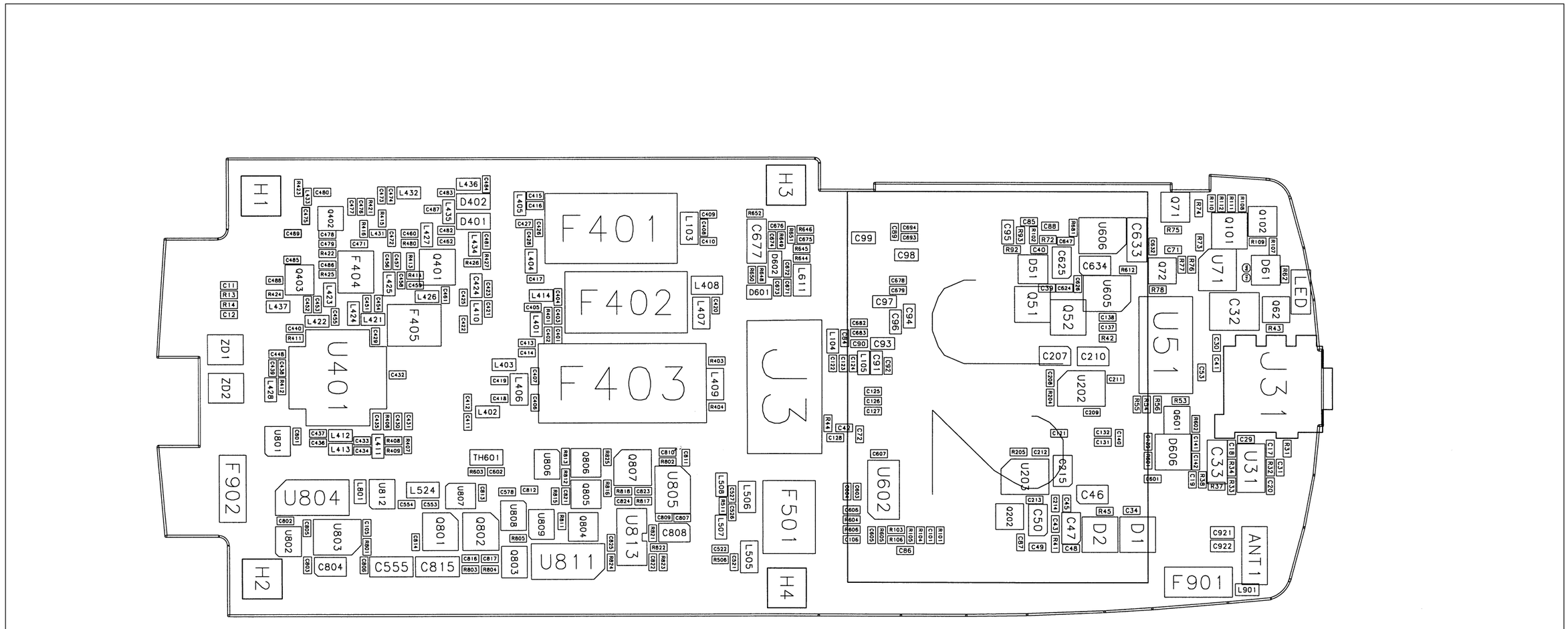
9-4 Cradle PCB

9-5 Car Adapter PCB

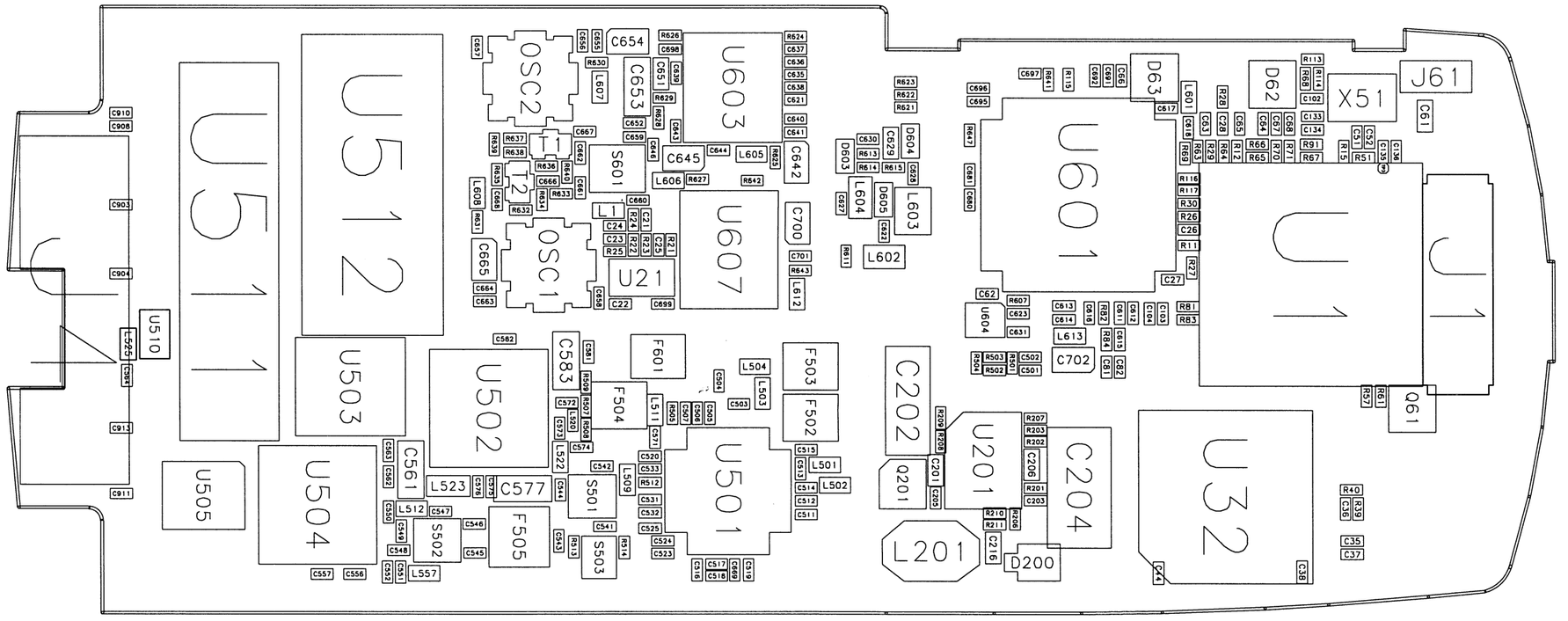
9-6 Rapid Travel Charger PCB

9-1 Cellular Phone PCB

9-1-1



9-1-2


U512
U511
U510
U505
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U503
U502
U501
U607
U603
U601
U604
U32
U21
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U1
OSC2
OSC1
T1
T2
S601
S501
S502
S503
F601
F502
F503
F504
F505
X51
J61
Q61
Q201
L201
L602
L613
C654
C653
C645
C642
C583
C561
C577
C523
C202
C204
C702
D63
D62
D200
C910
C908
C903
C904
C913
C911
C582
C700
C701
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C210
C211
C216
C206
C205
C203
C201
C202
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C35
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C38
C44
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C36
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C42
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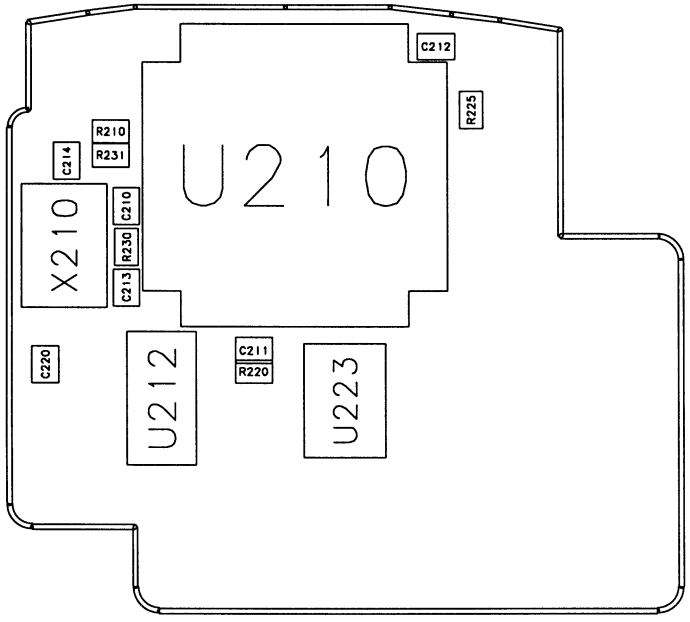

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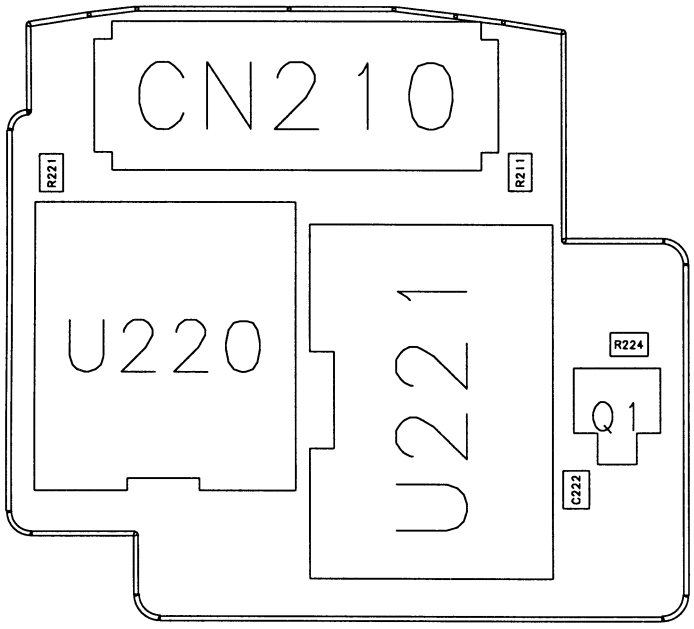
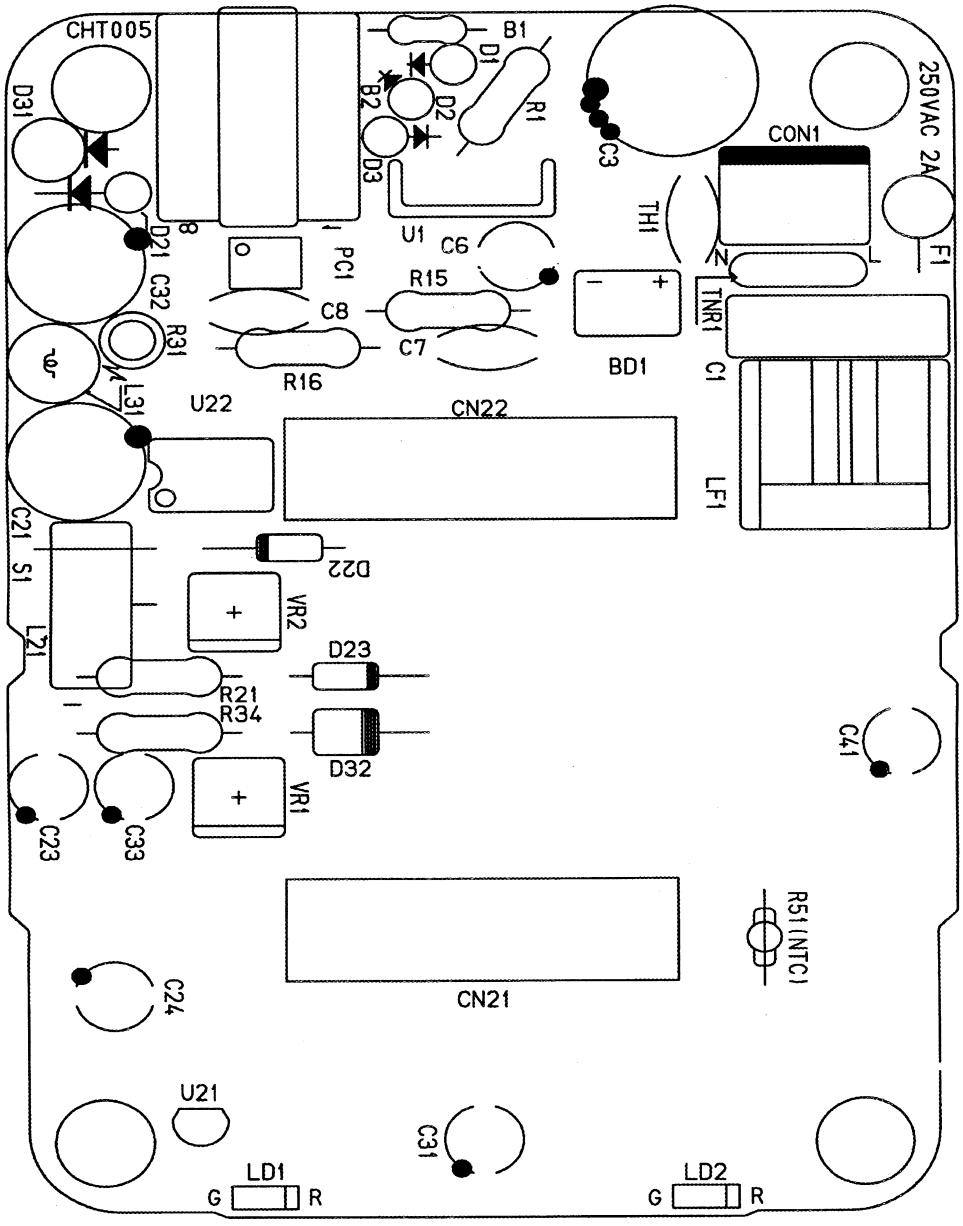


9-2 Desk-Top rapid Charger PCB

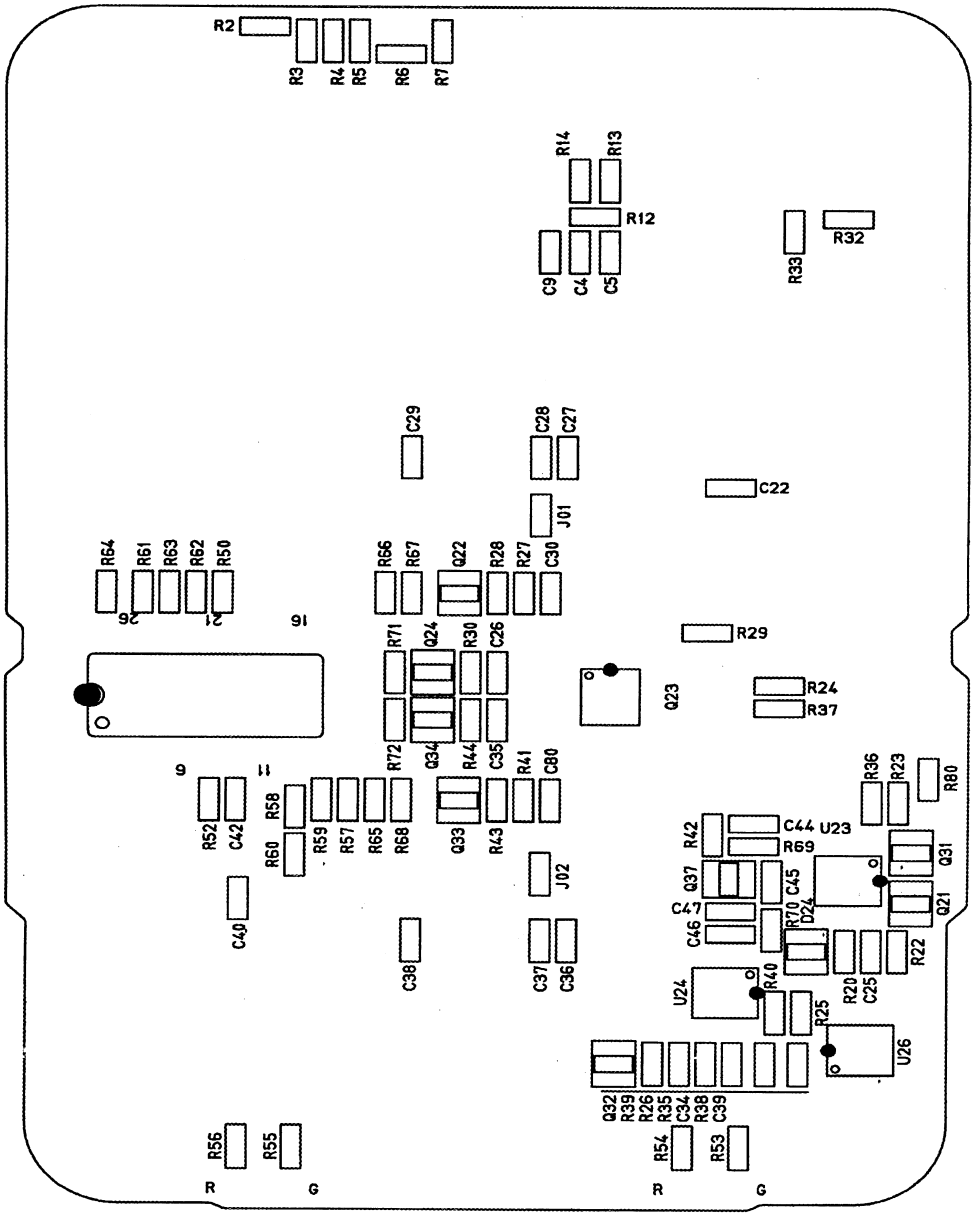
9-2-1

Top View



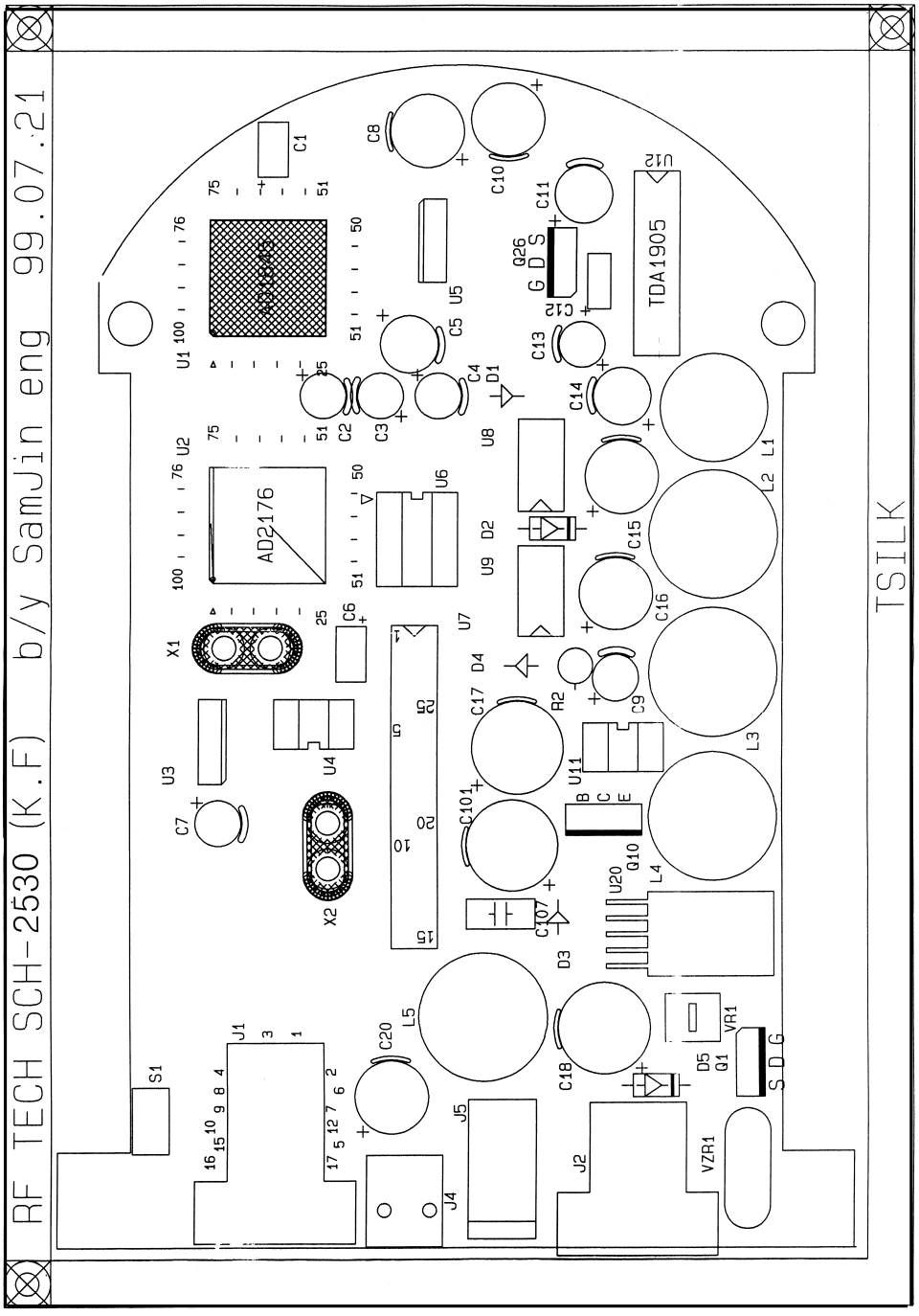
9-2-2

Bottom View



9-3 Hands-Free kit PCB

9-3-1



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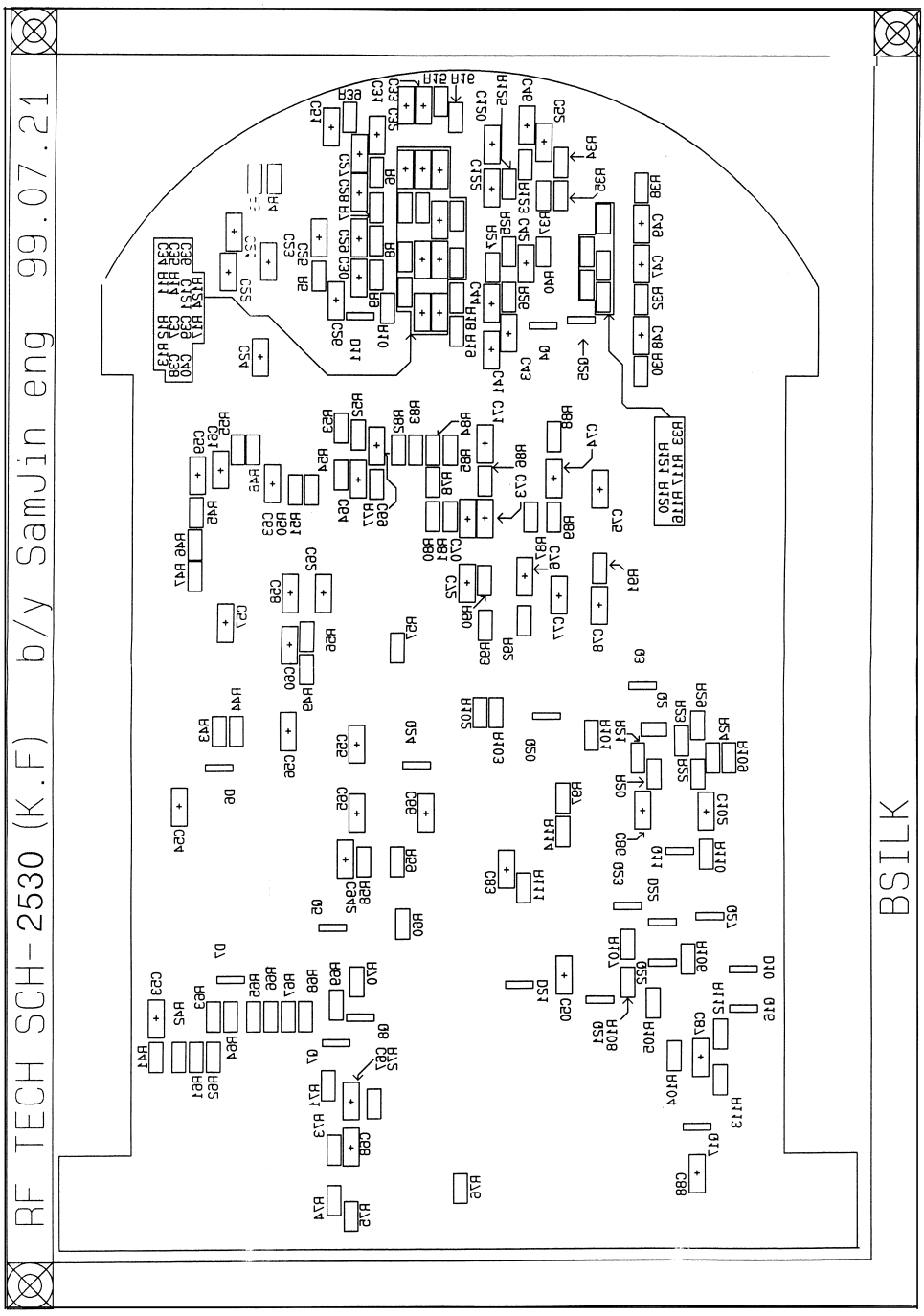
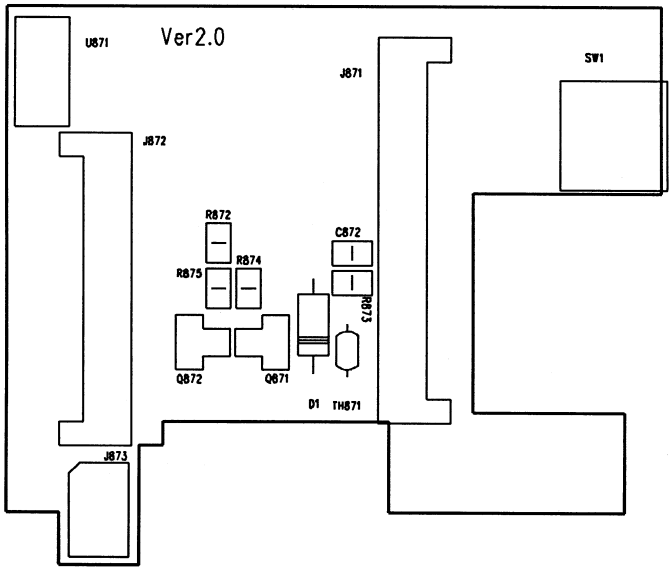
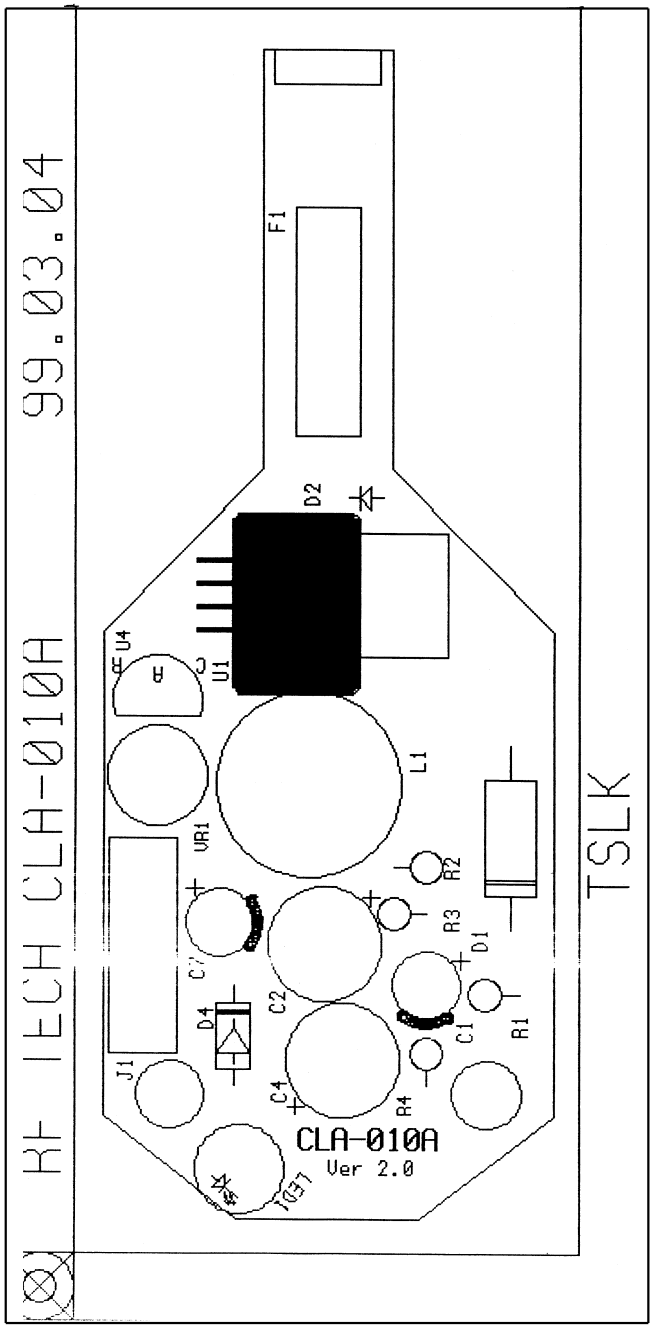


9-4 Cradle PCB



9-5 Car Adapter PCB

9-5-1



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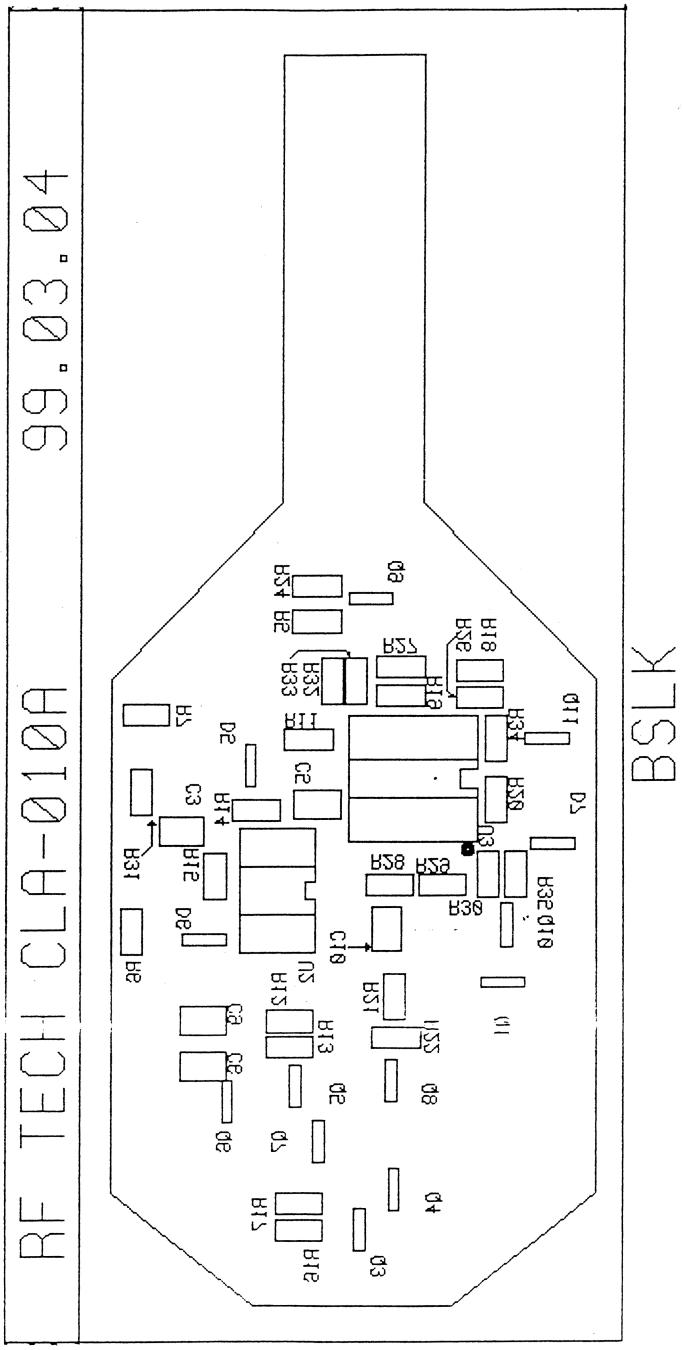
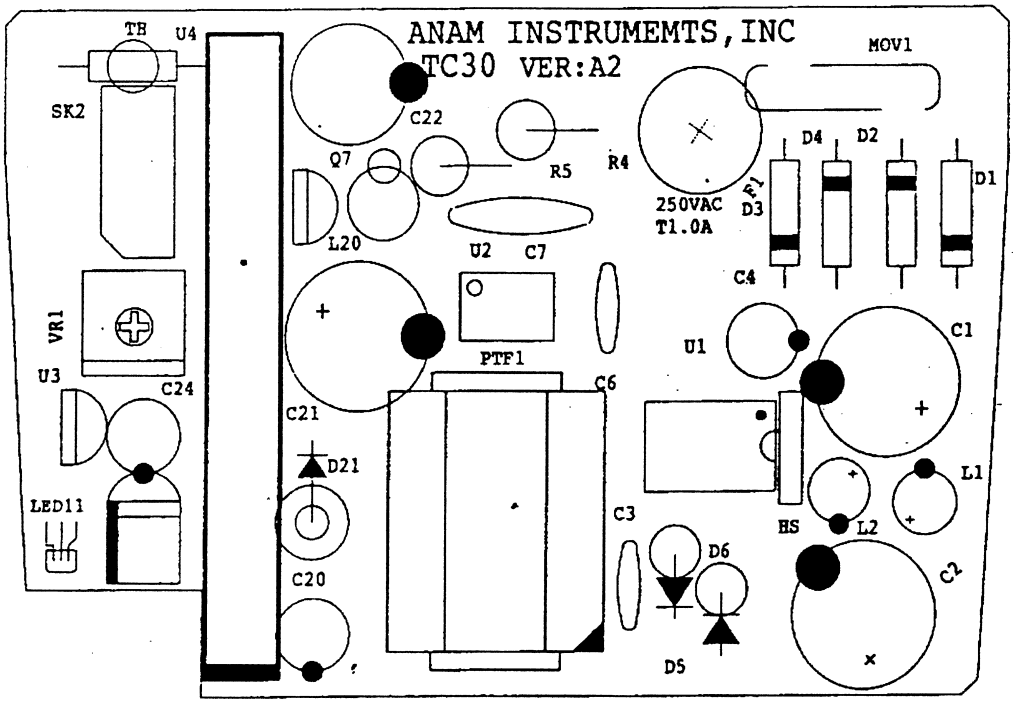
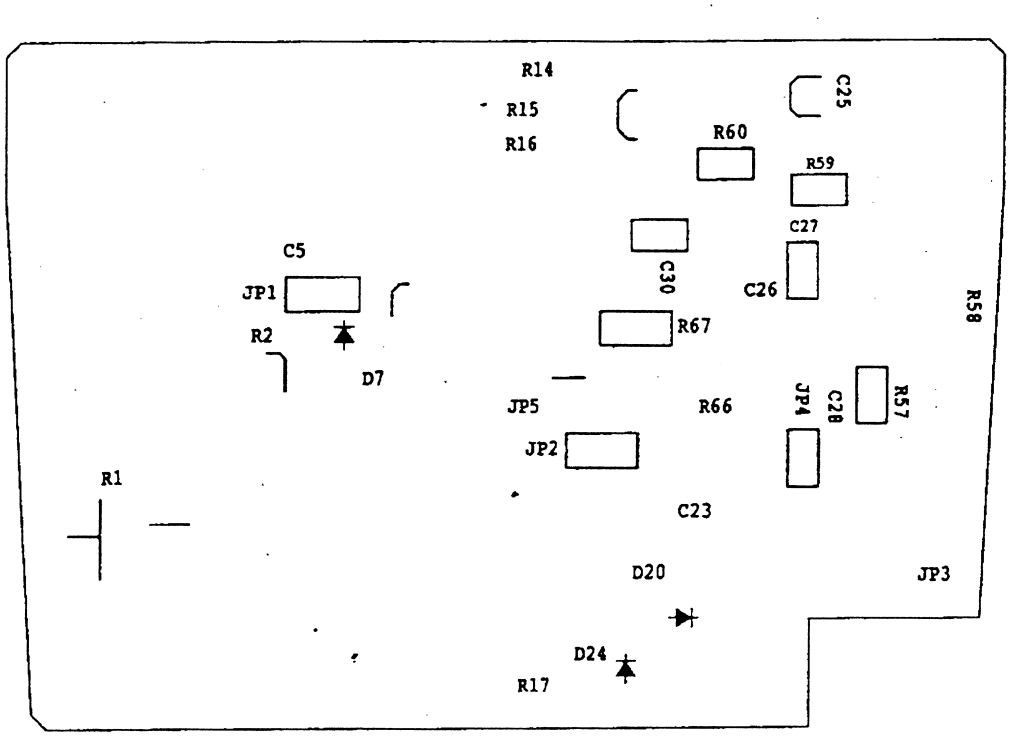


9-6 Rapid Travel Charger PCB

9-6-1



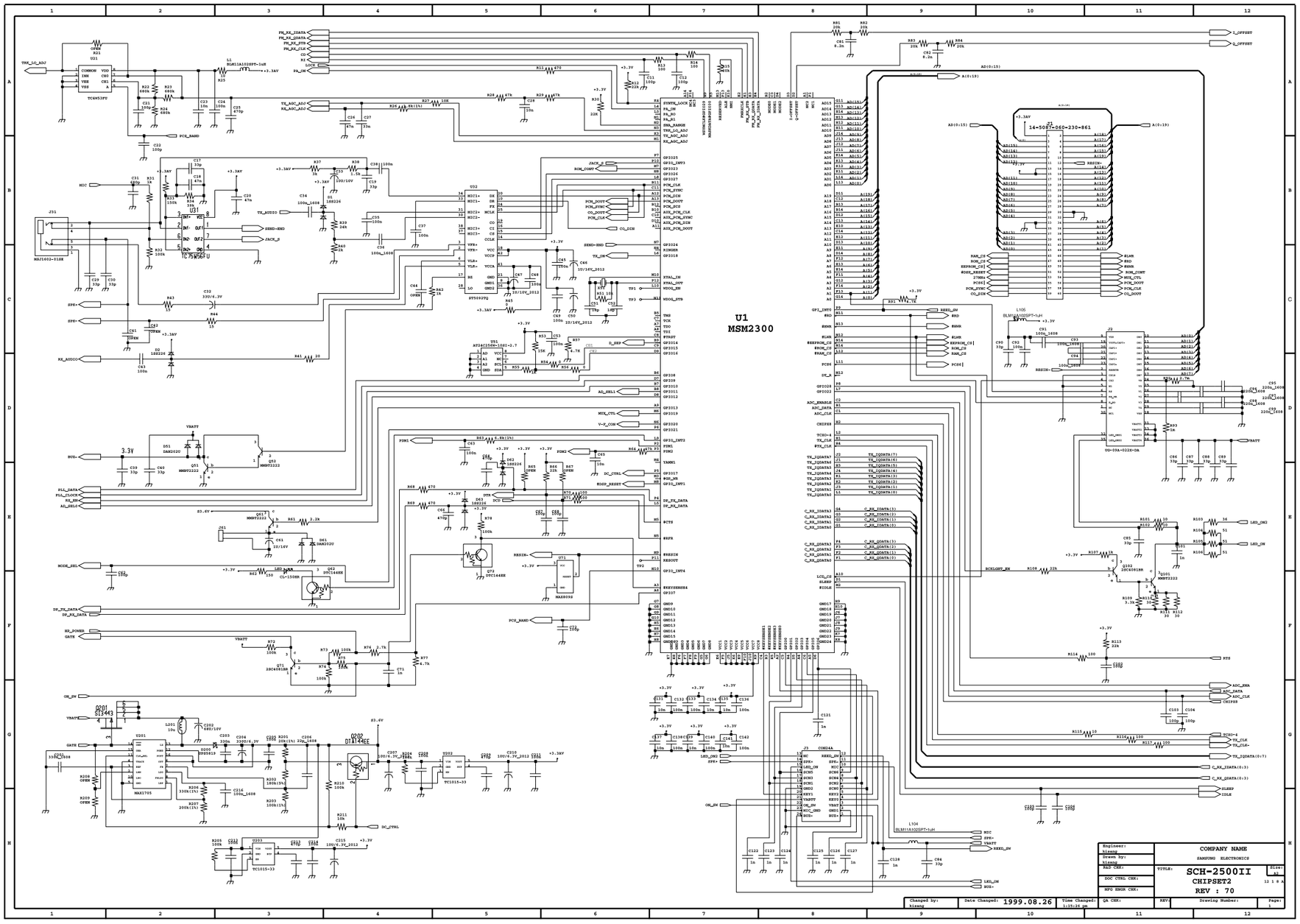
9-6-2


R14
R15
R16
C25
R60
R59
C27
C5
JP1
C30
C26
R58
R2
R67
D7
JP5
R66
JP4
C28
R57
JP2
R1
C23
D20
JP3
D24
R17

11. Circuit Diagram

11-1 Main Circuit Diagram

11-1-1



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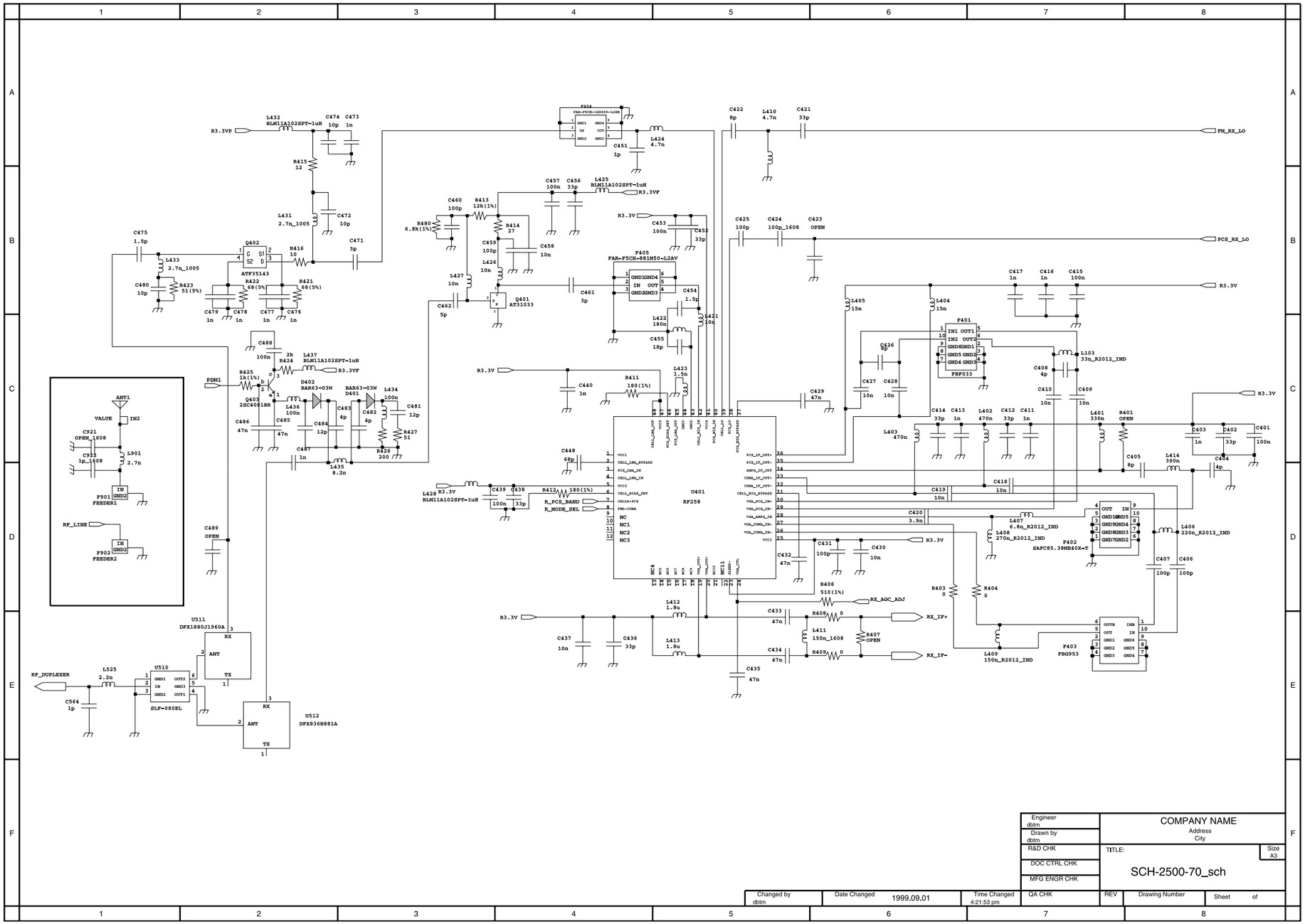
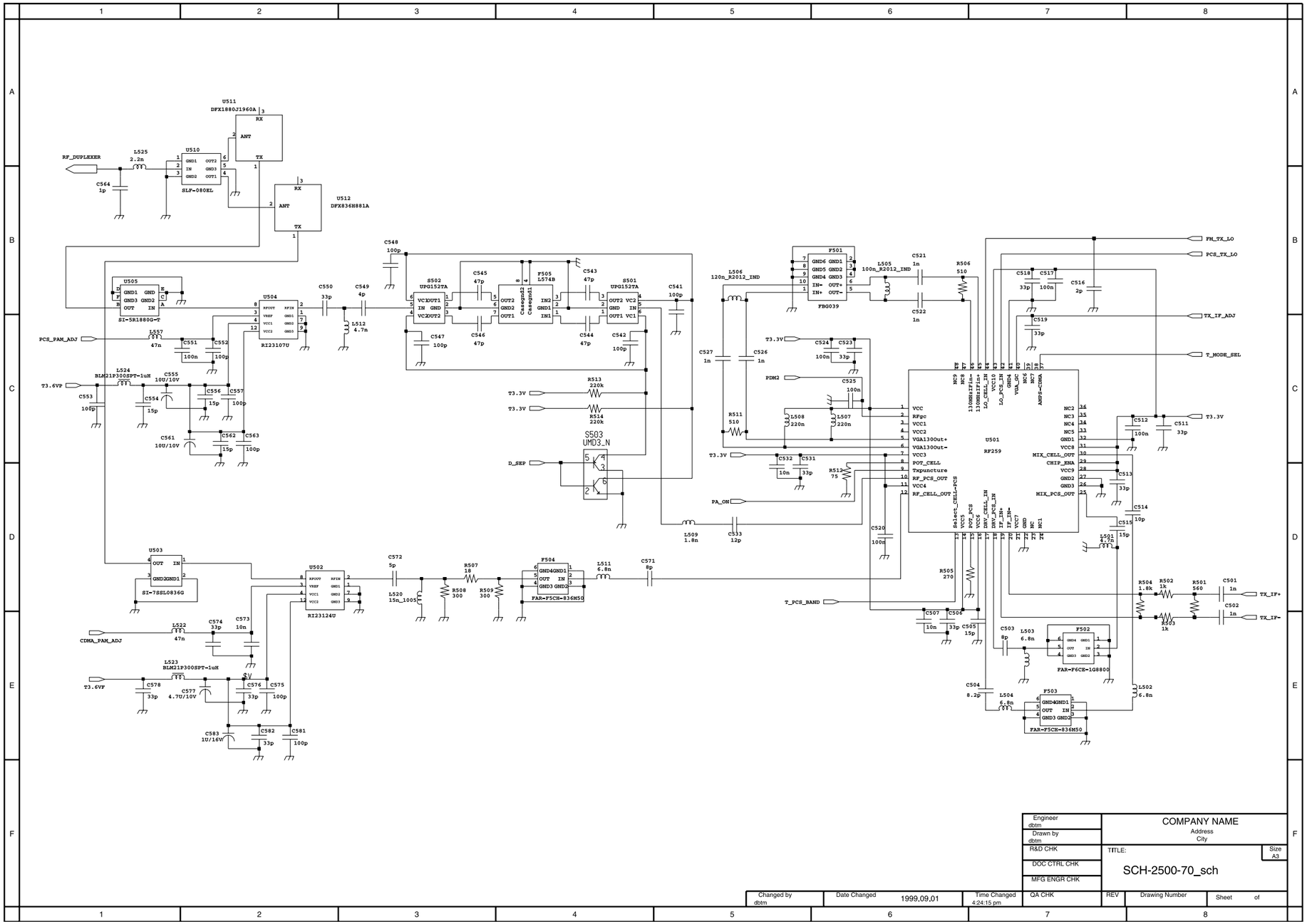

L432 BLM11A102SPT-1uH
C474 10p
C473 1n
R3.3VP
R415 12
L431 2.7n_1005
C472 10p
C471 3p
C475 1.5p
Q402 ATF35143
L433 2.7n_1005
R416 10
C480 10p
R423 51(5%)
R422 68(5%)
R421 68(5%)
C479 1n
C478 1n
C477 1n
C476 1n
C488 100n
R424 2k
L437 BLM11A102SPT-1uH
R3.3VF
PDM1
R425 1k(1%)
Q403 2SC4081BR
D402 BAR63-03W
D401 BAR63-03W
L436 100n
L434 100n
C481 12p
C486 47n
C485 47n
C484 12p
C483 4p
C482 4p
R427 51
R426 200
C487 1n
L435 8.2n
ANT1
VALUE
IN2
C921 OPEN_1608
C922 1p_1608
L901 2.7n
F901 FEEDER1
F902 FEEDER2
RF_LINE
C489 OPEN
U511 DFX1880J1960A
RX
ANT
TX
RF_DUPLEXER
L525 2.2n
U510 SLF-080EL
C564 1p
U512 DFX836H881A
F404 FAR-F6CB-1G9450-L2EB
L424 4.7n
C451 1p
C422 8p
L410 4.7n
C421 33p
FM_RX_LO
C457 100n
C456 33p
L425 BLM11A102SPT-1uH
R3.3VF
C460 100p
R413 12k(1%)
R480 6.8k(1%)
R414 27
C459 100p
C458 10n
L426 10n
C453 100n
C452 33p
R3.3V
C425 100p
C424 100p_1608
C423 OPEN
PCS_RX_LO
F405 FAR-F5CH-881M50-L2AV
L427 10n
Q401 AT31033
C462 5p
C461 3p
C454 1.5p
L422 180n
L421 10n
C455 18p
C417 1n
C416 1n
C415 100n
L405 15n
L404 15n
F401 FBF033
C426 8p
C427 10n
C428 10n
L103 33n_R2012_IND
C408 4p
C409 10n
C410 10n
C440 1n
R411 180(1%)
L423 1.5n
C429 47n
C414 33p
C413 1n
C402 33p
C412 33p
C411 1n
L401 330n
R401 OPEN
C403 1n
C401 100n
L403 470n
L402 470n
C405 8p
L414 390n
C404 4p
C448 68p
L428 BLM11A102SPT-1uH
C439 100n
C438 33p
R412 180(1%)
R_PCS_BAND
R_MODE_SEL
U401 RF258
C419 10n
C418 10n
C420 3.9n
L407 6.8n_R2012_IND
L408 270n_R2012_IND
F402 SAFC85.38MS40X-T
L406 220n_R2012_IND
C407 100p
C406 100p
C431 100p
C430 10n
C432 47n
R406 510(1%)
RX_AGC_ADJ
R403 0
R404 0
L412 1.8u
C433 47n
R408 0
RX_IF+
L411 150n_1608
R407 OPEN
L413 1.8u
C434 47n
R409 0
RX_IF-
C437 10n
C436 33p
C435 47n
L409 150n_R2012_IND
F403 FBG953
COMPANY NAME
Address
City
Engineer dbtm
Drawn by dbtm
R&D CHK
DOC CTRL CHK
MFG ENGR CHK
TITLE:
SCH-2500-70_sch
Size A3
Changed by dbtm
Date Changed 1999.09.01
Time Changed 4:21:53 pm
QA CHK
REV
Drawing Number
Sheet of

11-1-3


U511
DFX1880J1960A
RX
ANT
TX
RF_DUPLEXER
L525
2.2n
U510
SLF-080EL
C564
1p
U512
DFX836H881A
U505
SI-5R1880G-F
U504
RI23107U
C548
100p
C550
33p
C549
4p
L512
4.7n
S502
UPG152TA
S501
UPG152TA
F505
L574B
C545
47p
C543
47p
C547
100p
C546
47p
C544
47p
C542
100p
C541
100p
PCS_PAM_ADJ
L557
47n
C551
100n
C552
100p
L524
BLM21P300SPT-1uH
T3.6VP
C553
100p
C554
15p
C555
10U/10V
C556
15p
C557
100p
C561
10U/10V
C562
15p
C563
100p
R513
220k
R514
220k
T3.3V
S503
UMD3_N
D_SEP
L509
1.8n
C533
12p
PA_ON
F501
FBG039
L506
120n_H2012_IND
L505
100n_H2012_IND
C521
1n
C522
1n
R506
510
C527
1n
C526
1n
T3.3V
C524
100n
C523
33p
PDM2
C525
100n
R511
510
L508
220n
L507
220n
C532
10n
C531
33p
R512
75
C520
100n
U501
RF259
VCC
RFgc
VCC1
VCC2
VGA1300Out+
VGA1300Out-
VCC3
PCF_CELL
Txpuncture
RF_PCS_OUT
VCC4
RF_CELL_OUT
Select_CELL-PCS
VCC5
PCF_PCS
VCC6
DRV_CELL_IN
DRV_PCS_IN
IF_IN+
VCC7
IF_IN-
GND
NC
NC1
130MHzIFio-
130MHzIFio+
LO_CELL_IN
LO_PCS_IN
GND4
VCC10
NC6
NC7
AMPS-CDMA
NC2
NC3
NC4
NC5
GND1
VCC8
MIX_CELL_OUT
CHIP_RHA
VCC9
GND2
GND3
MIX_PCS_OUT
C518
33p
C517
100n
C516
2p
C519
33p
C512
100n
C511
33p
C513
33p
C514
10p
C515
15p
L501
4.7n
R504
1.8k
R502
1k
R501
560
C501
1n
C502
1n
R503
1k
FM_TX_LO
PCS_TX_LO
TX_IF_ADJ
T_MODR_SEL
TX_IF+
TX_IF-
U503
SI-7SSL0836G
U502
RI23124U
C572
5p
L520
15n_1005
R507
18
R508
300
R509
300
F504
FAR-F5CH-836M50
L511
6.8n
C571
8p
T_PCS_BAND
R505
270
C507
10n
C506
33p
C505
15p
C503
8p
L503
6.8n
F502
FAR-F6CR-1G8800
C504
8.2p
L504
6.8n
F503
FAR-F5CH-836M50
L502
6.8n
CDMA_PAM_ADJ
L522
47n
C574
33p
C573
10n
L523
BLM21P300SPT-1uH
T3.6VF
C578
33p
C577
4.7U/10V
C576
33p
C575
100p
C583
1U/16W
C582
33p
C581
100p
Engineer
dbtm
Drawn by
dbtm
R&D CHK
DOC CTRL CHK
MFG ENGR CHK
COMPANY NAME
Address
City
TITLE:
SCH-2500-70_sch
Size
A3
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1999.09.01
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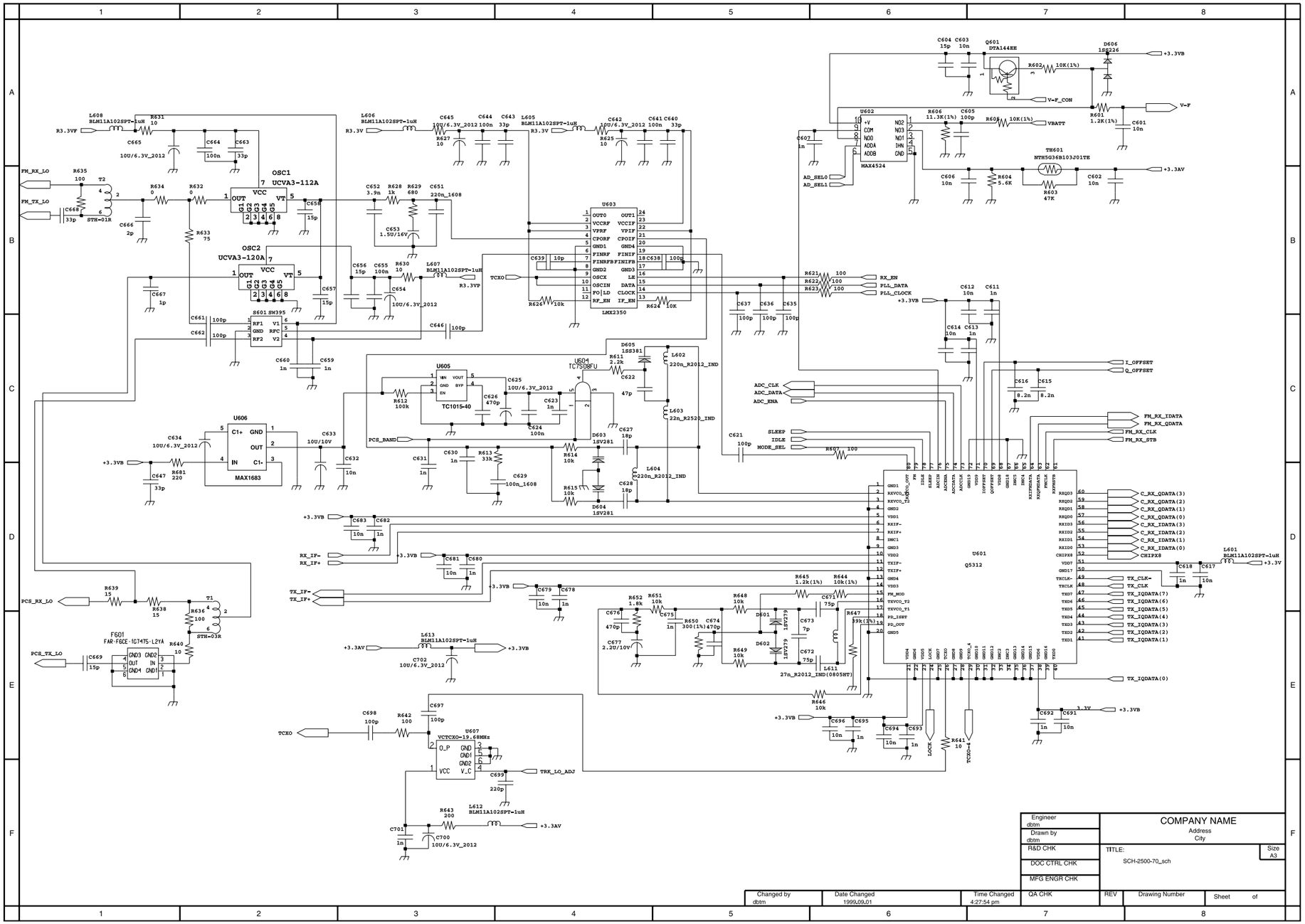
of

11-1-4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UCVA3-112A
OSC2
UCVA3-120A
U603
LMX2350
U601
Q5312
U602
MAX4524
U605
TC1015-40
U606
MAX1683
U607
YCTCXO-19.68MHz
U604
TC7SOSFU
S601 SW395
F601
FAR-F6CE-1G1475-L2YA
T1
T2
STH-01R
STH-03R
Q601
DTA144EE
TH601
NTH5G36B103J01TE
L608 BLM11A102SPT-1uH
L606 BLM11A102SPT-1uH
L605 BLM11A102SPT-1uH
L607 BLM11A102SPT-1uH
L601 BLM11A102SPT-1uH
L602 220n_R2012_IND
L603 22n_R2520_IND
L604 220n_R2012_IND
L611 27n_R2012_IND(0805HT)
L612 BLM11A102SPT-1uH
L613 BLM11A102SPT-1uH
D605 1SS381
D606 1SS226
D603 1SV281
D604 1SV281
D601 1SV279
D602 1SV279
FM_RX_LO
FM_TX_LO
PCS_RX_LO
PCS_TX_LO
R3.3VF
R3.3V
+3.3VB
+3.3AV
+3.3AV
TCXO
PCS_BAND
RX_IF-
RX_IF+
TX_IF-
TX_IF+
V-F
V-F_CON
VBATT
AD_SEL0
AD_SEL1
RX_EN
PLL_DATA
PLL_CLOCK
ADC_CLK
ADC_DATA
ADC_ENA
SLEEP
IDLE
MODE_SEL
I_OFFSET
Q_OFFSET
FM_RX_IDATA
FM_RX_QDATA
FM_RX_CLK
FM_RX_STB
C_RX_QDATA(3)
C_RX_QDATA(2)
C_RX_QDATA(1)
C_RX_QDATA(0)
C_RX_IDATA(3)
C_RX_IDATA(2)
C_RX_IDATA(1)
C_RX_IDATA(0)
CHIPX8
TX_CLK-
TX_CLK
TX_IQDATA(7)
TX_IQDATA(6)
TX_IQDATA(5)
TX_IQDATA(4)
TX_IQDATA(3)
TX_IQDATA(2)
TX_IQDATA(1)
TX_IQDATA(0)
TRK_LO_ADJ
LOCK
TCXO-4
Engineer dbtm
Drawn by dbtm
R&D CHK
DOC CTRL CHK
MFG ENGR CHK
COMPANY NAME
Address
City
TITLE:
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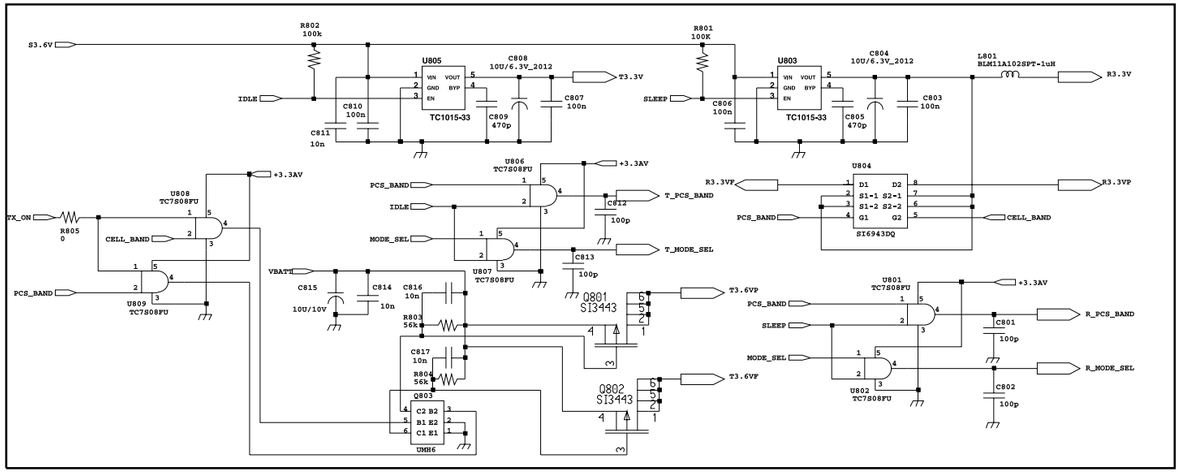
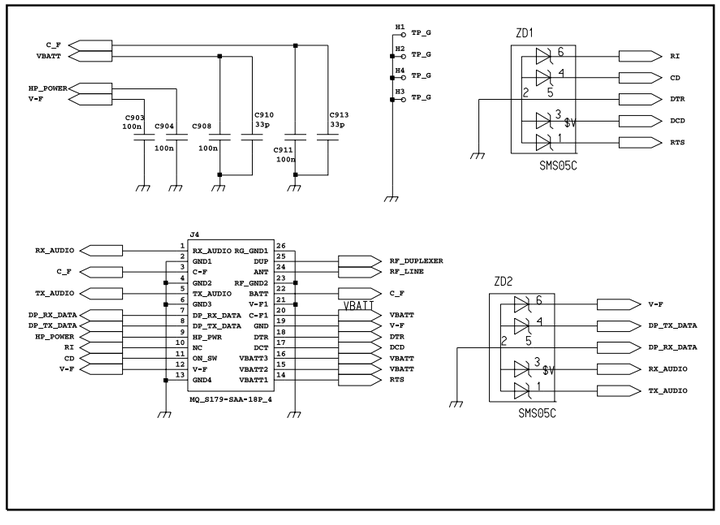
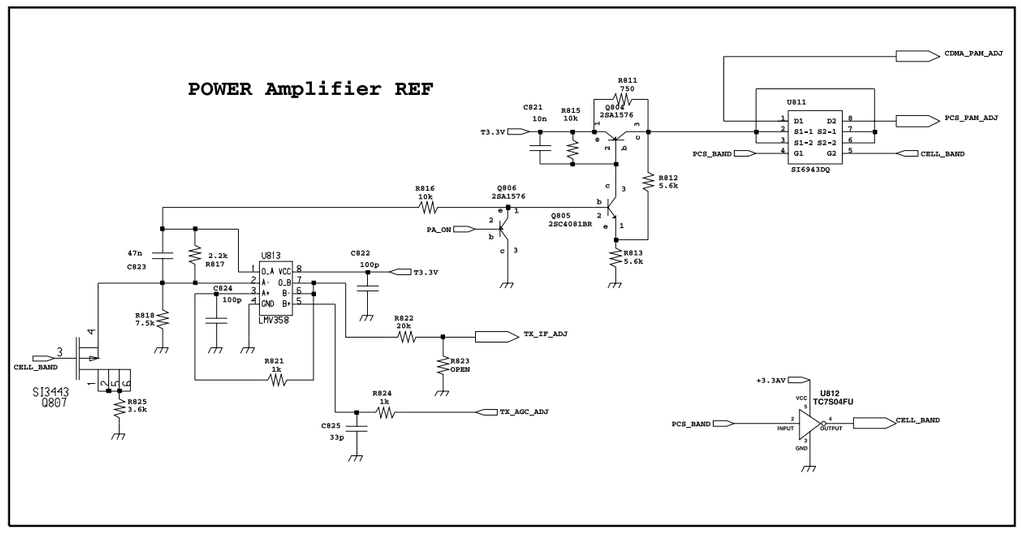
REV
Drawing Number
Sheet of







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Drawn by dbtm							
R&D CHK	TITLE: SCH-2500-70_sch	Size A3					
DOC CTRL CHK							
MFG ENGR CHK							
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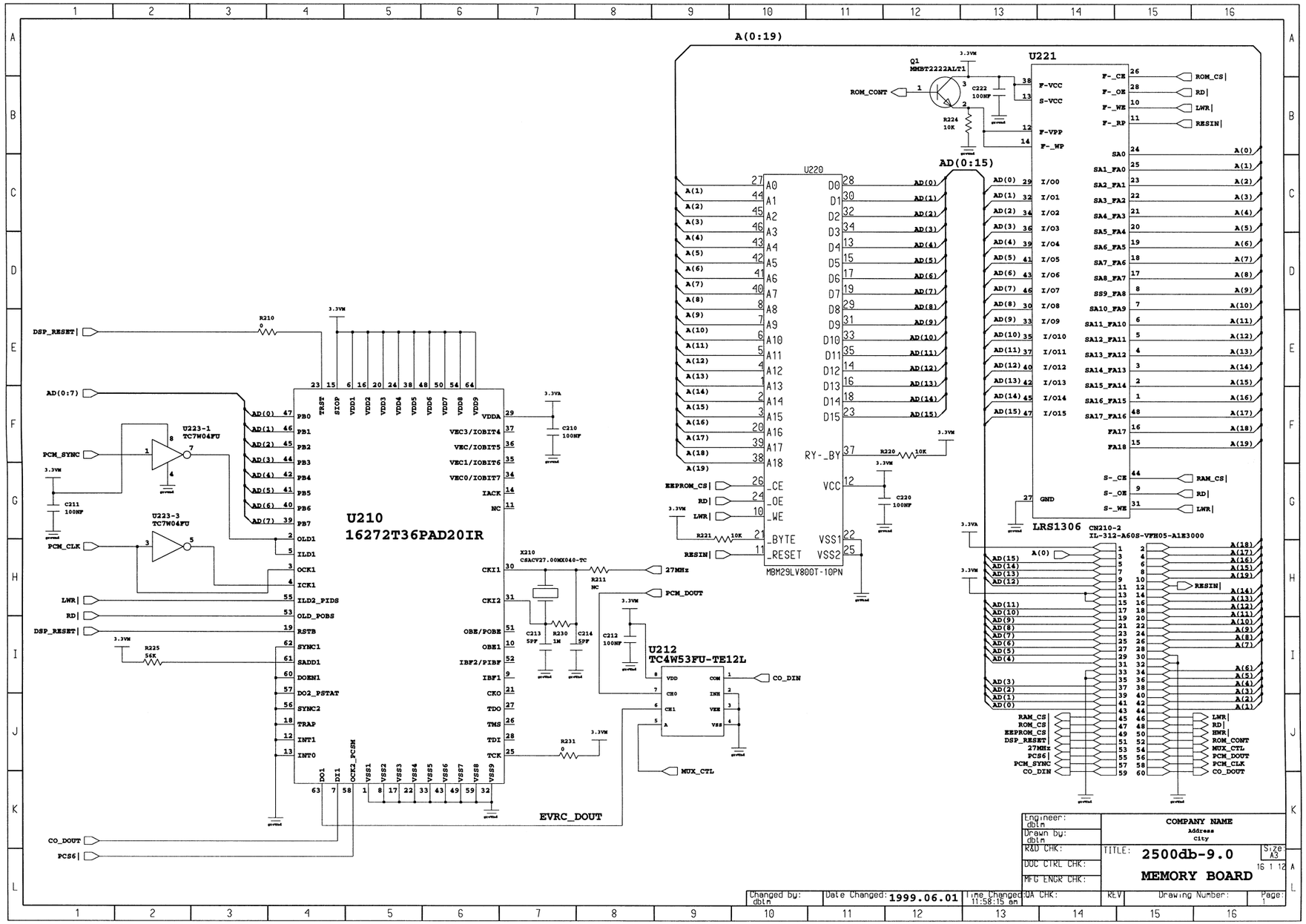
11-1-6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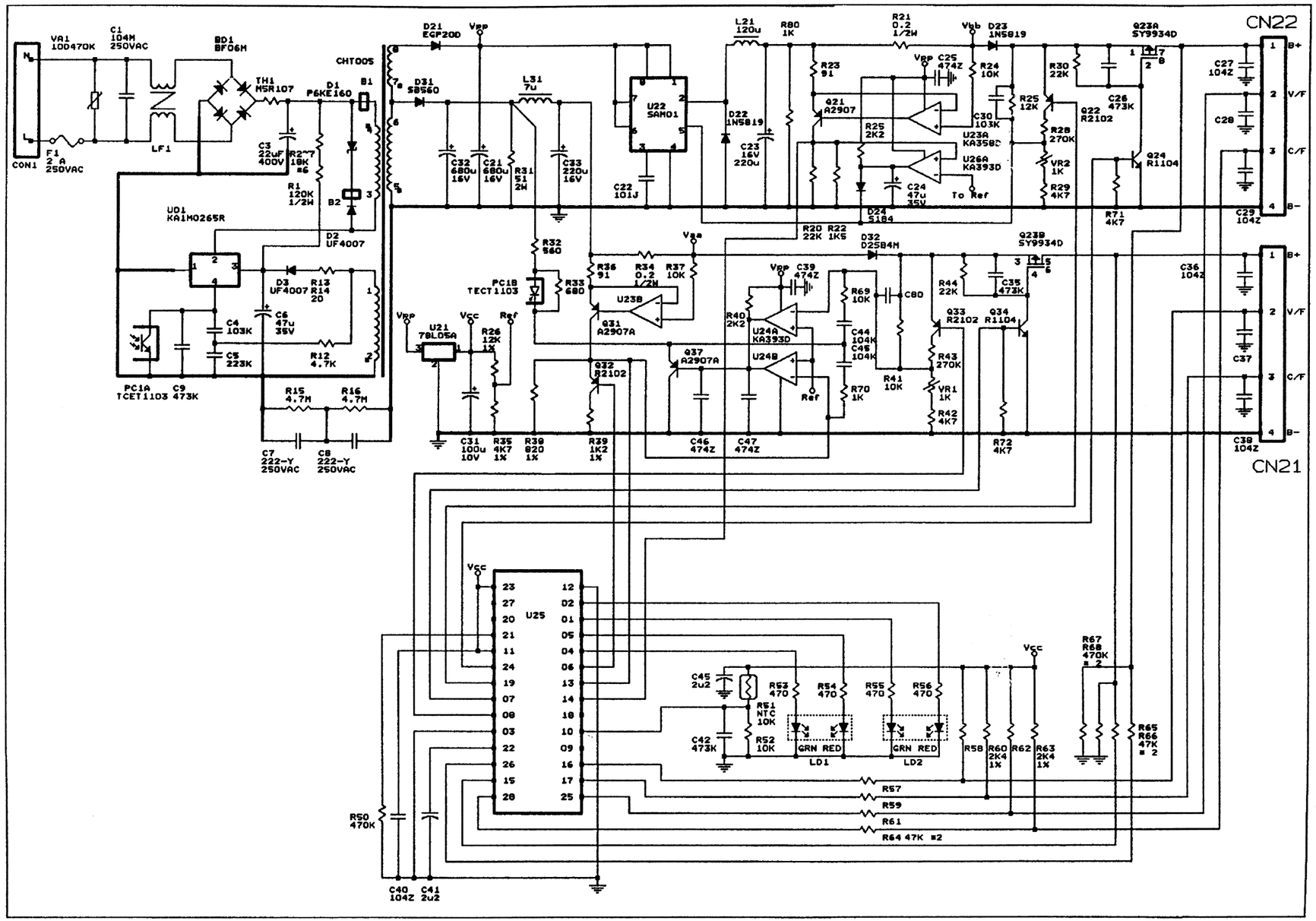
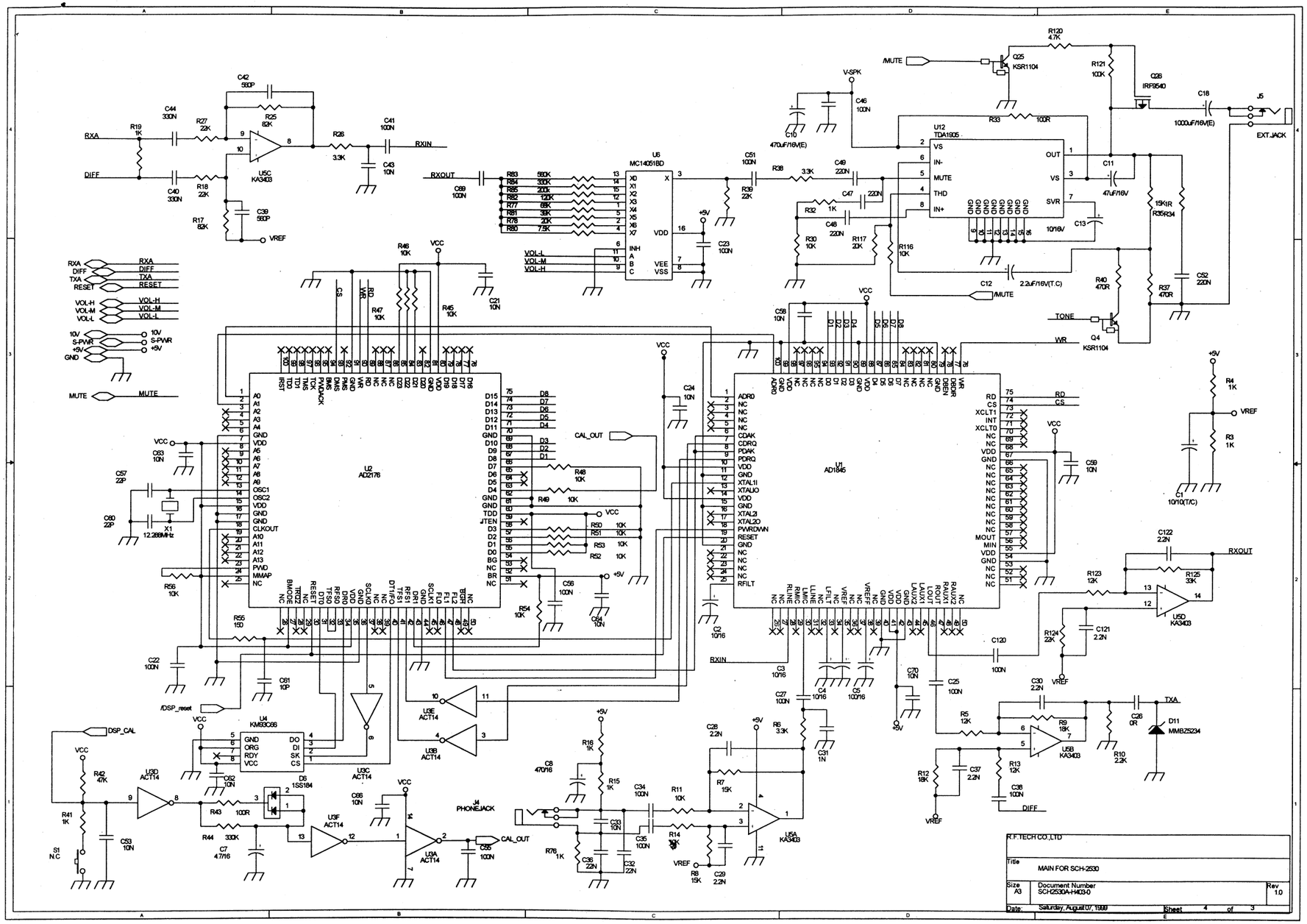
16272T36PAD20IR
U212
TC4W53FU-TE12L
U220
MBM29LV800T-10PN
U221
LRS1306
U223-1
TC7W04FU
U223-3
TC7W04FU
Q1
MMBT2222ALT1
CN210-2
IL-312-A60S-VFH05-A1E3000
EVRC_DOUT
DSP_RESET|
PCM_SYNC
PCM_CLK
LWR|
RD|
CO_DIN
PCS6|
MUX_CTL
27MHz
PCM_DOUT
ROM_CONT
ROM_CS|
RAM_CS|
RESIN|
COMPANY NAME
Address
city
TITLE: 2500db-9.0
MEMORY BOARD
Engineer: dblin
Drawn by: dblin
Changed by: dblin
Date Changed: 1999.06.01
Drawing Number:

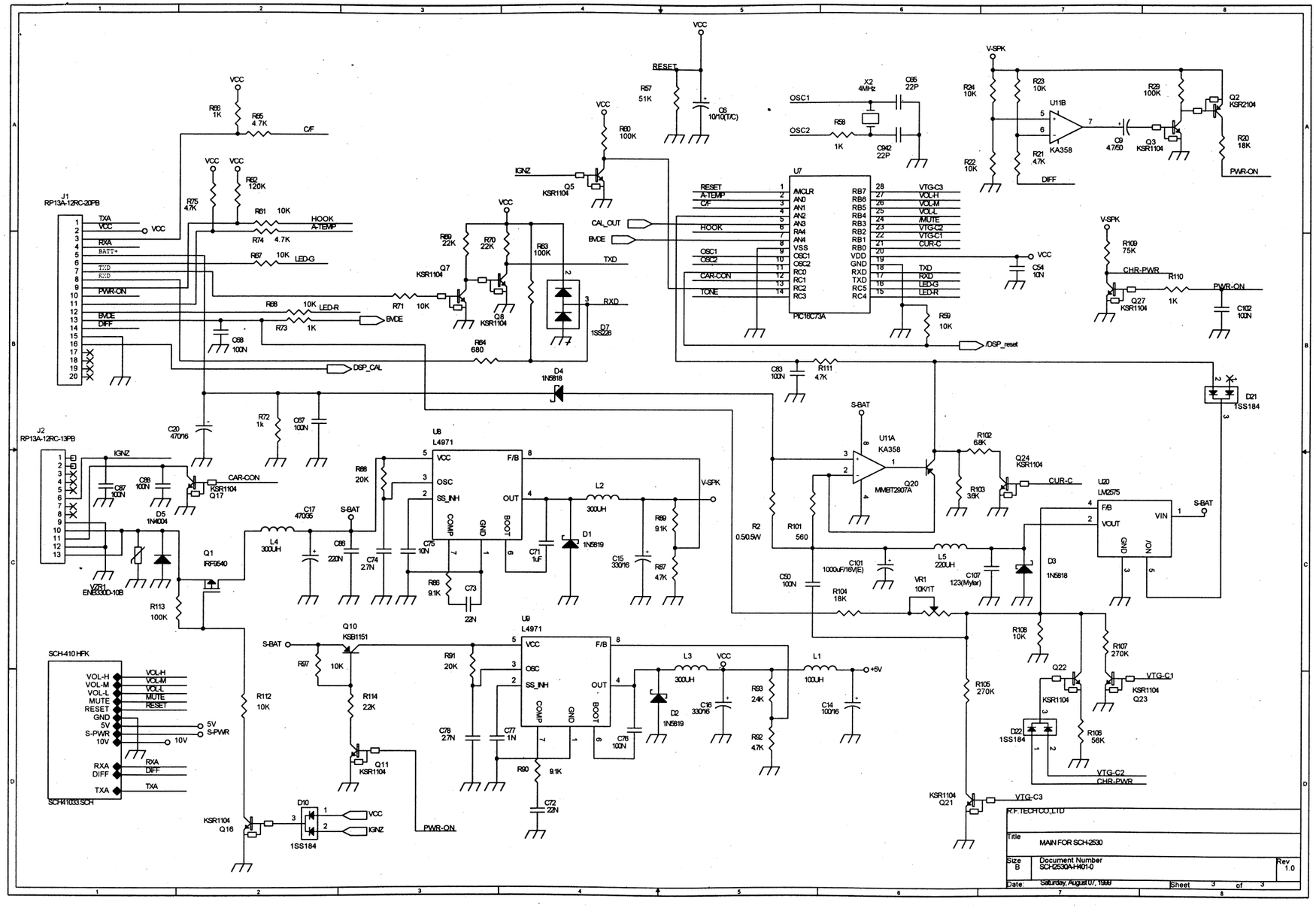
11-2 Desk-Top rapid Charger Circuit Diagram



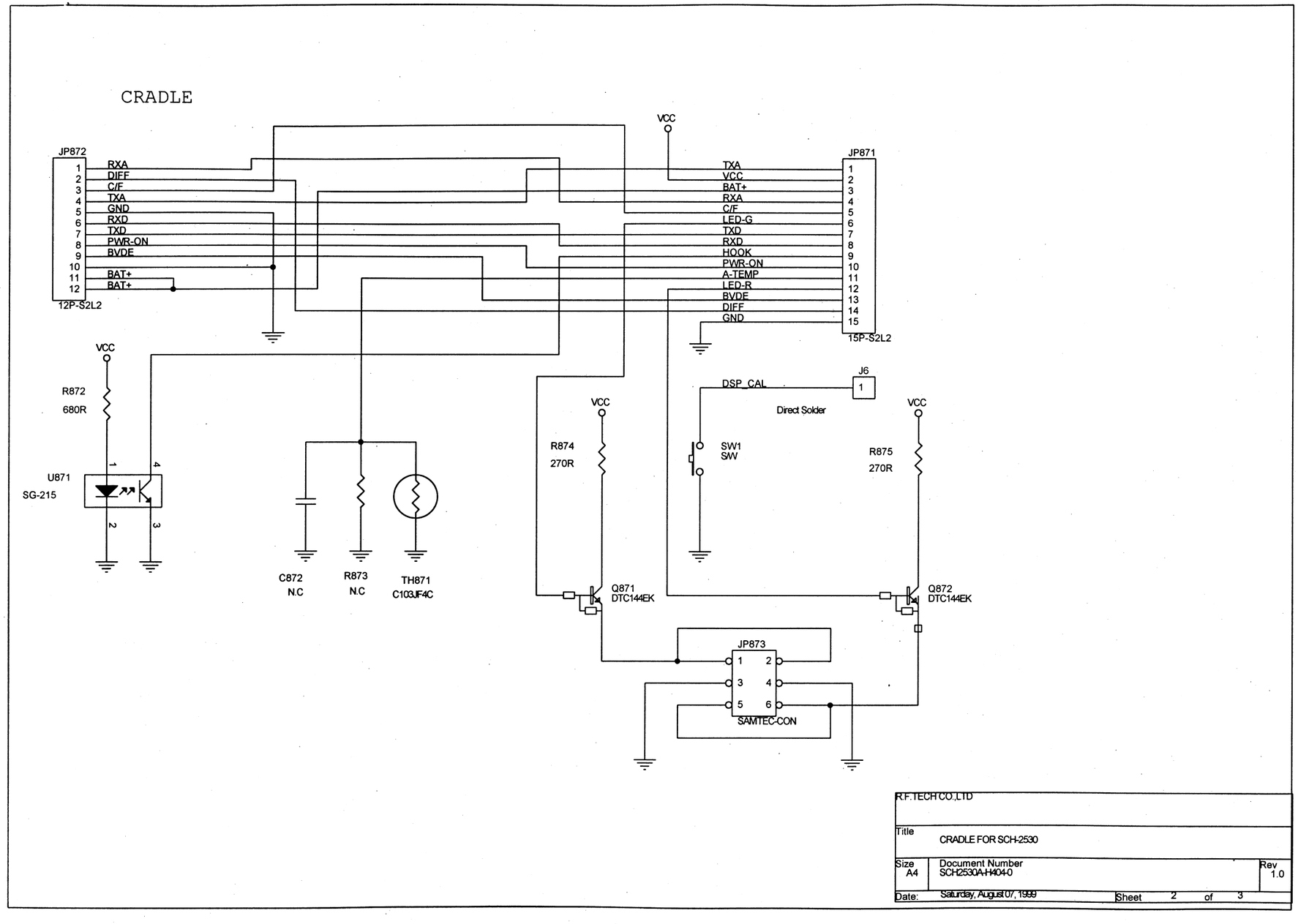
11-3 Hands-Free Kit Circuit Diagram(1/2)



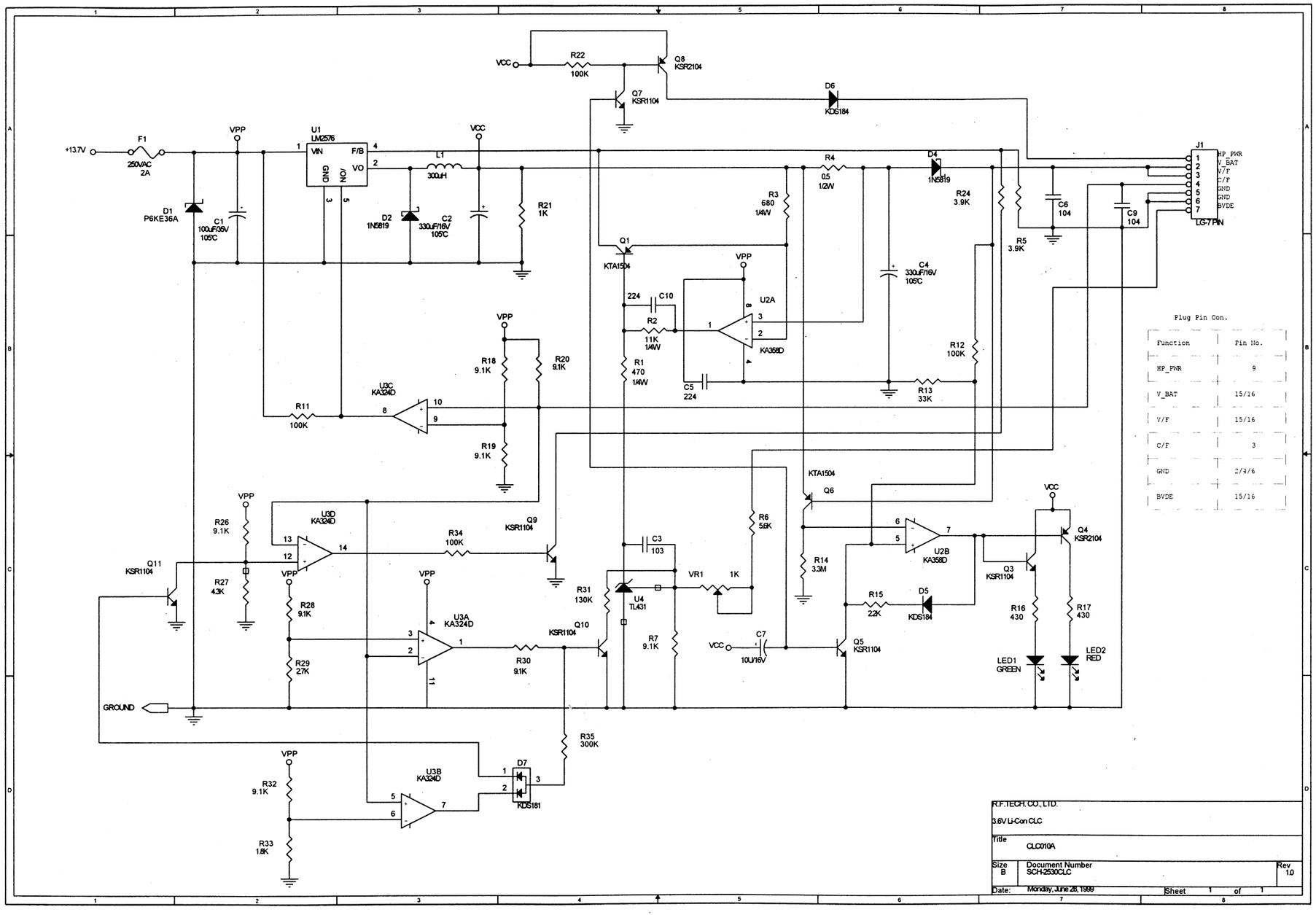
Hands-Free Kit Circuit Diagram(2/2)



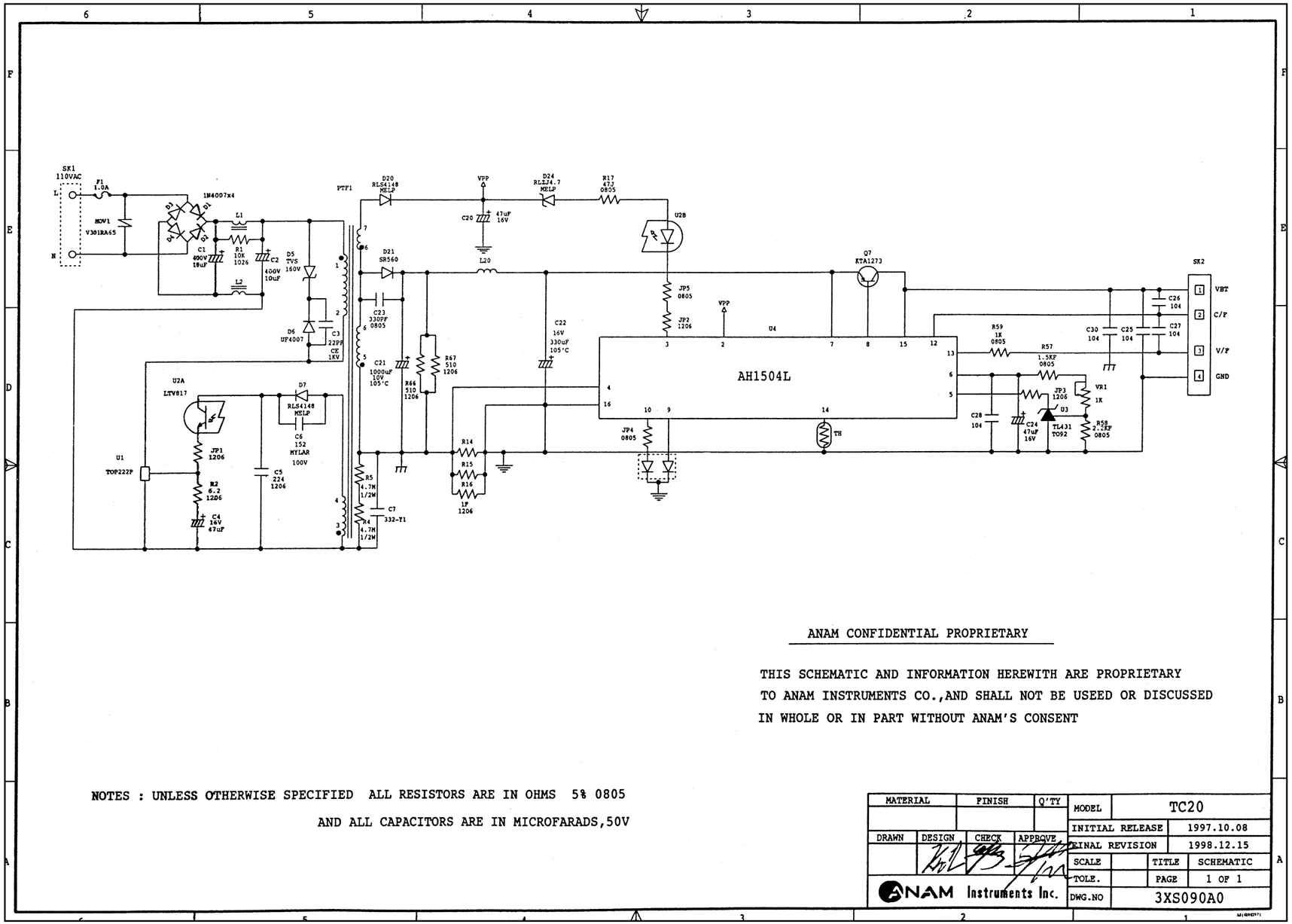
11-4 Cradle Circuit Diagram



11-5 Car Adapter Circuit Diagram



11-6 Rapid Travel Charger Circuit Diagram



ANAM CONFIDENTIAL PROPRIETARY

THIS SCHEMATIC AND INFORMATION HEREWITH ARE PROPRIETARY
TO ANAM INSTRUMENTS CO.,AND SHALL NOT BE USEED OR DISCUSSED
IN WHOLE OR IN PART WITHOUT ANAM'S CONSENT

NOTES : UNLESS OTHERWISE SPECIFIED ALL RESISTORS ARE IN OHMS 5% 0805
AND ALL CAPACITORS ARE IN MICROFARADS,50V

MATERIAL	FINISH	Q'TY

DRAWN	DESIGN	CHECK	APPROVE

ANAM Instruments Inc.

MODEL	TC20		
INITIAL RELEASE	1997.10.08		
FINAL REVISION	1998.12.15		
SCALE		TITLE	SCHEMATIC
TOLE.		PAGE	1 OF 1
DWG.NO	3XS090A0		