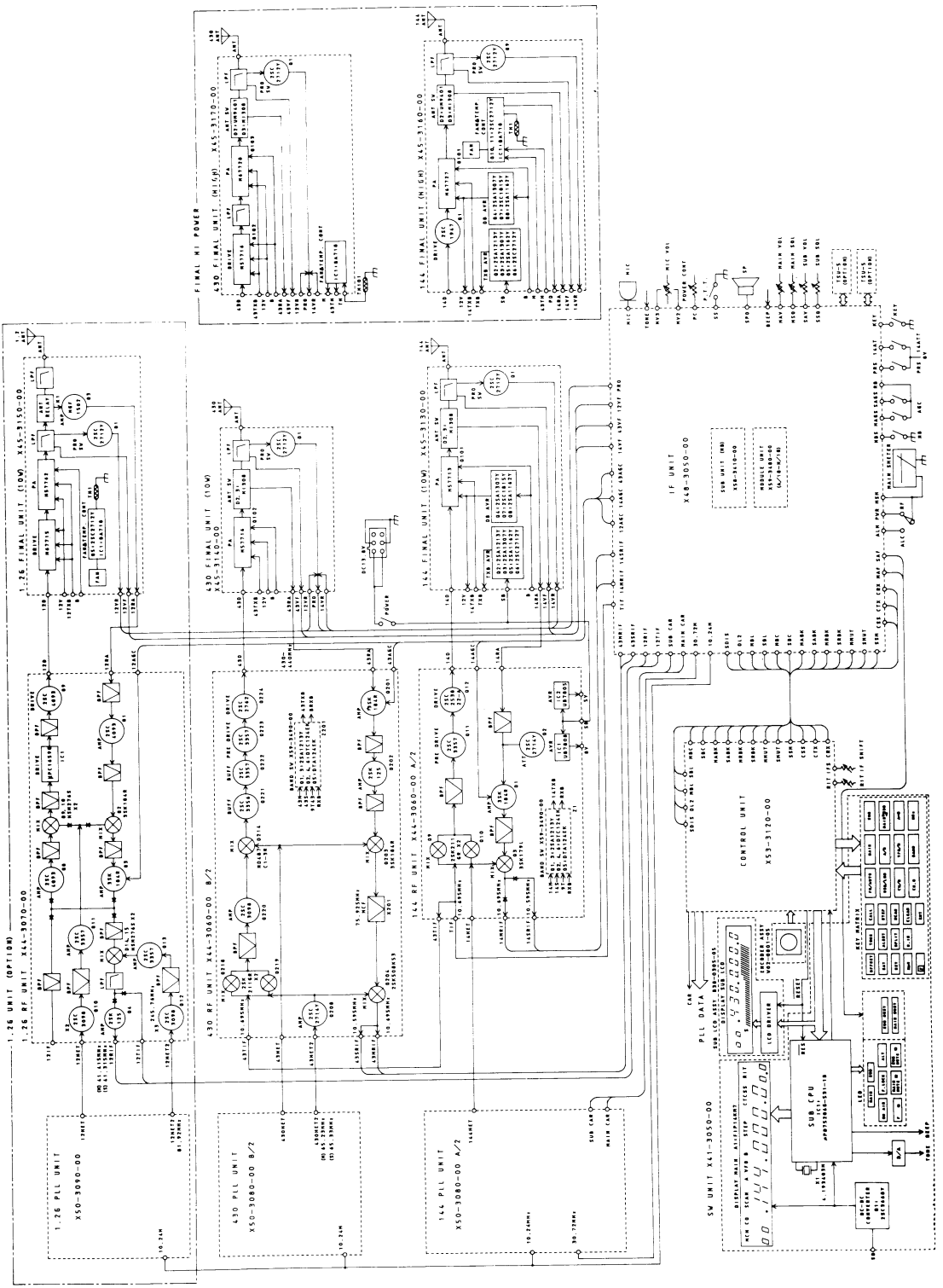
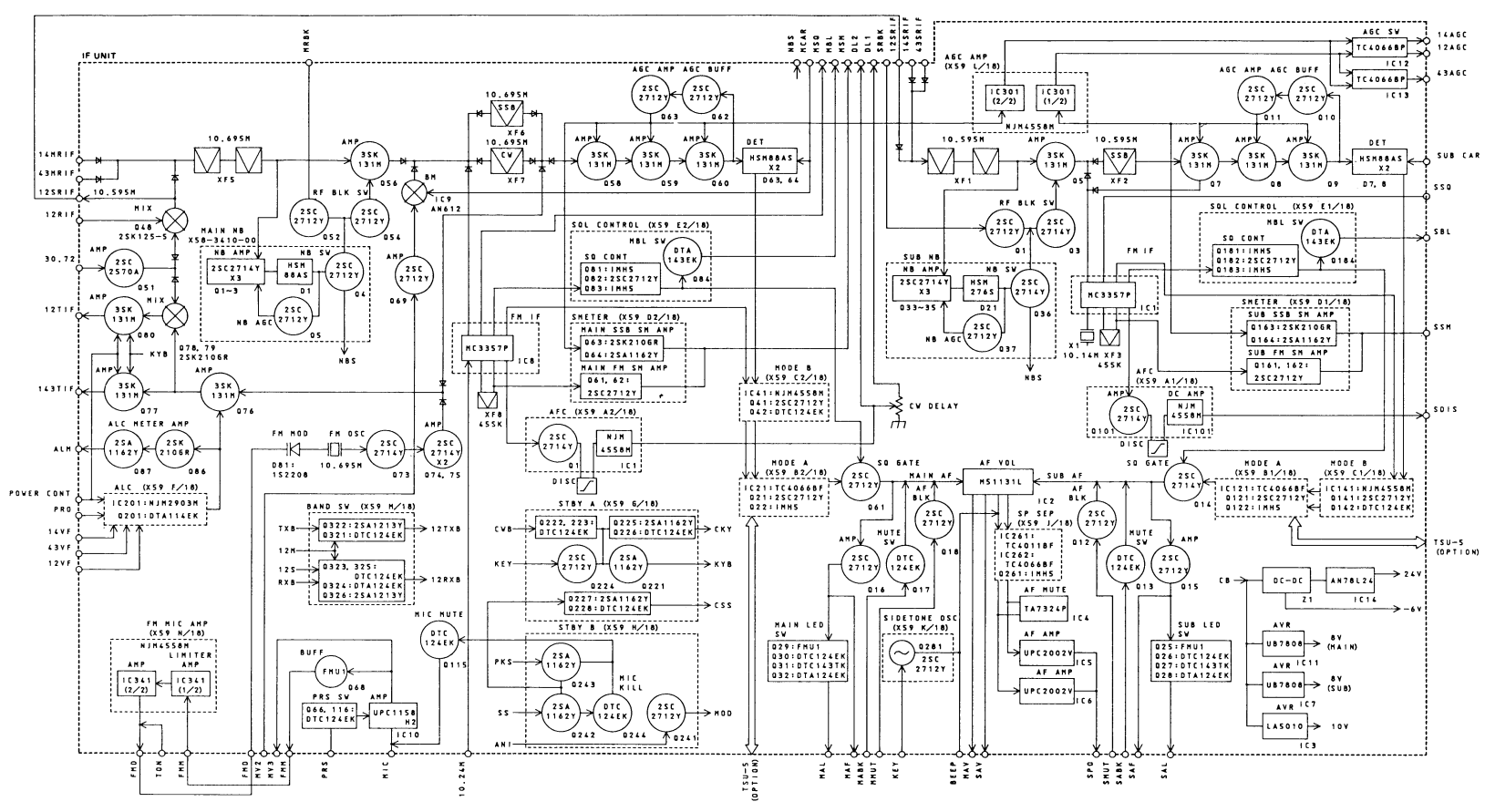
5. BLOCK DIAGRAM AND CIRCUIT DIAGRAM

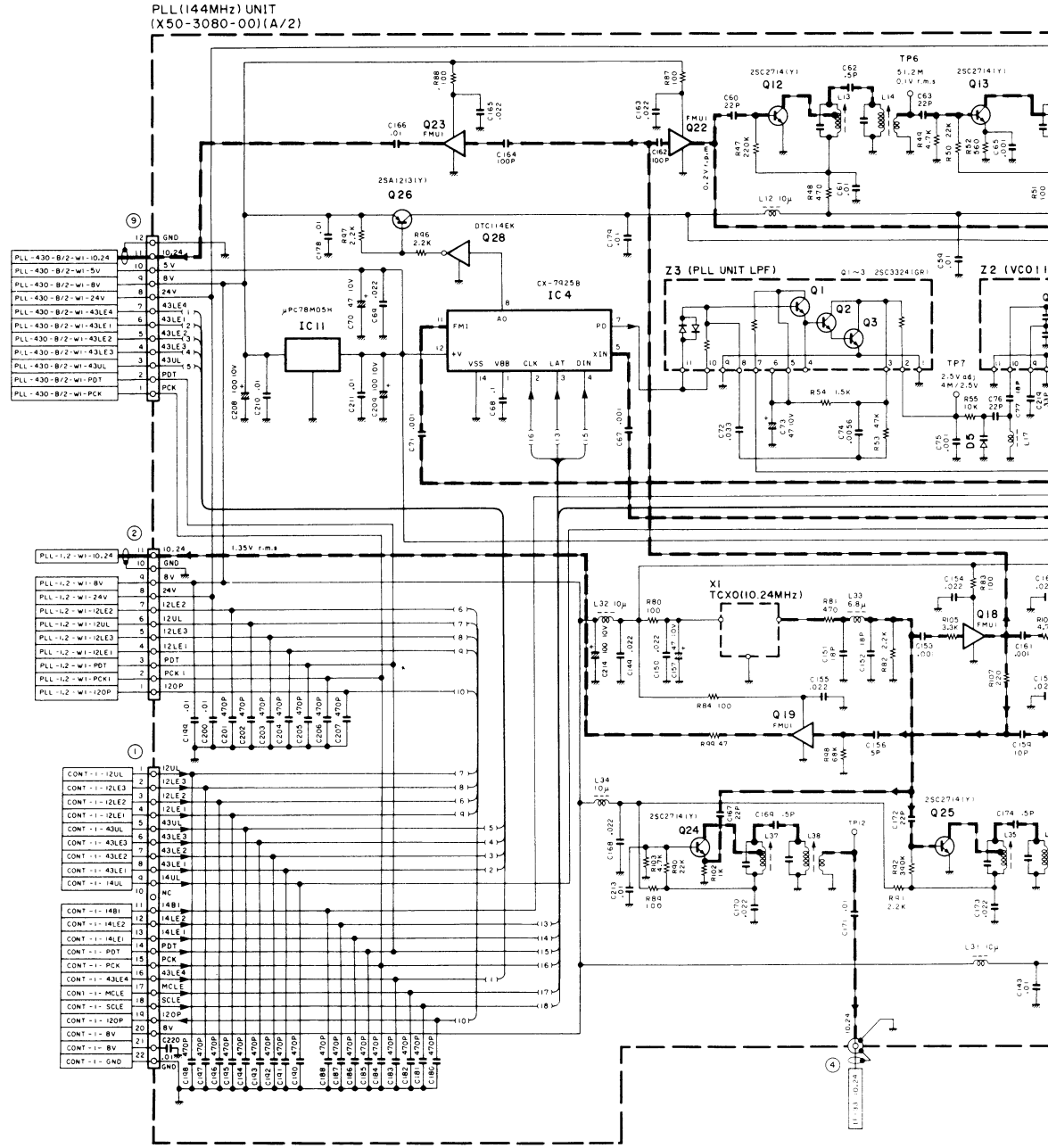
5-1. BLOCK DIAGRAM

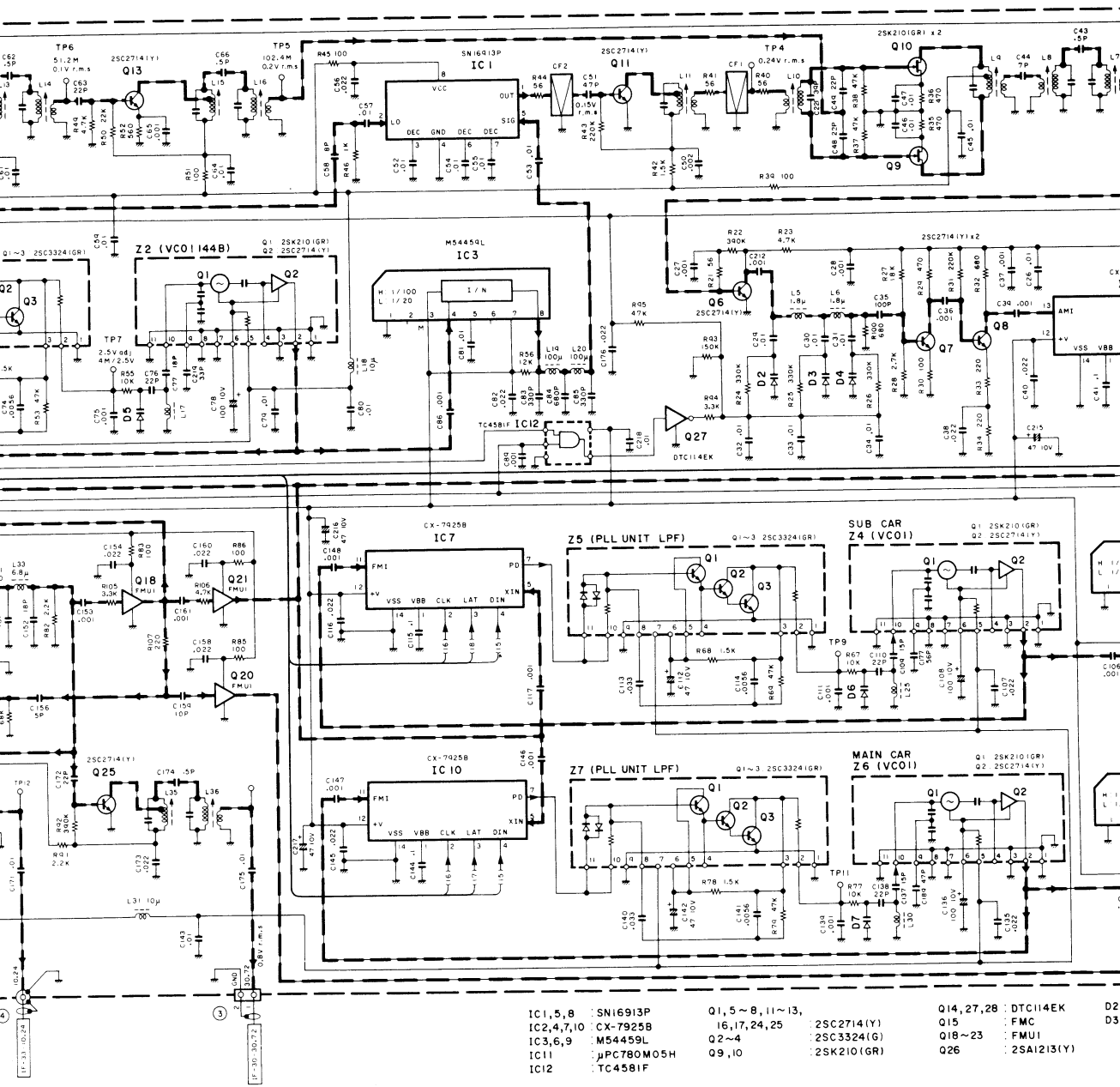



IF UNIT
MRBX
NBS
RCAR
VSQ
MAL
MSL
DLY
SBMK
12SRIF
14SRIF
43SRIF
AGC SW
TC4066BP
IC12
TC4066BP
IC13
14AGC
12AGC
43AGC
AGC AMP (X59 L/18)
IC301 (2/2)
IC301 (1/2)
NJM4558M
AGC AMP AGC BUFF
2SC 2712Y
Q63
Q62
Q11
Q10
14MRIF
43MRIF
12SRIF
10.59SM
12RIF
30.72
12TIF
14STIF
43STIF
ALM
POWER CONT
PRO
14VF
43VF
12VF
10.695M
SSB
XF6
CV
XF7
XF5
XF1
XF2
AMP
3SK 131M
Q56
Q58
Q59
Q60
Q7
Q8
Q9
Q5
DET
HSM88AS X2
D63, 64
D7, 8
SUB CAR
SSQ
SBL
SSM
SDIS
BM
IC9 AN612
MIX
Q48 2SK125-S
RF BLK SW
2SC 2712Y
Q52
Q54
2SC 2714Y
Q1
Q3
MAIN NB XS8-3410-00
NB AMP
2SC2714Y X3
Q1-3
NB SW
HSM 88AS
D1
NB AGC
Q5
2SC 2570A
Q51
2SC 2712Y
Q69
Q80
KYB
Q78, 79 2SK2106R
Q77
Q76
SUB NB
Q33-35
HSM 278S
D21
Q36
Q37
NBS
SQL CONTROL (X59 E2/18)
MBL SW
SQ CONT
Q81: IMHS
Q82: 2SC2712Y
Q83: IMHS
DTA 143EK
Q84
SQL CONTROL (X59 E1/18)
Q181: IMHS
Q182: 2SC2712Y
Q183: IMHS
Q184
FM IF
MC3357P
IC8
IC1
X1 10.14M XF3 455K
SMETER (X59 D2/18)
MAIN SSB SM AMP
Q63: 2SK2106R
Q64: 2SA1162Y
MAIN FM SM AMP
Q61, 62: 2SC2712Y
SMETER (X59 D1/18)
SUB SSB SM AMP
Q163: 2SK210GR
Q164: 2SA1162Y
SUB FM SM AMP
Q161, 162: 2SC2712Y
XF8 455K
AFC (X59 A2/18)
NJM 4558M
IC1
DISC
AFC (X59 A1/18)
DC AMP
NJM 4558M
IC101
Q101
MODE B (X59 C2/18)
IC41: NJM4558M
Q41: 2SC2712Y
Q42: DTC124EK
CW DELAY
MODE A (X59 B2/18)
IC21: TC4066BP
Q21: 2SC2712Y
Q22: IMHS
SQ GATE
2SC 2712Y
Q61
MAIN AF
AF BLK
2SC 2712Y
Q18
AF VOL
MS1131L
IC2
SUB AF
2SC 2712Y
Q12
2SC 2714Y
Q14
MODE A (X59 B1/18)
IC121: TC4066BP
Q121: 2SC2712Y
Q122: IMHS
MODE B (X59 C1/18)
IC141: NJM4558M
Q141: 2SC2712Y
Q142: DTC124EK
TSU-5 (OPTION)
ALC METER AMP
2SA 1162Y
Q87
2SK 2106R
Q86
ALC (X59 F/18)
IC201: NJM2903M
Q201: DTA114EK
FM MOD
D81: 1S2208
FM OSC
10.695M
2SC 2714Y
Q73
AMP
2SC 2714Y X2
Q74, 75
BAND SW (X59 M/18)
TXB
12M
12S
RXB
Q322: 2SA1213Y
Q321: DTC124EK
Q323, 325: DTC124EK
Q324: DTA124EK
Q326: 2SA1213Y
12TXB
12RXB
STBY A (X59 G/18)
CWB
KEY
Q222, 223: DTC124EK
Q225: 2SA1162Y
Q226: DTC124EK
2SC 2712Y
Q224
2SA 1162Y
Q221
Q227: 2SA1162Y
Q228: DTC124EK
CKY
KYB
CSS
STBY B (X59 H/18)
PKS
SS
ANI
2SA 1162Y
Q243
Q242
DTC 124EK
Q244
2SC 2712Y
Q241
MIC KILL
MOD
MIC MUTE
DTC 124EK
Q115
MUTE SW
DTC 124EK
Q17
Q13
Q16
Q15
MAIN LED SW
Q29: FMU1
Q30: DTC124EK
Q31: DTC143TK
Q32: DTA124EK
SIDETONE OSC (X59 K/18)
Q281
2SC 2712Y
SP SEL (X59 J/18)
IC261: TC4011BF
IC262: TC4066BP
Q261: IMHS
AF MUTE
TA7324P
IC4
AF AMP
UPC2002V
IC5
IC6
SUB LED SW
Q25: FMU1
Q26: DTC124EK
Q27: DTC143TK
Q28: DTA124EK
CB
DC-DC
Z1
AN78L24
IC14
24V
-6V
AVR
UB7808
IC11
IC7
8V (MAIN)
8V (SUB)
10V
LAS010
IC3
FM MIC AMP (X59 N/18)
NJM4558M
LIMITER AMP
IC341 (2/2)
IC341 (1/2)
BUFF
FMU1
Q68
PRS SW
Q66, 116: DTC124EK
AMP
UPC1158 H2
IC10
FMO
TOR
FMK
MV2
MV3
PRS
MIC
10.24M
MAL
MAK
MABK
MMUT
KEY
BEEP
MAK
SAK
SPO
SMUT
SABK
SAK
SAL

5-2. CIRCUIT DIAGRAM

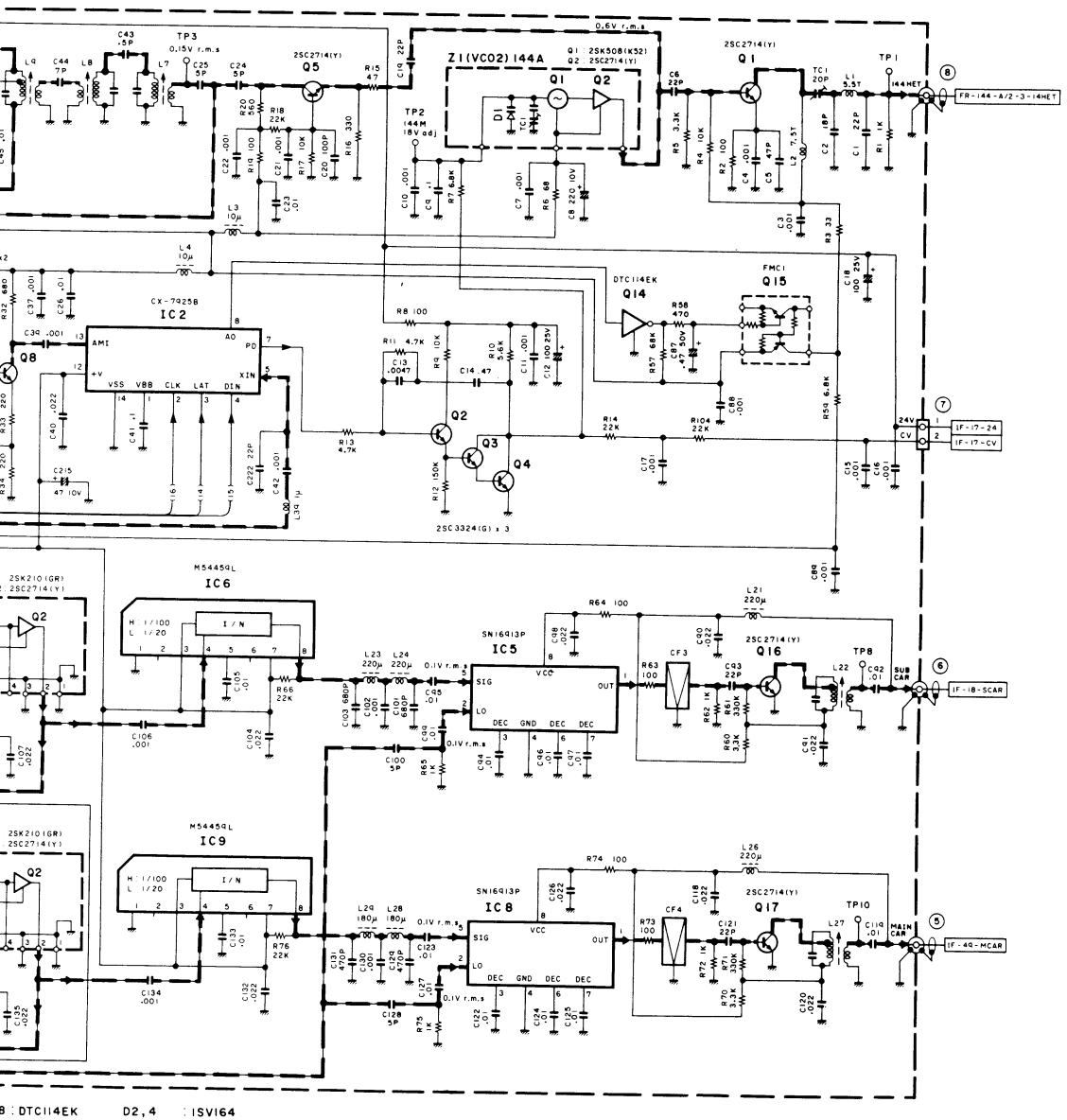
■ PLL (144 MHz) UNIT (X50-3080-00) (A/2)





IC1,5,8	: SN16913P	Q1,5~8,11~13, 16,17,24,25	: 2SC2714(Y)	Q14,27,28	: DTC114EK
IC2,4,7,10	: CX-7925B	Q2~4	: 2SC3324(G)	Q15	: FMC
IC3,6,9	: M54459L	Q9,10	: 2SK210(GR)	Q18~23	: FMU1
IC11	: μPC780M05H			Q26	: 2SA1213(Y)
IC12	: TC4581F				

D2
D3



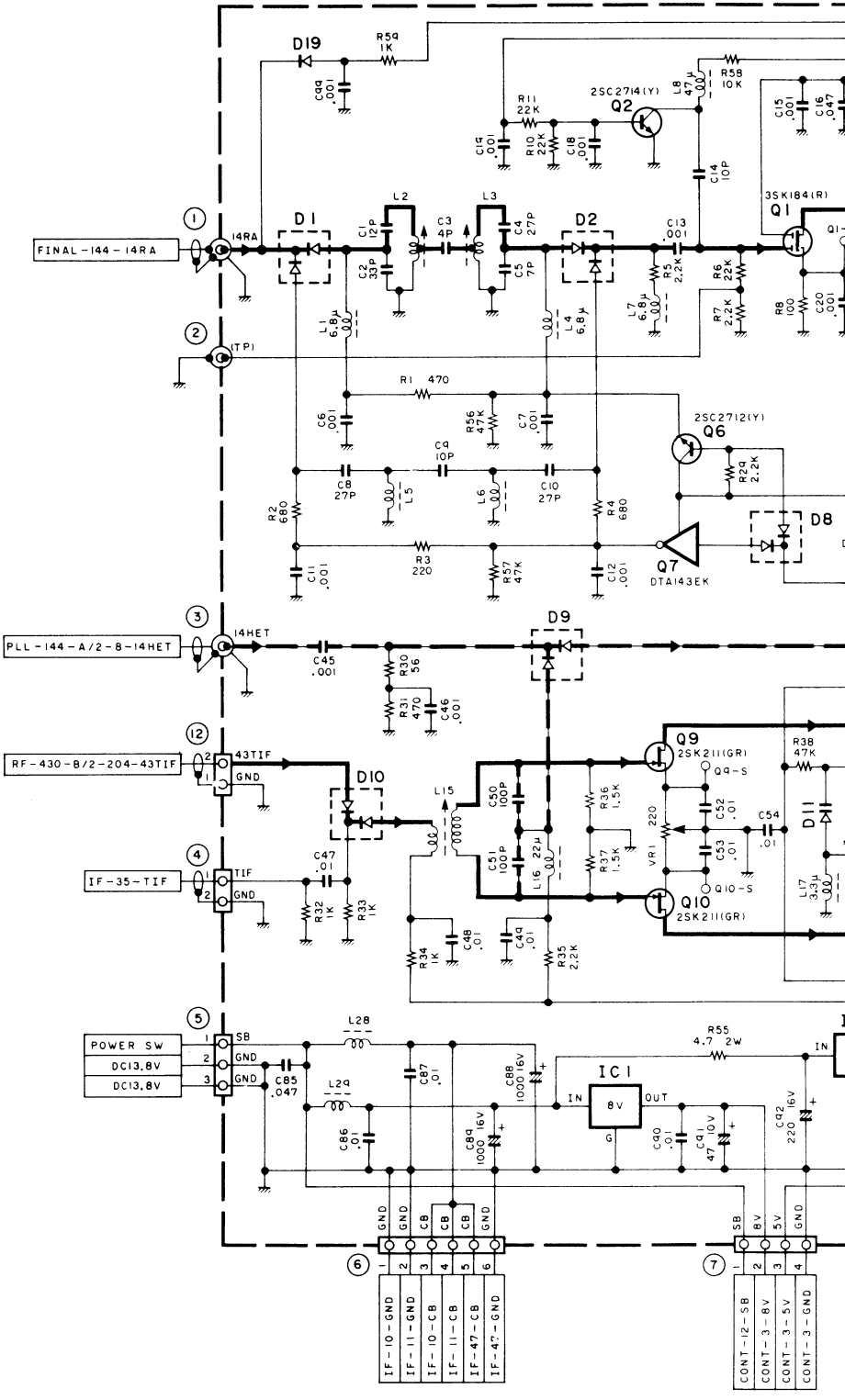
B : DTC114EK
: FMC
: FMUI
: 2SA1213(Y)

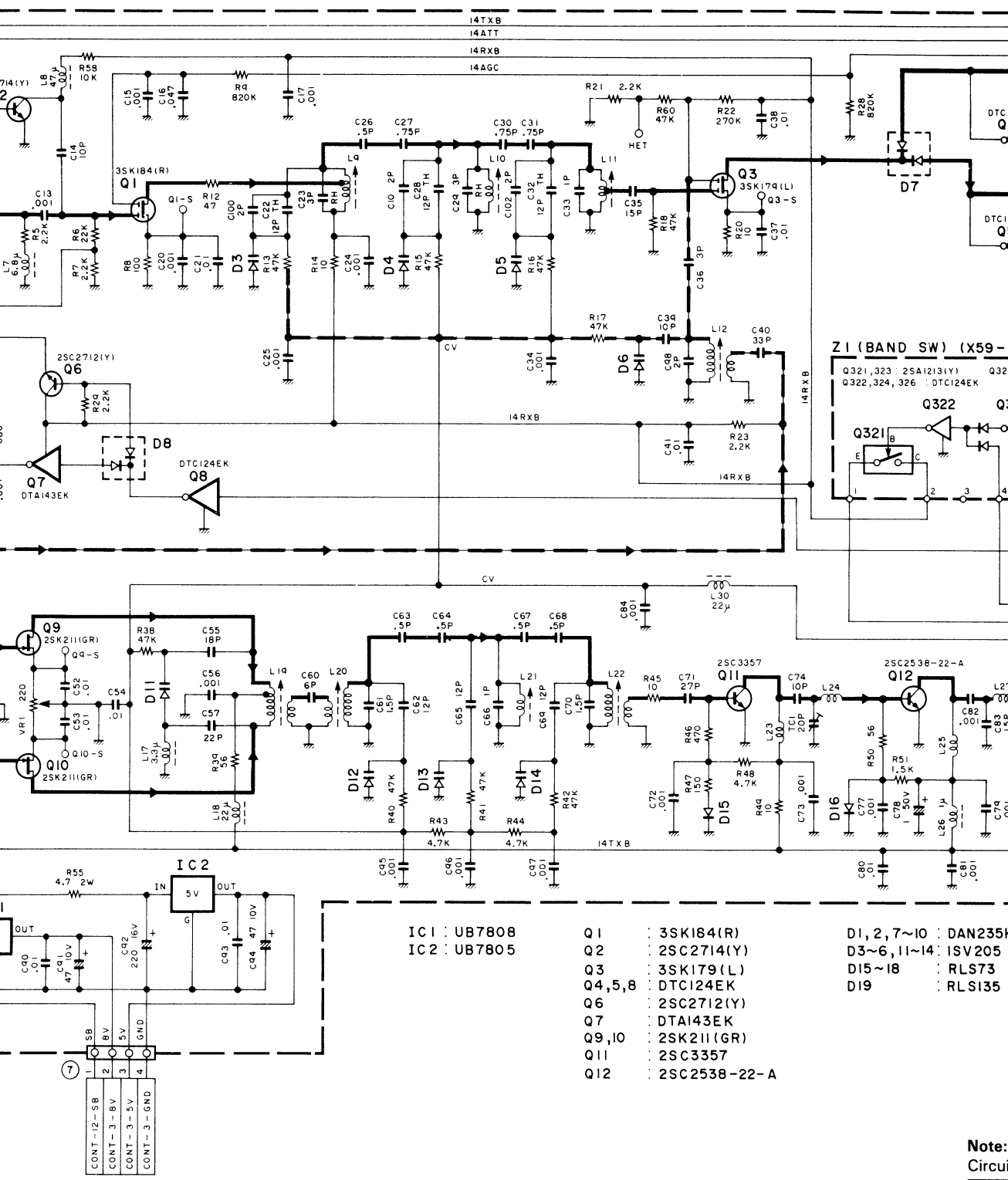
D2,4 : 1SV164
D3,5~7 : 1SV166

Note:

Circuit Diagram is subject to change without notice due to advancements in technology.

■ RF (144 MHz) UNIT (X44-3060-00) (A/2)



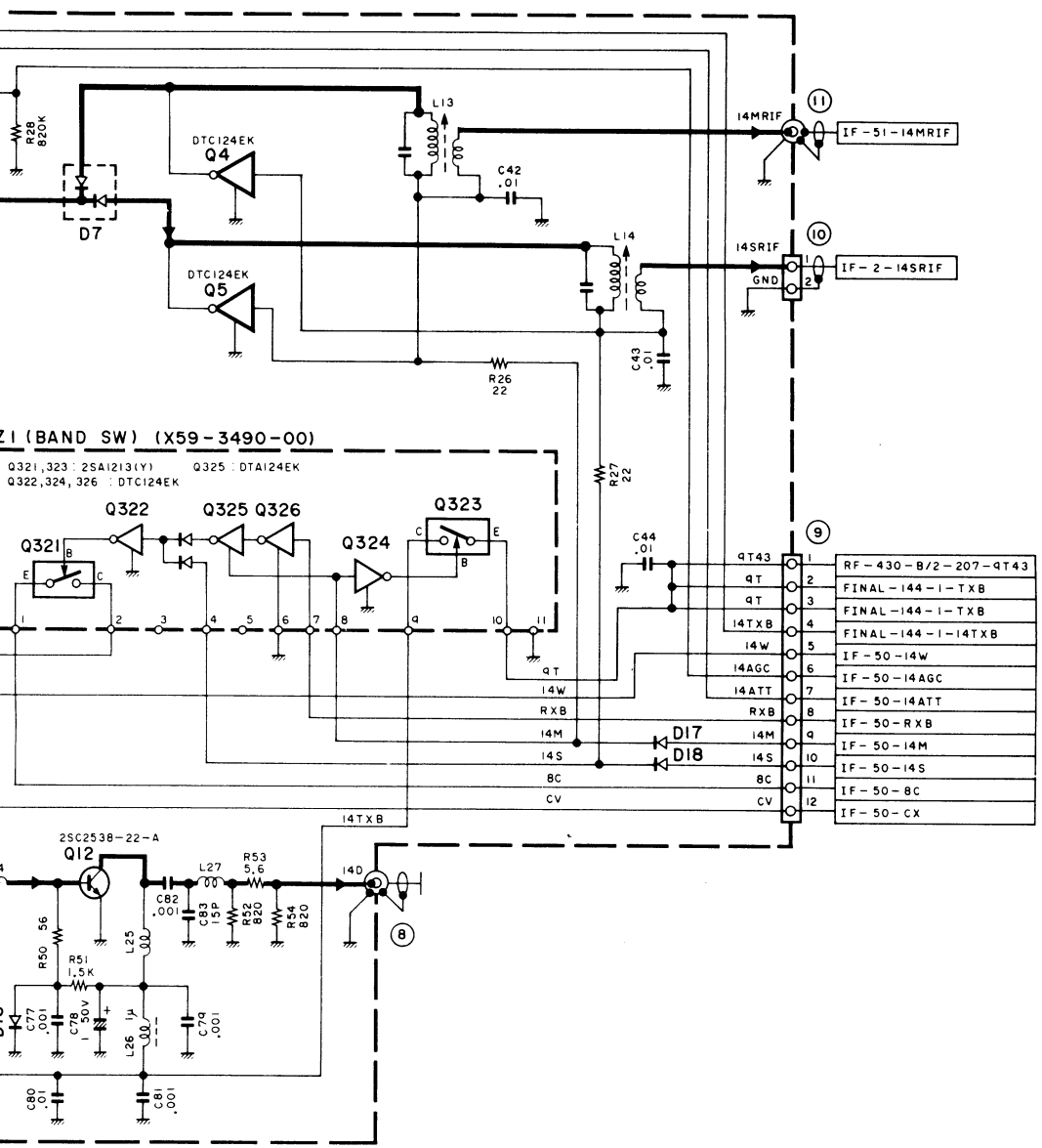


IC1 : UB7808
IC2 : UB7805

Q1	: 3SK184(R)
Q2	: 2SC2714(Y)
Q3	: 3SK179(L)
Q4,5,8	: DTC124EK
Q6	: 2SC2712(Y)
Q7	: DTA143EK
Q9,10	: 2SK211(GR)
Q11	: 2SC3357
Q12	: 2SC2538-22-A

D1,2,7~10	: DAN235K
D3~6,11~14	: ISV205
D15~18	: RLS73
D19	: RLS135

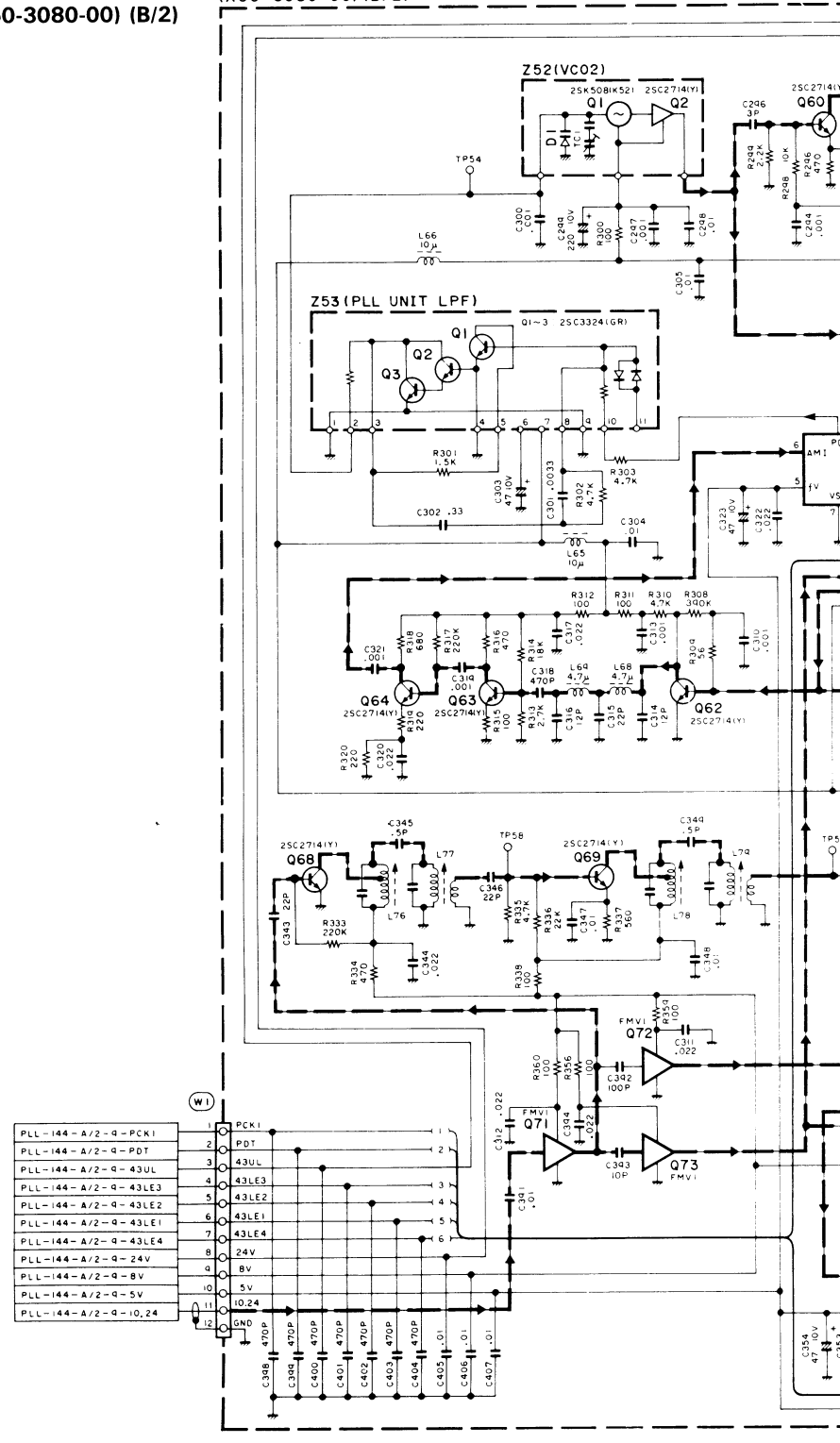
Note:
Circui

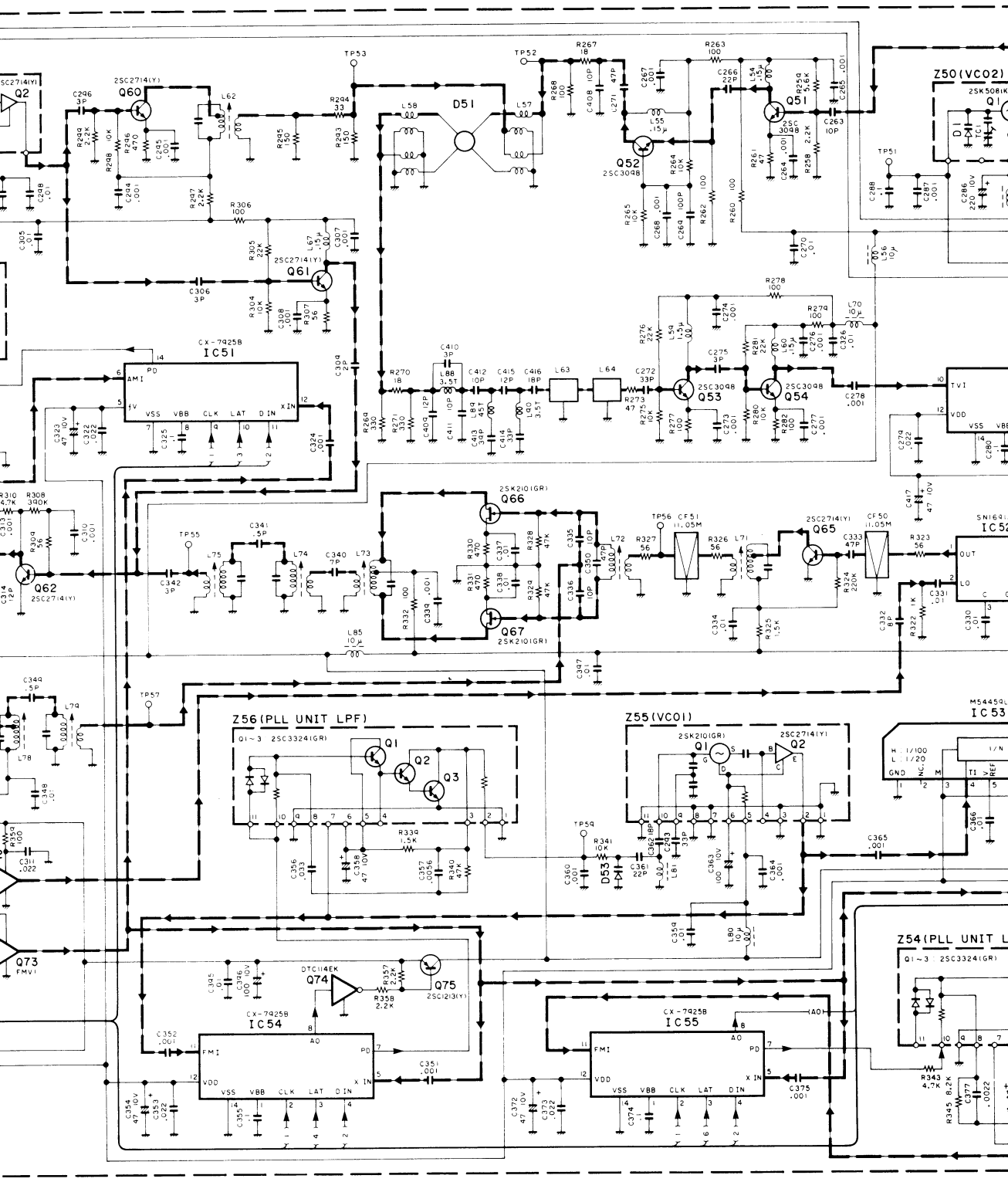


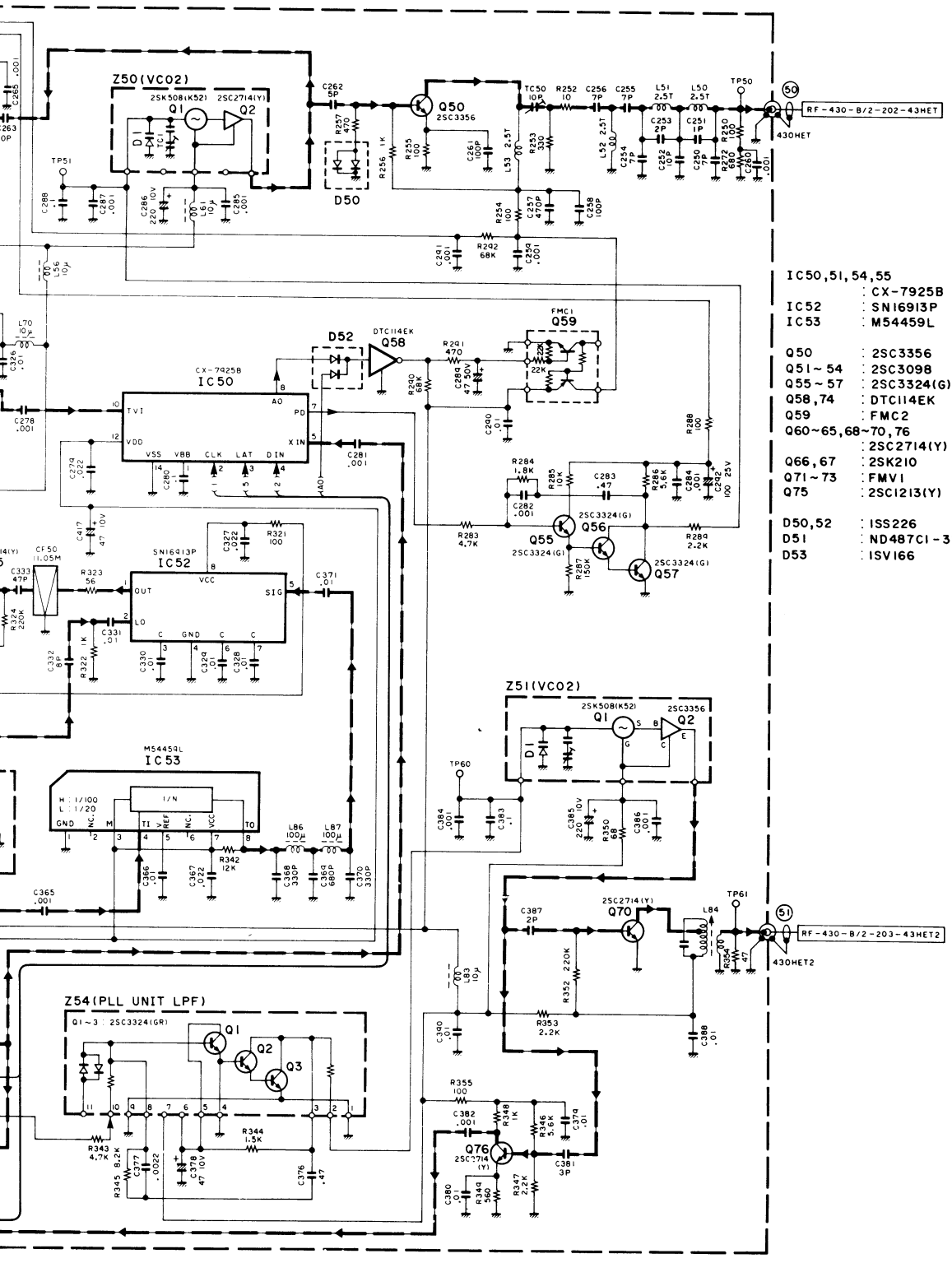
D1, 2, 7~10 : DAN235K
D3~6, 11~14 : 1SV205
D15~18 : RLS73
D19 : RLS135

Note:
Circuit Diagram is subject to change without notice due to advancements in technology.

■ PLL (430 MHz) UNIT (X50-3080-00) (B/2)




Z50(VCO2)
Z56(PLL UNIT LPF)
Z55(VCO1)
Z54(PLL UNIT
IC51
IC52
IC53
IC54
IC55
Q1~3 2SC3324(GR)
Q60
Q61
Q62
Q65
Q66
Q67
Q51
Q52
Q53
Q54
Q73
Q74
Q75
D51
D53
TP51
TP52
TP53
TP55
TP56
TP57
TP59
CF51 11.05M
CF50 11.05M
CX-7925B
2SC2714(Y)
2SK210(GR)
2SC3048
DTC114EK
2SC1213(Y)
SN1694
M54459L
FMI
AO
PD
VDD
VSS
VBB
CLK
LAT
DIN
XIN
TVI
OUT
LO
GND
TI
REF

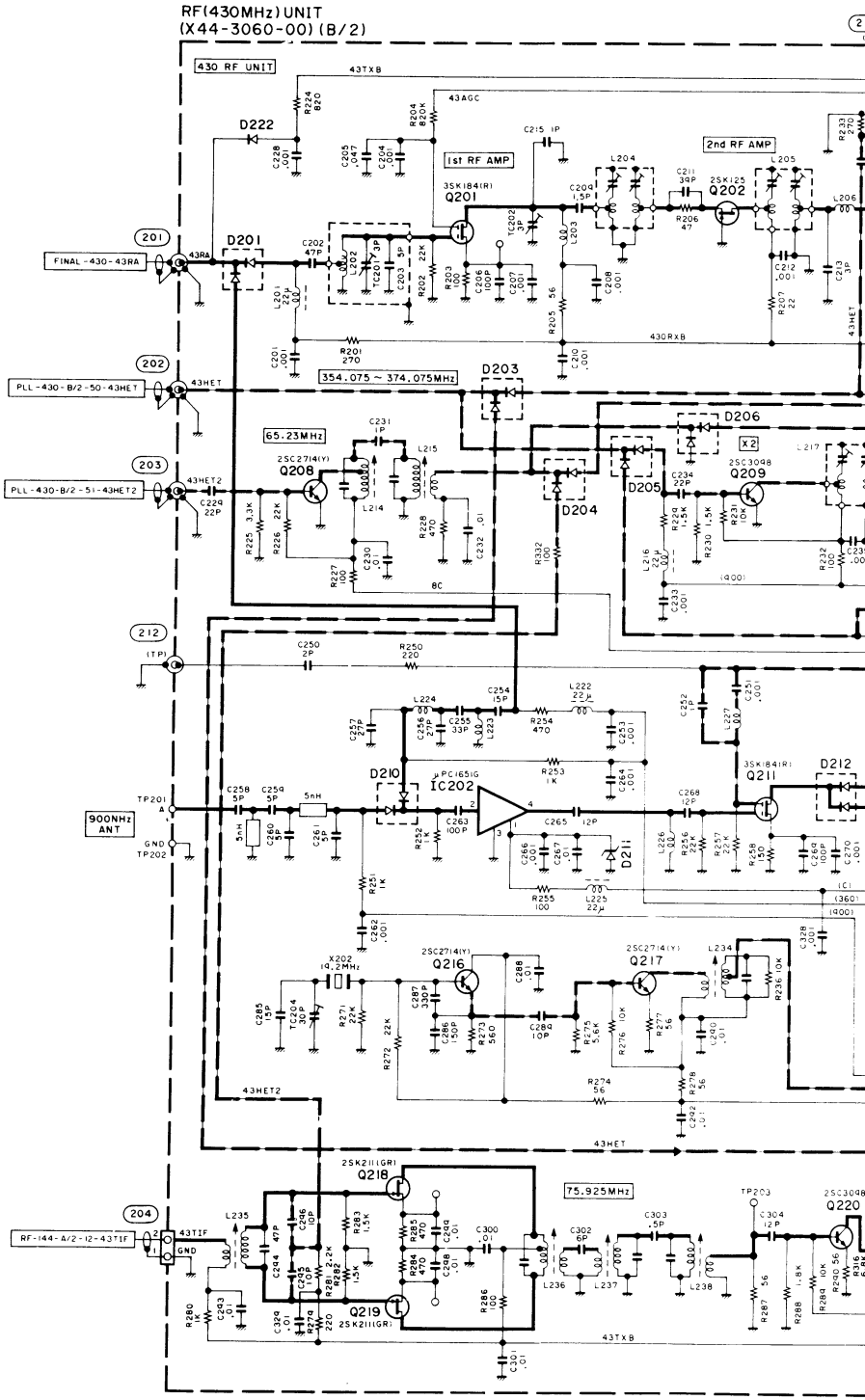


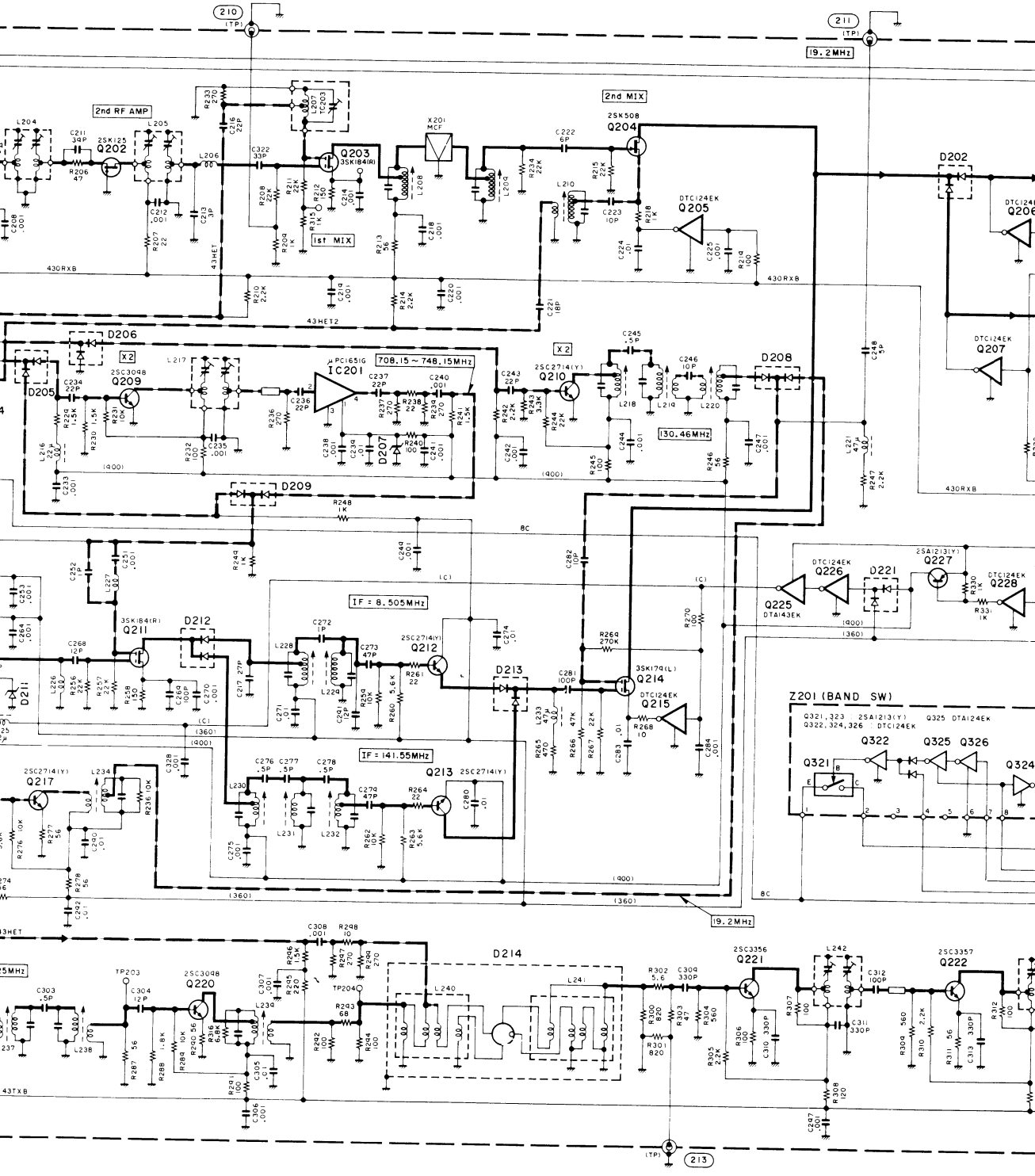
IC50,51,54,55	: CX-7925B
IC52	: SN16913P
IC53	: M54459L
Q50	: 2SC3356
Q51~54	: 2SC3098
Q55~57	: 2SC3324(G)
Q58,74	: DTC114EK
Q59	: FMC2
Q60~65,68~70,76	: 2SC2714(Y)
Q66,67	: 2SK210
Q71~73	: FMV1
Q75	: 2SC1213(Y)
D50,52	: ISS226
D51	: ND487C1-3R
D53	: ISV166

Note:

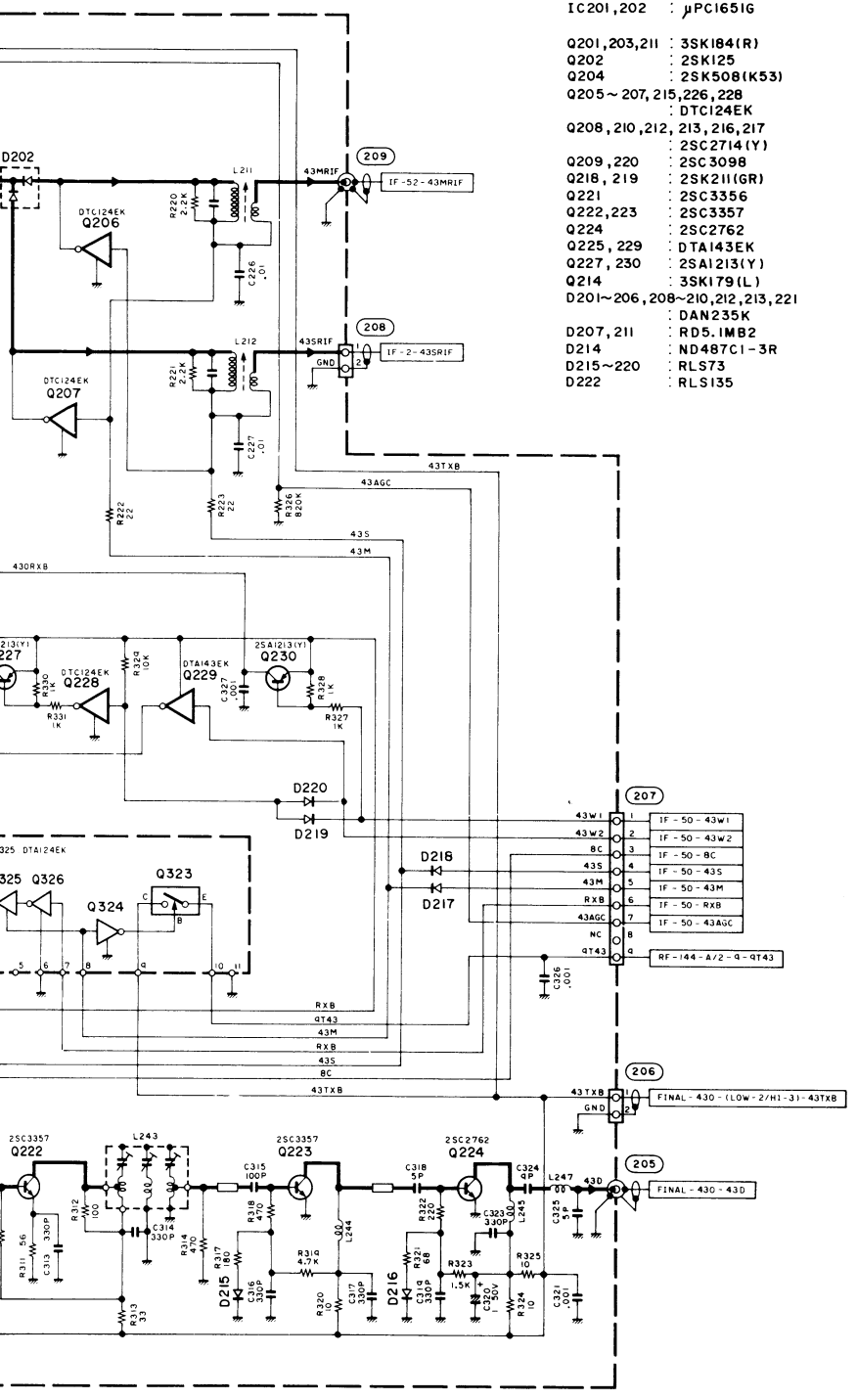
Circuit Diagram is subject to change without notice due to advancements in technology.

■ RF (430 MHz) UNIT (X44-3060-00) (B/2)



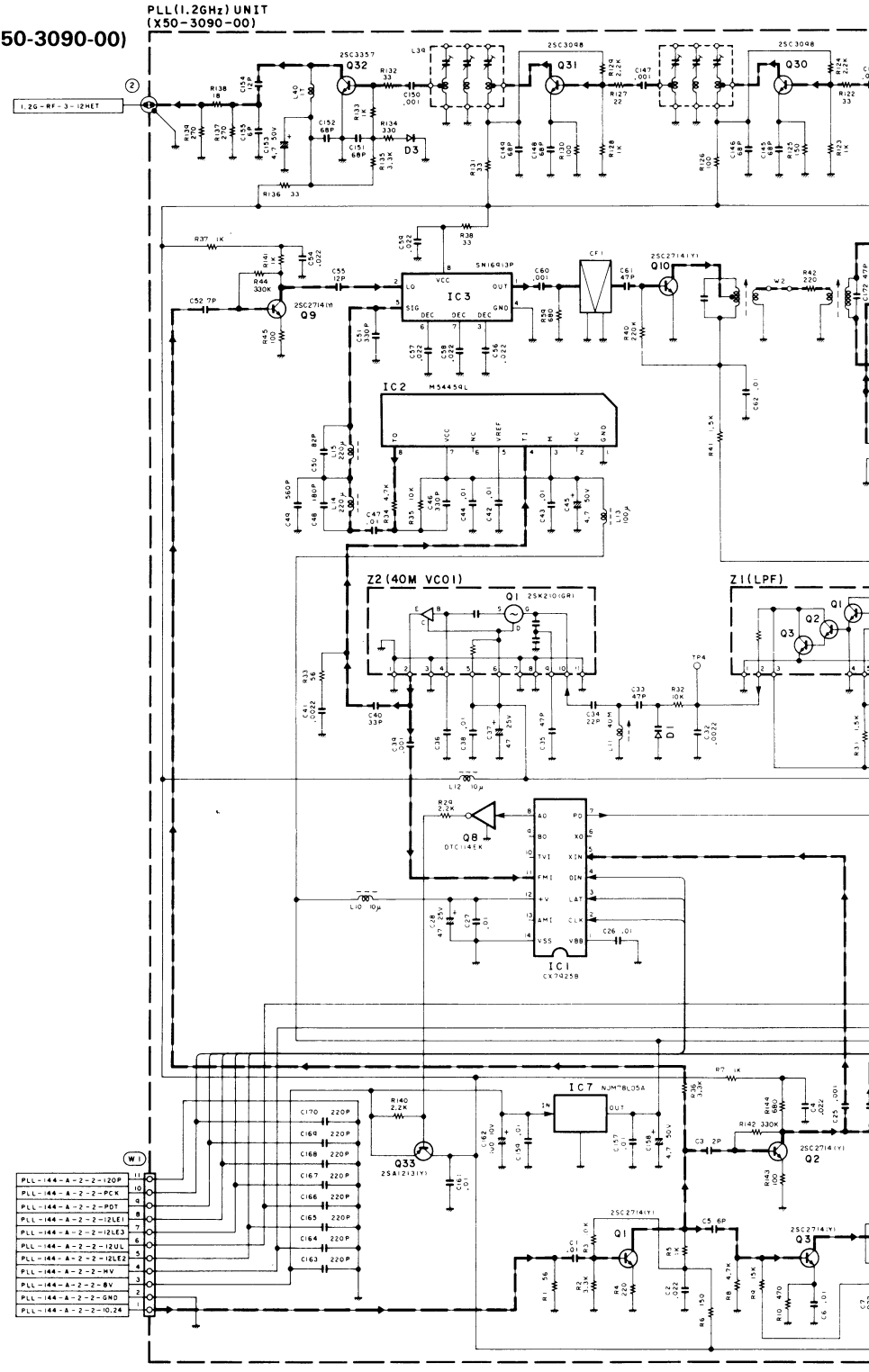


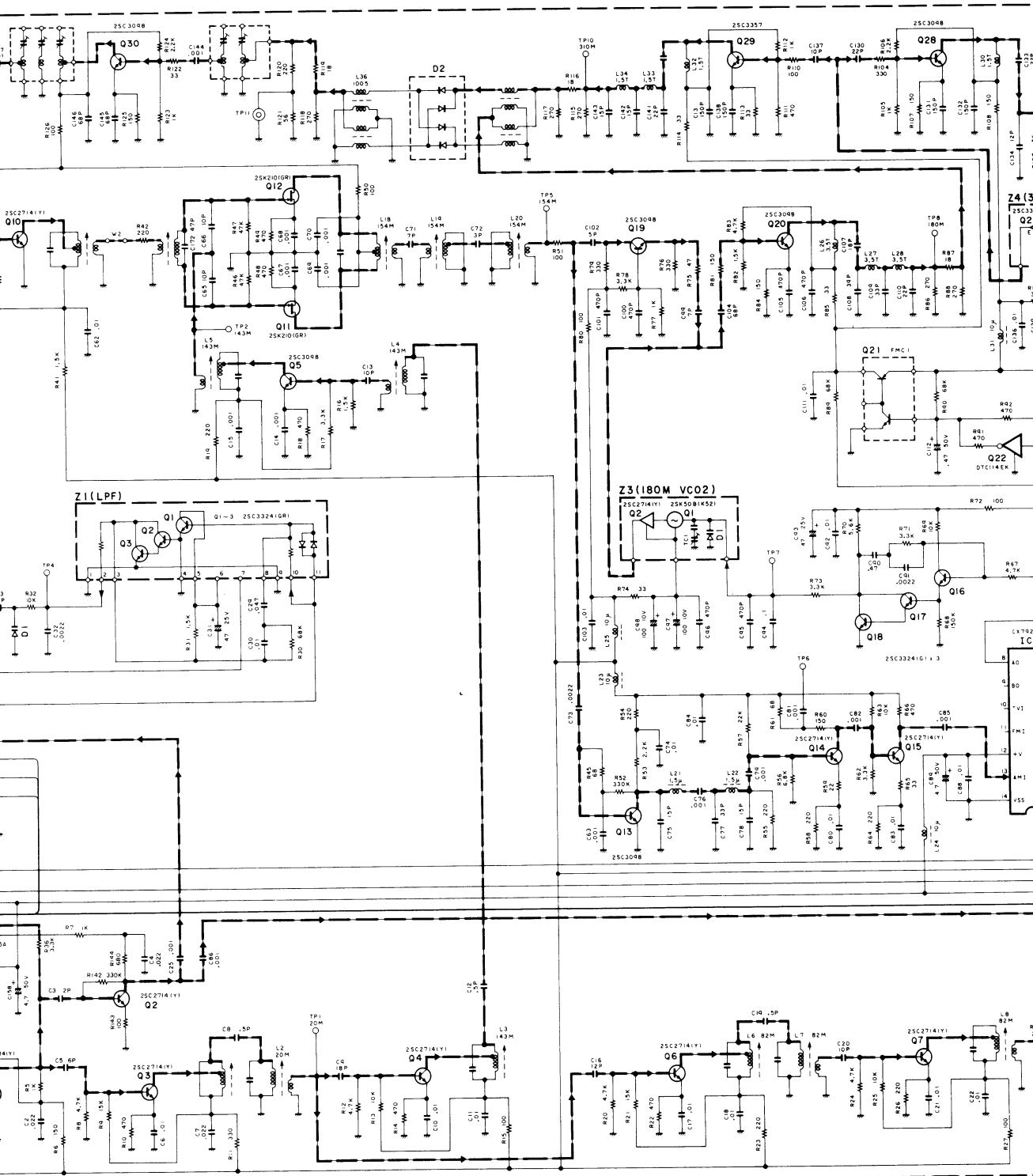
Note:
Circuit Diagram is s



t Diagram is subject to change without notice due to advancements in technology.

■ PLL (1.2 GHz) UNIT (X50-3090-00)





Note:

Circuit Diagram is subject to ch

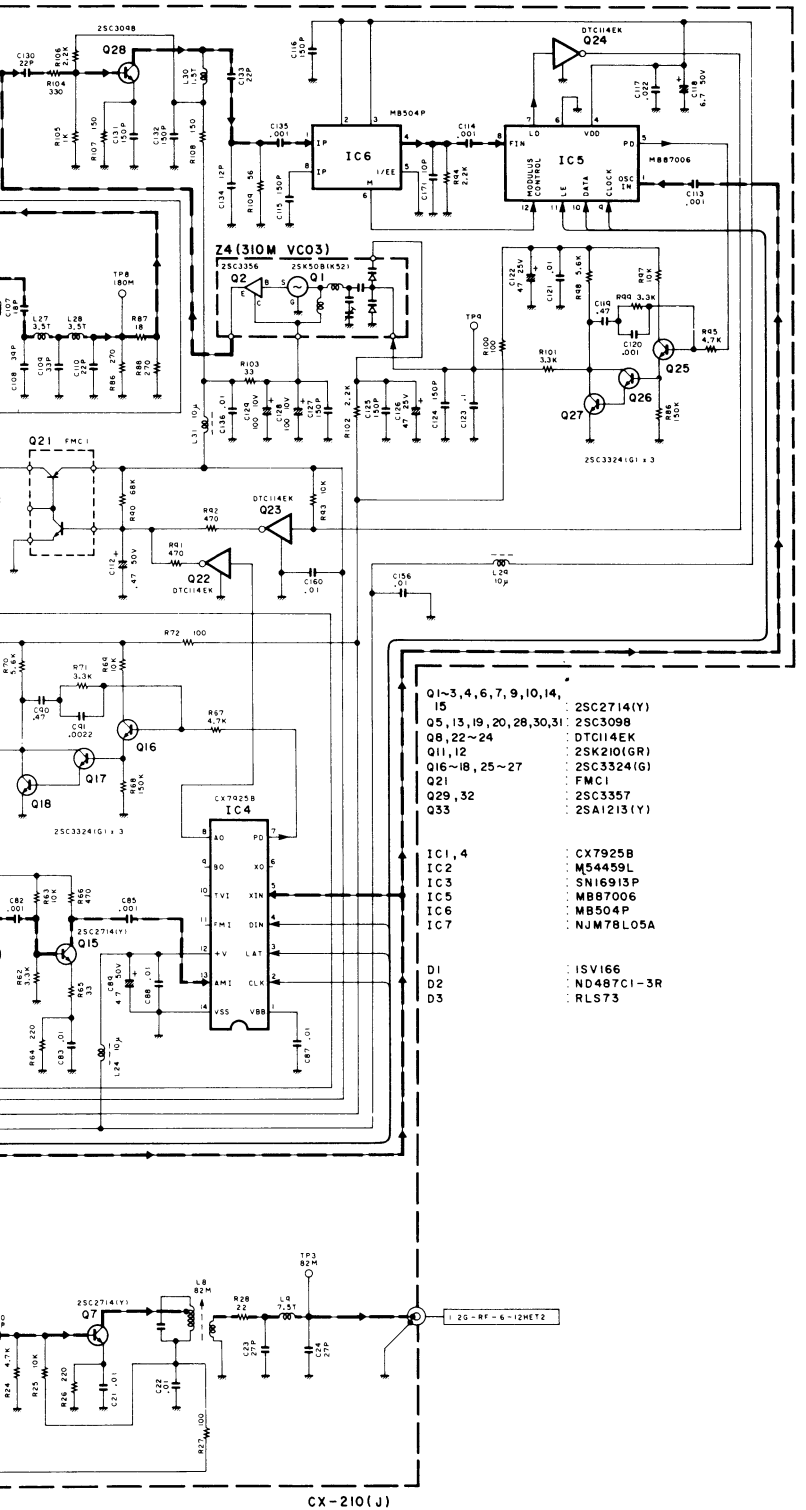
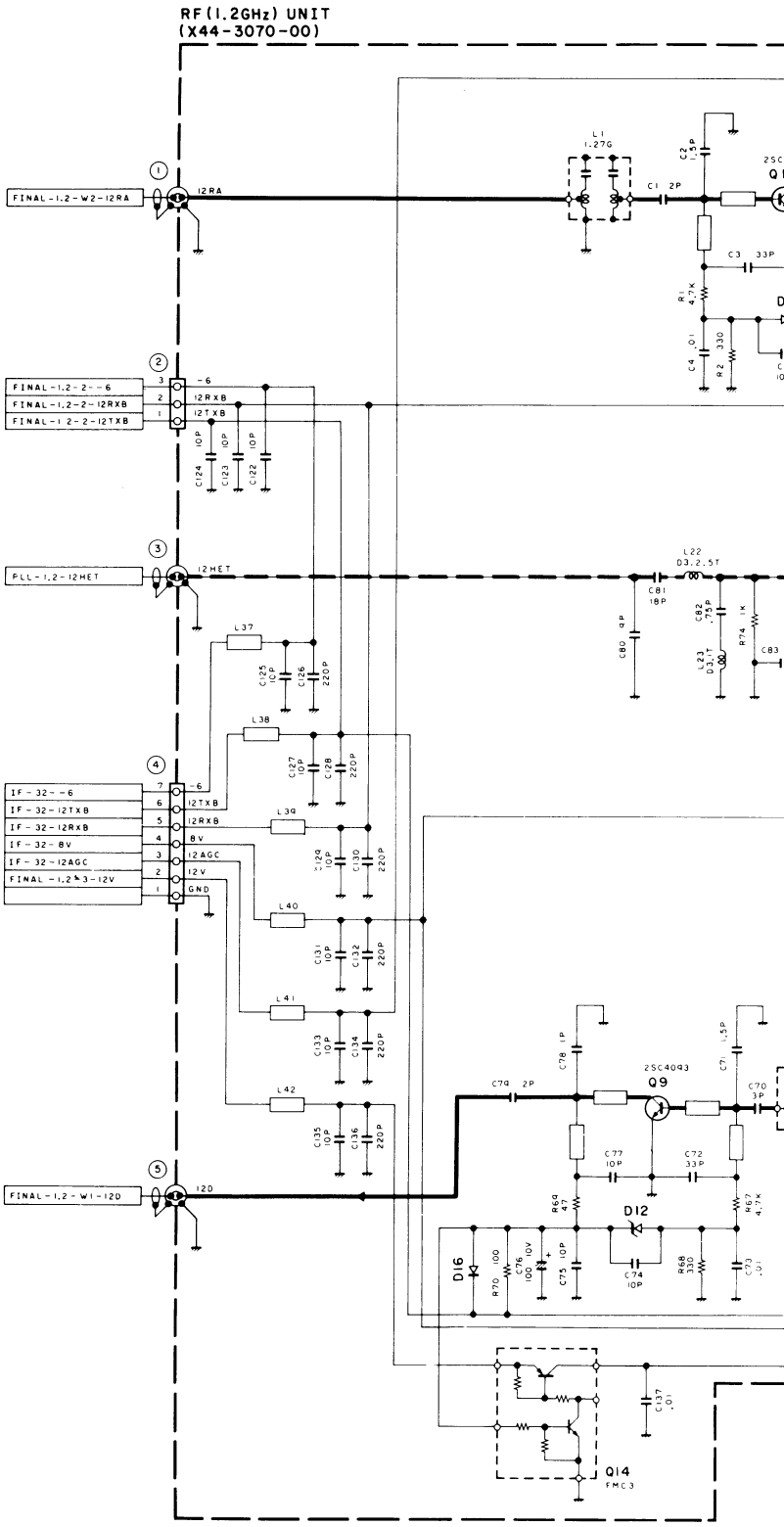
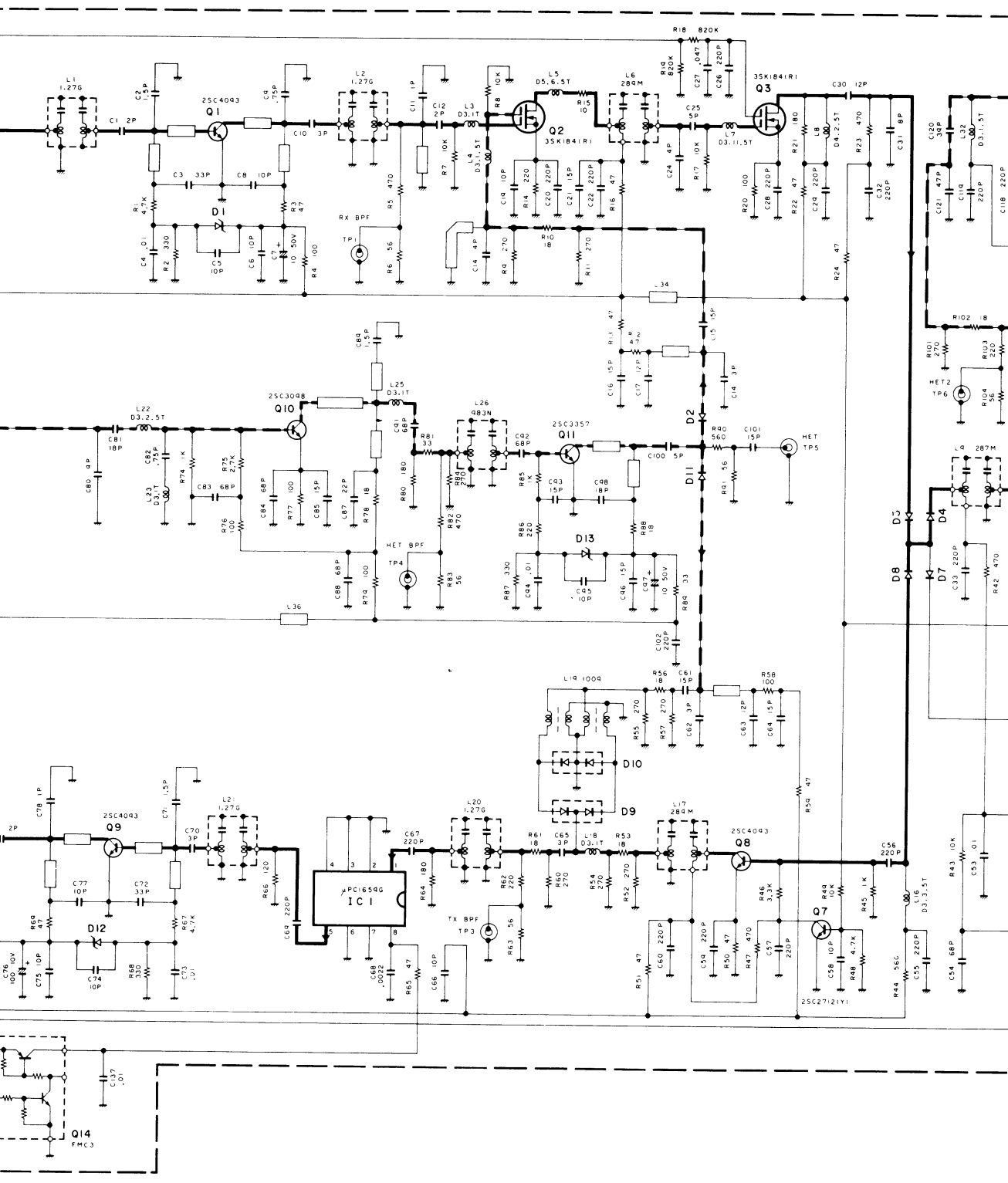
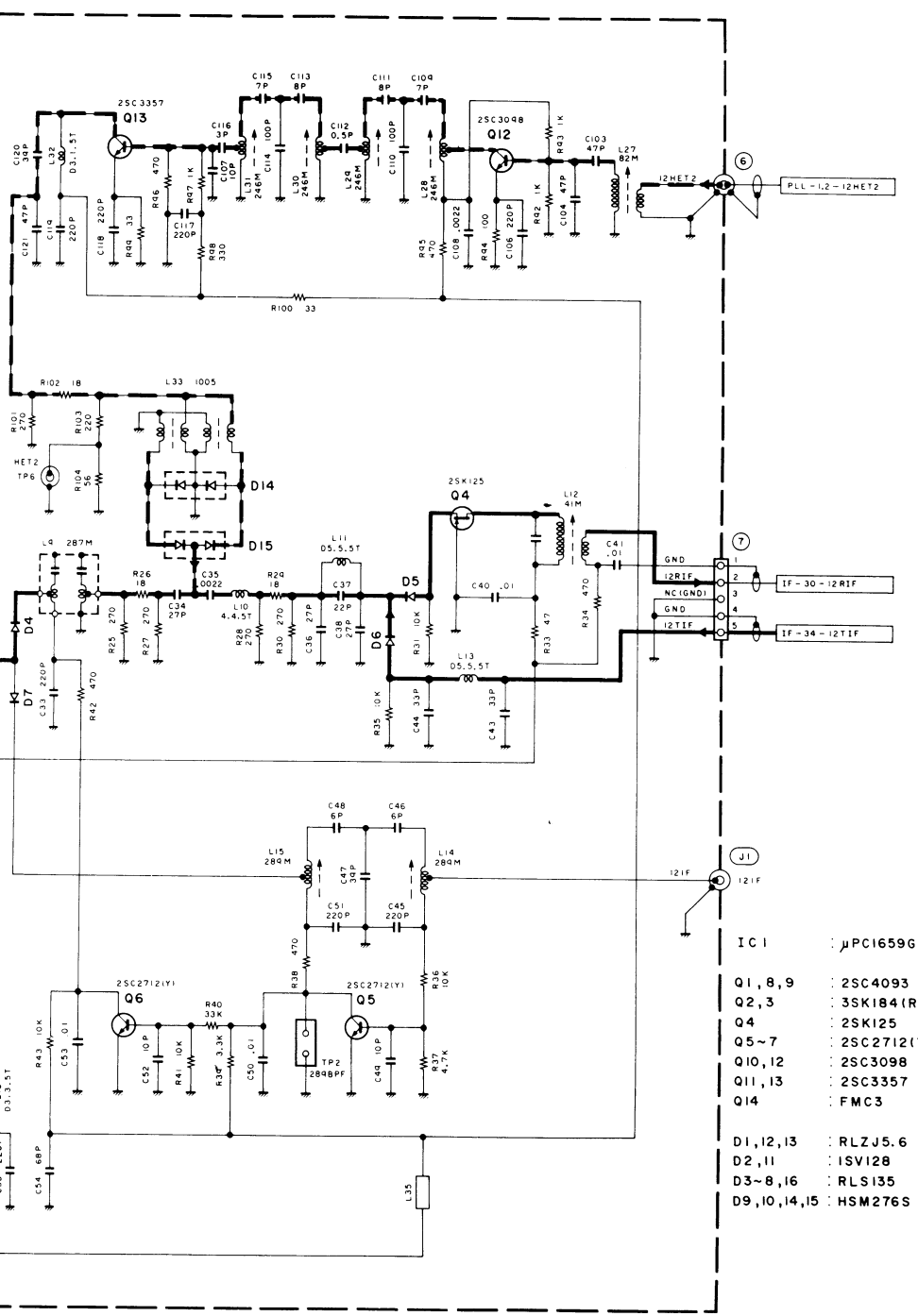


Diagram is subject to change without notice due to advancements in technology.

■ RF (1.2 GHz) UNIT (X44-3070-00)



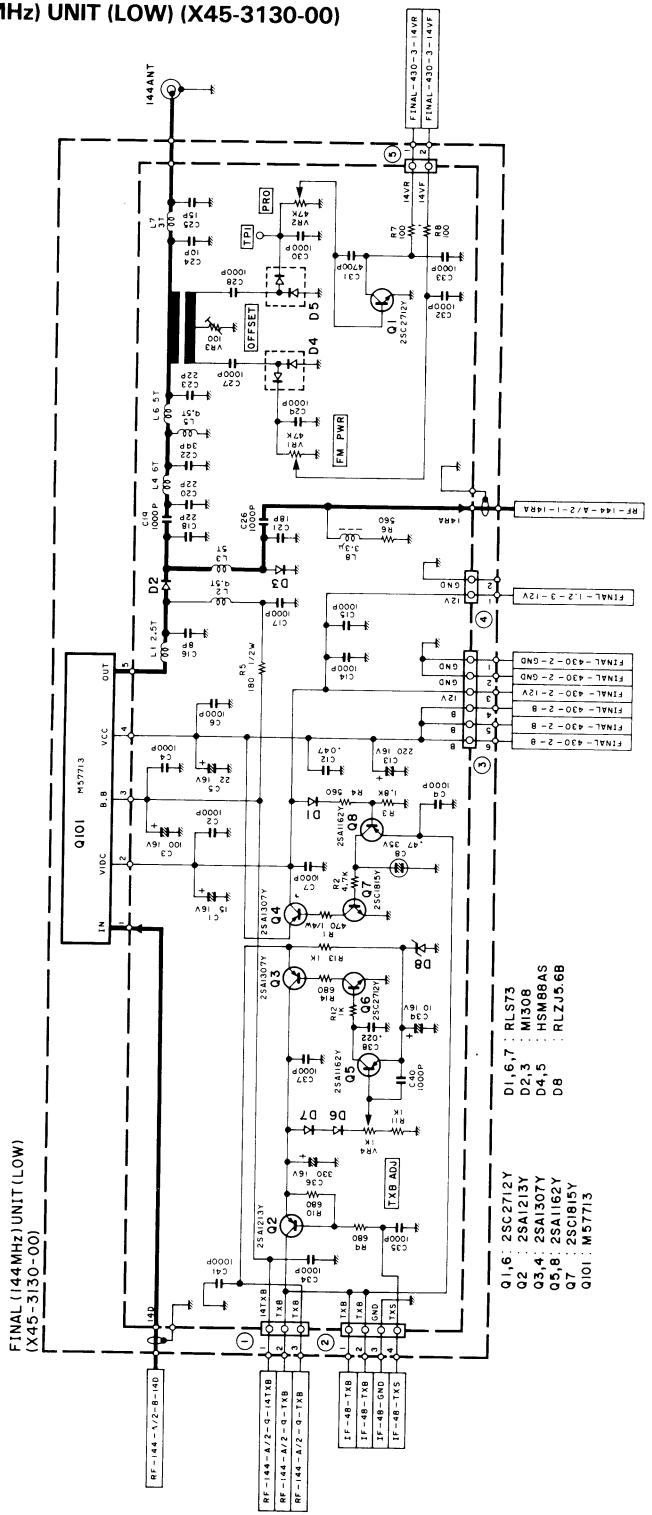

L1 1.27G
C1 2P
C2 1.5P
2SC4093 Q1
C9 .75P
C10 3P
C3 33P
C8 10P
R1 4.7K
R3 47
D1
C4 .01
R2 330
C5 10P
C6 10P
C7 10 50V
R4 100
L2 1.27G
C11 1P
C12 2P
L3 D3.1T
R8 10K
L5 D5.6.5T
R15 10
L6 28φM
Q2 3SK184(R)
L4 D3.1.5T
R7 10K
R5 470
R6 56
TP1
RX BPF
C14 4P
R9 270
R10 18
R11 270
C14 10P
R14 220
C20 220P
C21 15P
C22 220P
R16 47
C24 4P
R17 10K
R18 820K
R19 820K
C27 .047
C26 220P
C25 5P
L7 D3.11.5T
3SK184(R1) Q3
C30 12P
R21 180
L8 D4.2.5T
R20 100
C28 220P
R22 47
C29 220P
R23 470
C32 220P
C31 8P
R24 47
L34
R13 47
R12 47Ω
C15 15P
C16 15P
C17 12P
C14 3P
C85 1.5P
L25 D3.1T
25C3098 Q10
L22 D3.2.5T
C81 18P
C80 4P
C82 .75P
L23 D3.1T
R74 1K
C83 68P
R75 2.7K
R76 100
C84 68P
R77 100
C85 15P
L87 22P
R78 18
L26 Q83N
C91 68P
R81 33
C92 68P
R84 R85
C93 15P
C98 18P
2SC3357 Q11
C100 5P
D2
D11
R40 560
C101 15P
HET TP5
R41 56
R80 180
R82 470
R86 220
R87 330
C94 .01
D13
C95 10P
C46 15P
C47 10 50V
R88 18
R84 33
HET BPF
TP4
C88 68P
R79 100
R83 56
L36
C102 220P
L19 100φ
R56 18
C61 15P
R58 100
R55 270
R57 270
C62 3P
C63 2P
C64 5P
D10
D9
R59 47
C67 220P
L20 1.27G
R61 18
C65 3P
L18 D3.1T
R53 18
L17 28φM
2SC4093 Q8
C56 220P
R64 180
R62 220
R60 270
R54 270
R52 270
R46 3.3K
R49 10K
R45 1K
L16 D3.3.5T
TX BPF
TP3
R63 56
C60 220P
C59 220P
R50 47
R47 470
C57 220P
Q7
C58 10P
R48 4.7K
R51 47
R44 56Ω
C55 220P
C54 68P
25C2712(Y)
C53 .01
R43 10K
C78 1P
C71 1.5P
2SC4093 Q9
C70 3P
L21 1.27G
C77 10P
C72 33P
R66 120
C69 220P
μPC1659G IC1
R69 47
R67 4.7K
D12
C76 100 10V
C75 10P
C74 10P
R68 330
C73 .01
C68 .0022
R65 47
C66 10P
Q14 FMC3
C37 .01
D3
D4
D5
D7
D8
R102 18
R101 270
R103 270
HET2
TP6
R104 18
LQ 287M
C33 220P
R42 470



IC1	: μPC1659G
Q1, 8, 9	: 2SC4093
Q2, 3	: 3SK184(R)
Q4	: 2SK125
Q5~7	: 2SC2712(Y)
Q10, 12	: 2SC3098
Q11, 13	: 2SC3357
Q14	: FMC3
D1, 12, 13	: RLZJ5.6
D2, 11	: 1SV128
D3~8, 16	: RLS135
D9, 10, 14, 15	: HSM276S

Note:
Circuit Diagram is subject to change without notice due to advancements in technology.

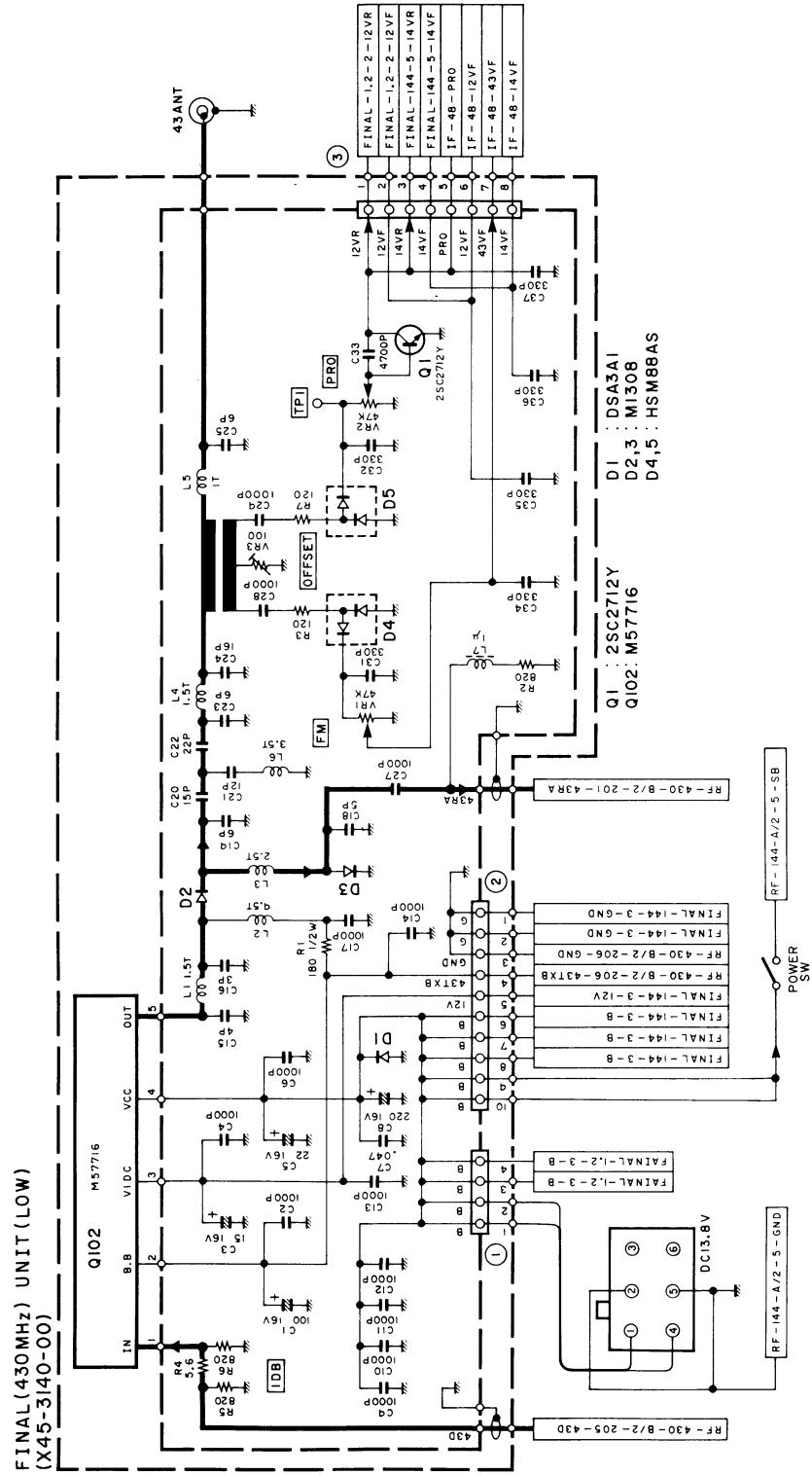
■ FINAL (144 MHz) UNIT (LOW) (X45-3130-00)



Note:

Circuit Diagram is subject to change without notice due to advancements in technology.

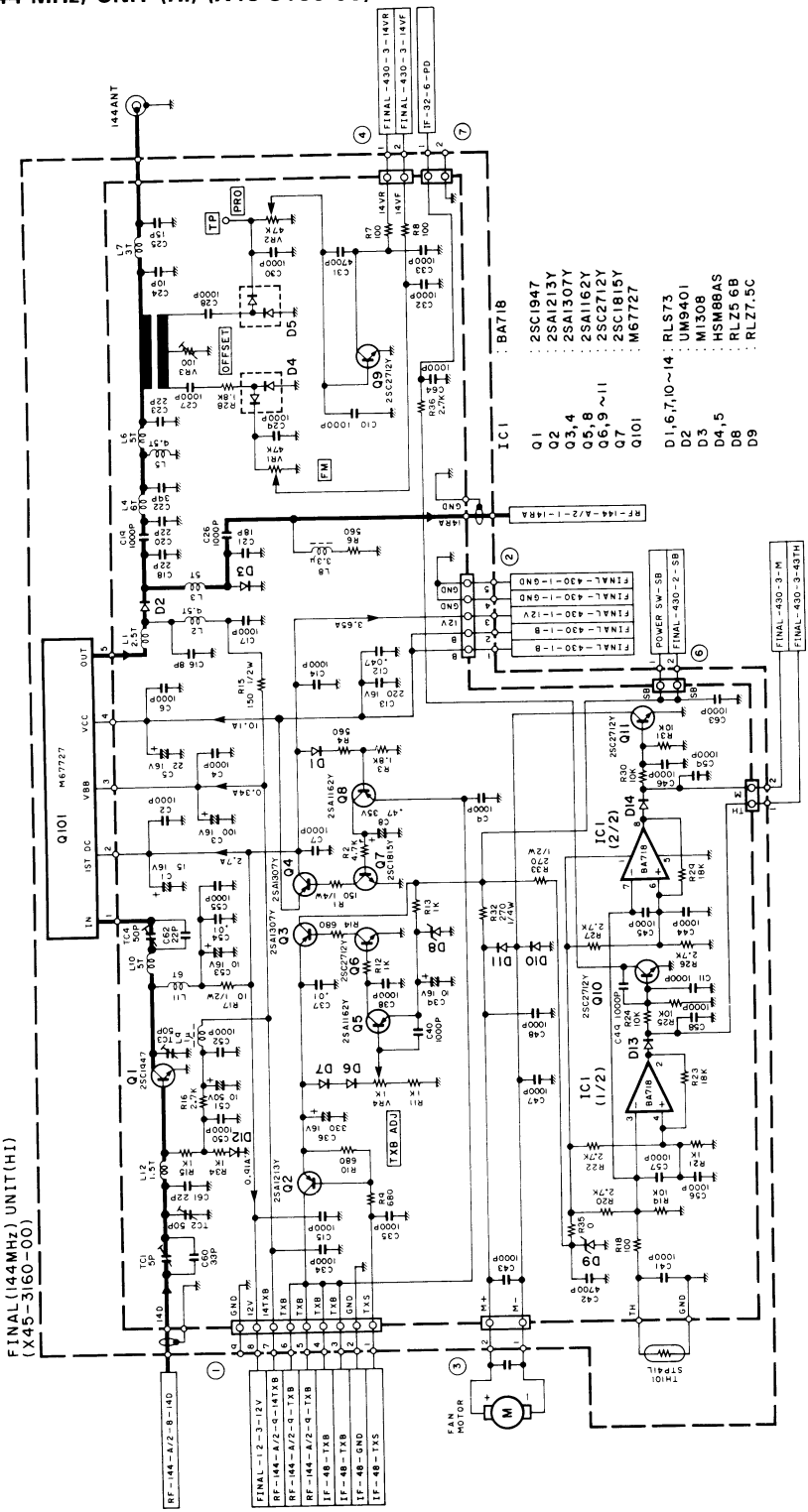
■ FINAL (430 MHz) UNIT (LOW) (X45-3140-00)



Note:

Circuit Diagram is subject to change without notice due to advancements in technology.

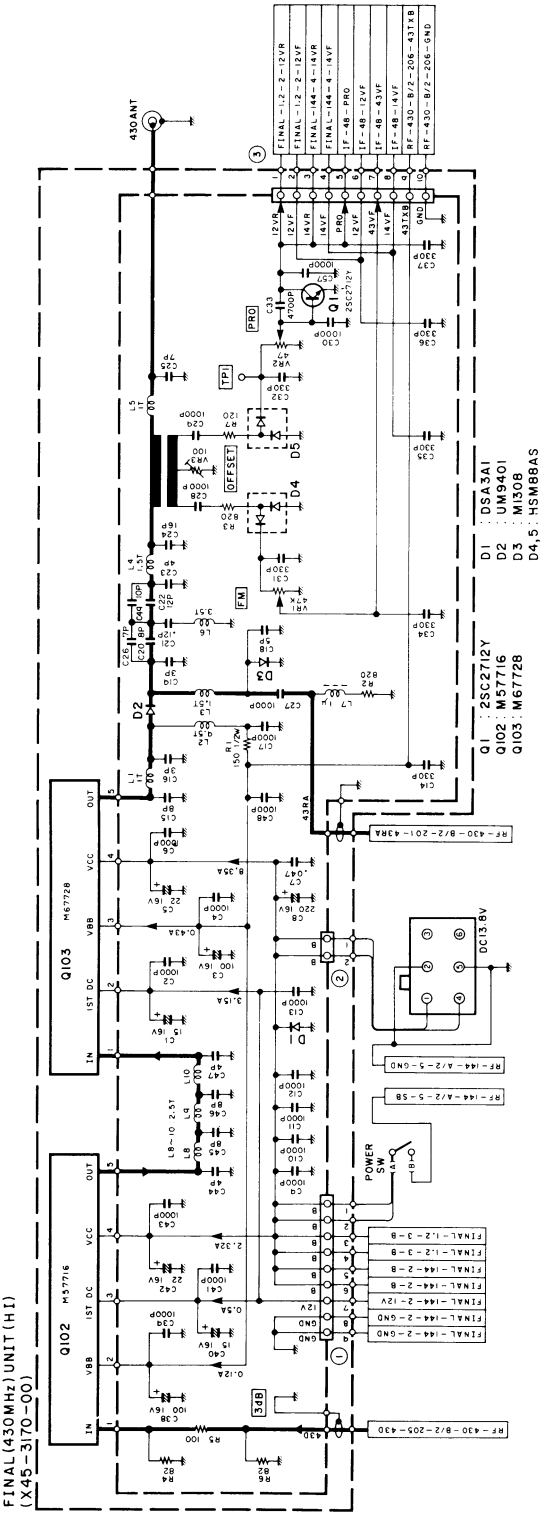
■ FINAL (144 MHz) UNIT (HI) (X45-3160-00)



Note:

Circuit Diagram is subject to change without notice due to advancements in technology.

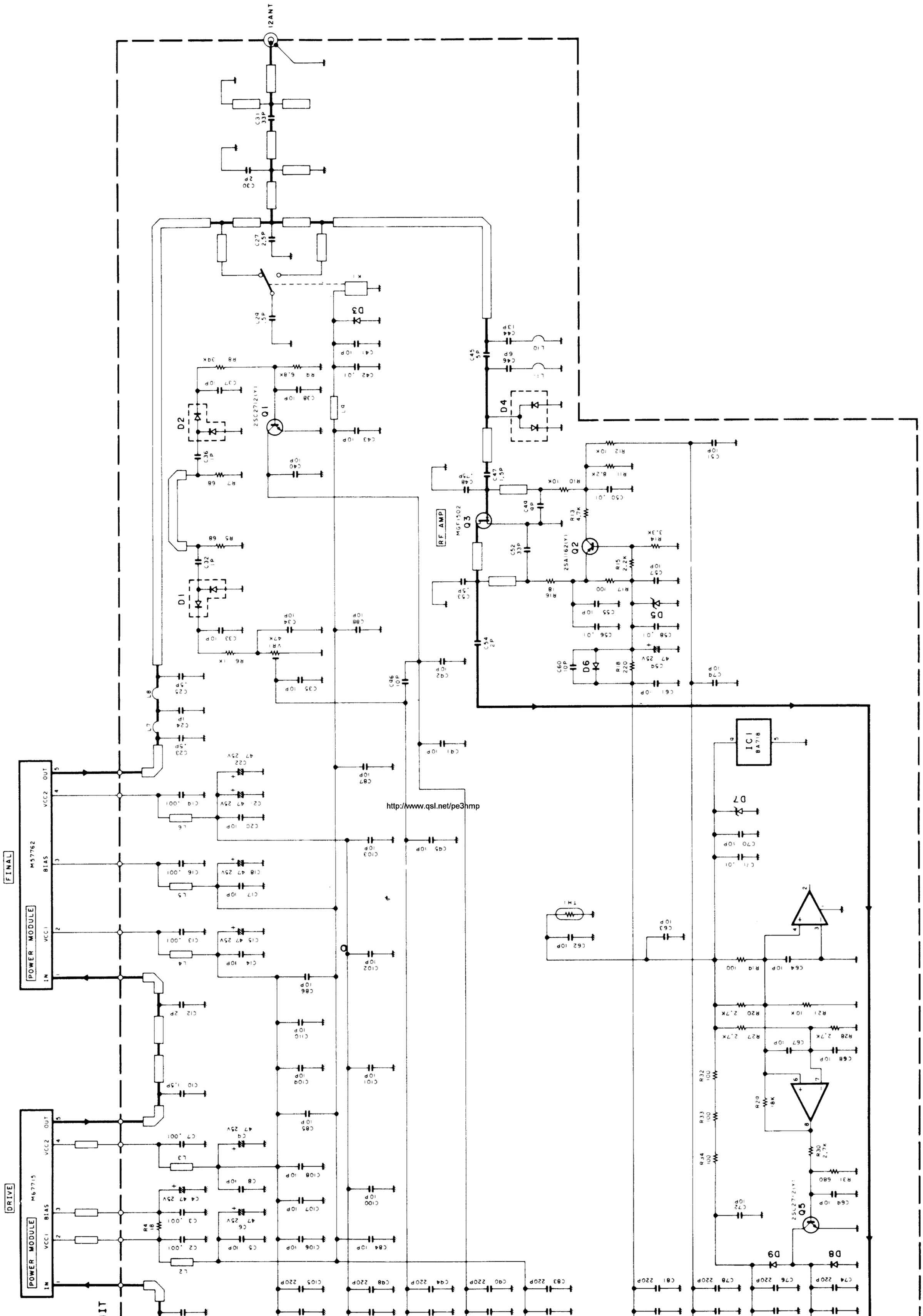
■ FINAL (430 MHz) UNIT (HI) (X45-3170-00)



Note:

Circuit Diagram is subject to change without notice due to advancements in technology.

■ FINAL (1.2 GHz) UNIT (X45-3150-00)



Note:

Circuit Diagram is subject to change without notice due to advancements in technology.