

ERICSSON



ECP 1016A

M-PA VHF/UHF SYNTHESIZER & RF

TRAINING SESSION NOTES

TX VCO FREQ: TX FREQ (ALL BANDS)

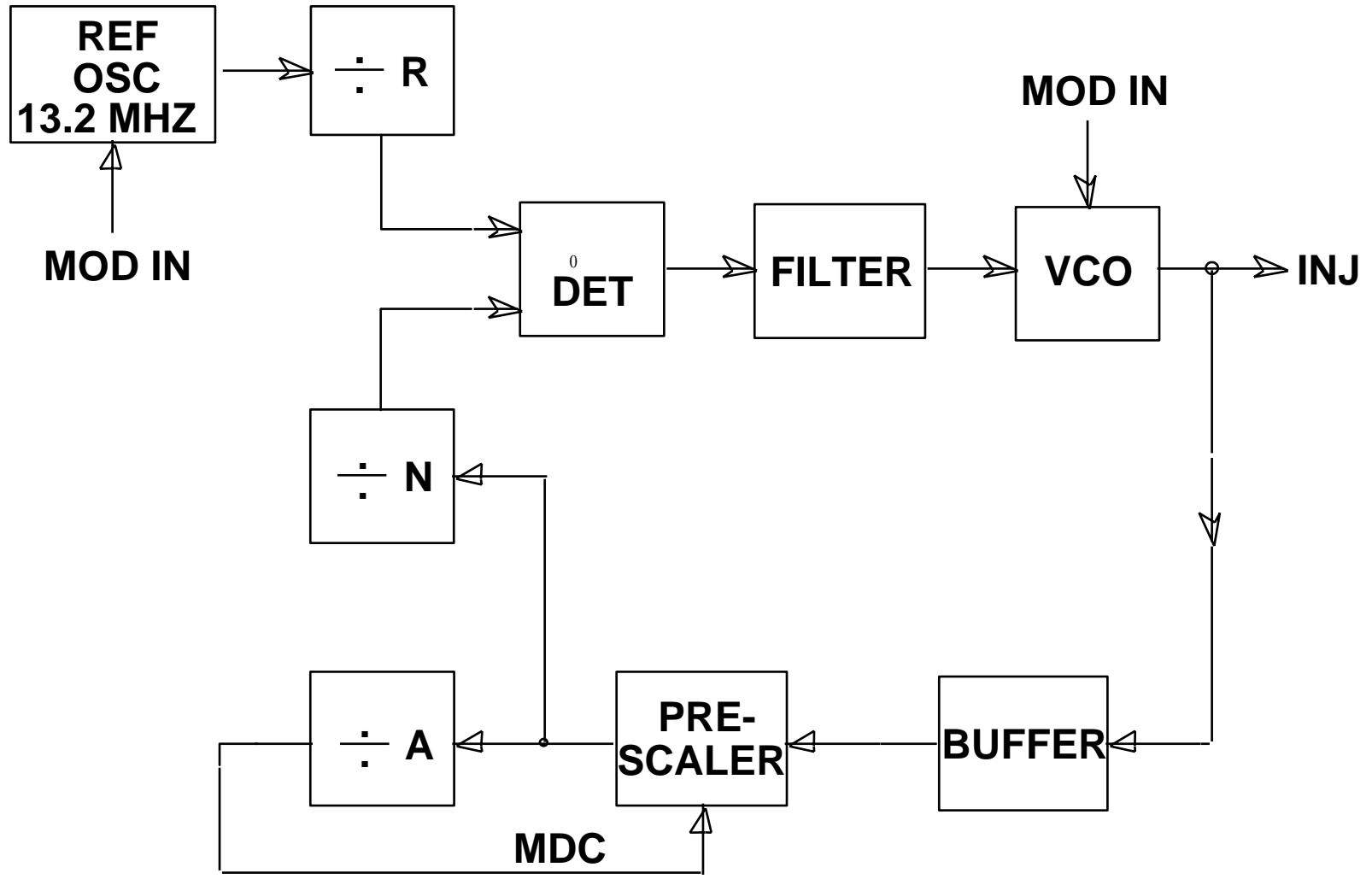
**RX VCO FREQ: RX FREQ + 45 MHZ (VHF)
RX FREQ - 45 MHZ (UHF)**

REF OSC: 13.2 MHZ (ALL BANDS)

**REF FREQ: 5 KHZ OR 6.25 KHZ (VHF)
12.5 KHZ (UHF)**

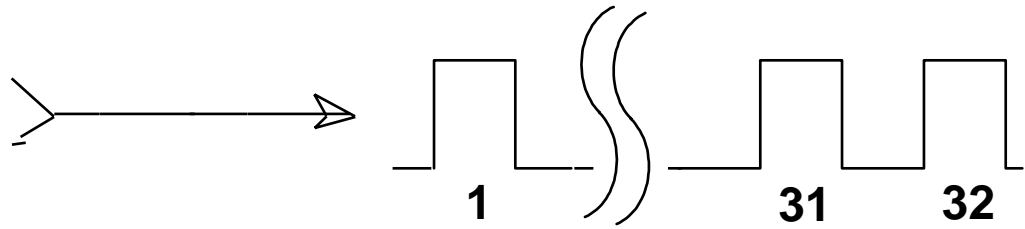
**PRESCALER: 64/65 (VHF)
128/129 (UHF)**

SYNTHESIZER NUMBERS

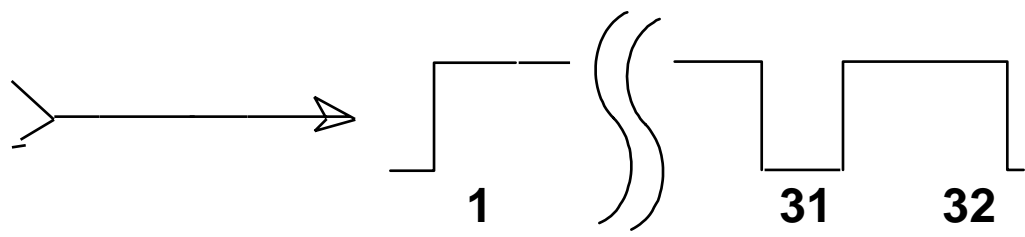


BLOCK DIAGRAM

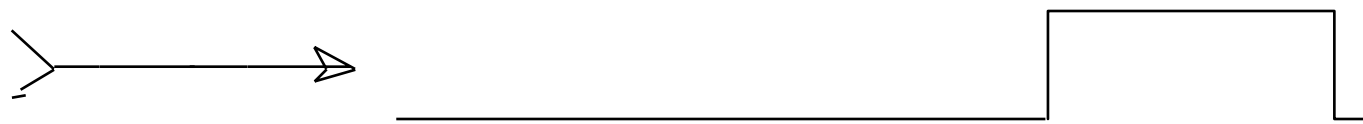
**J102-11
STROBE**



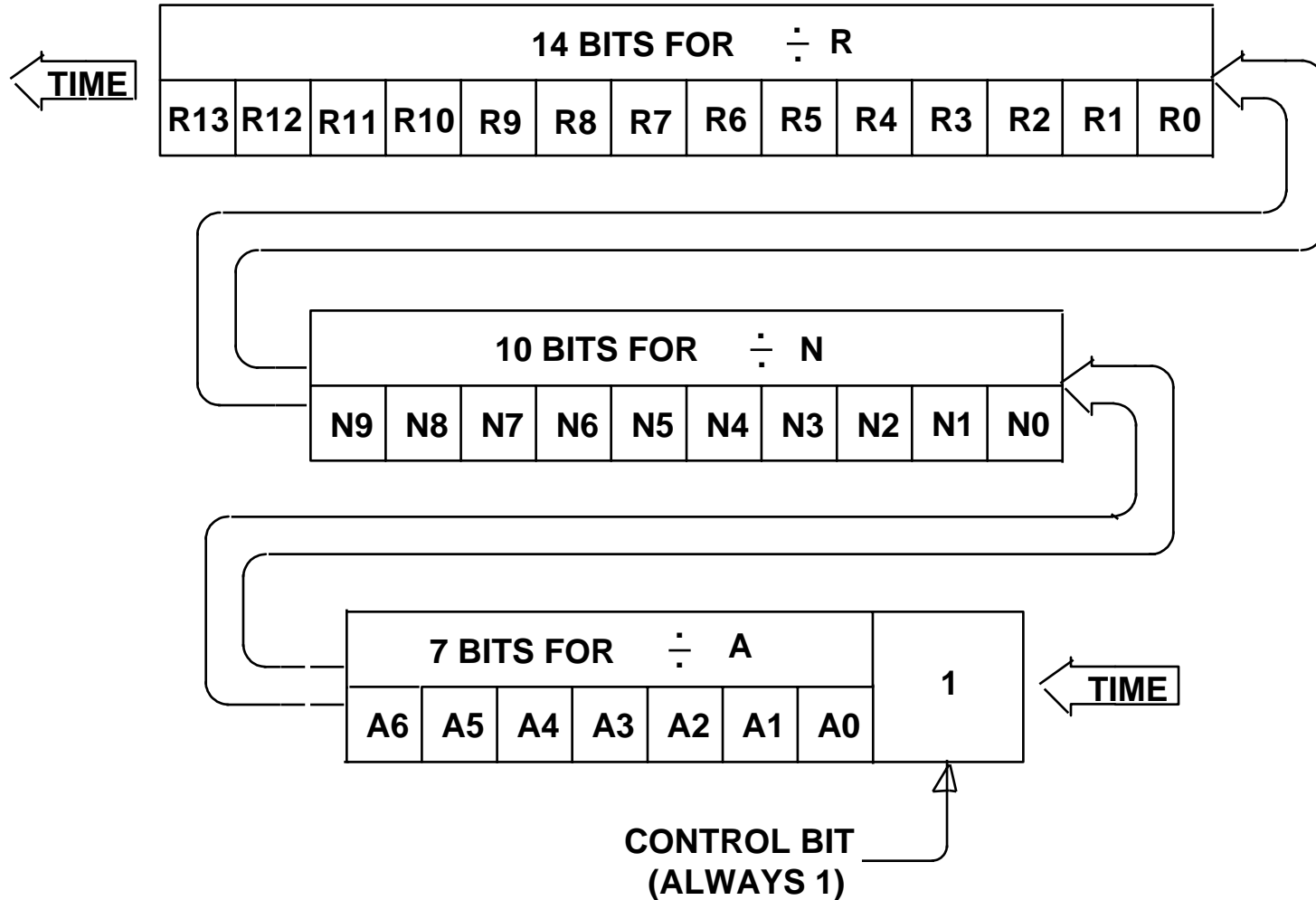
**J102-10
DATA**



**J102-9
EN**

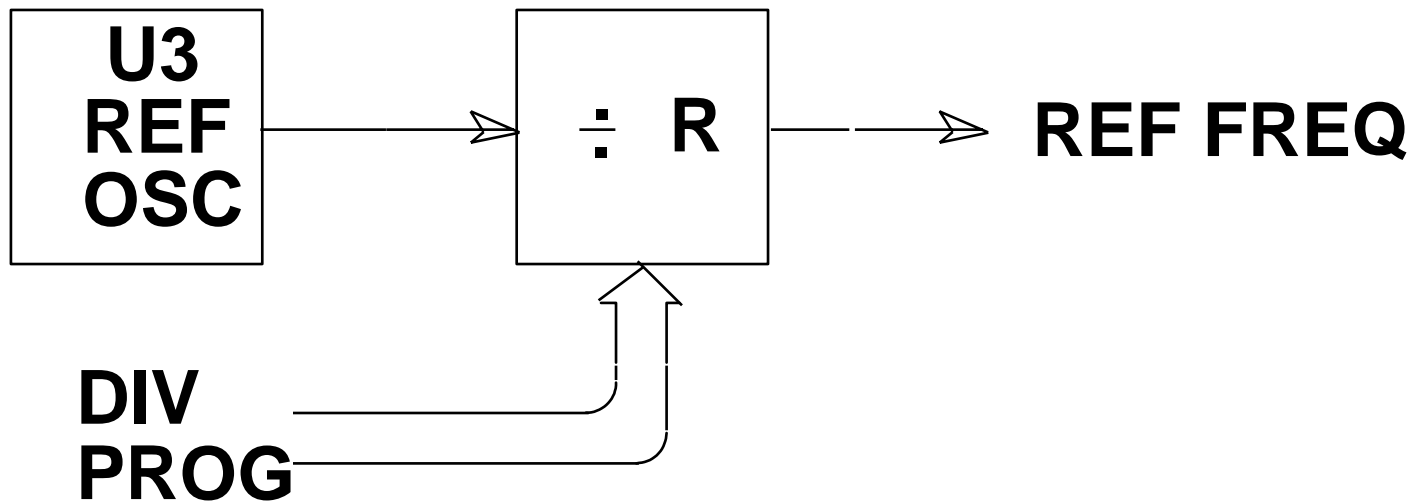


SYNTHESIZER LOADING



TOTAL: 32 BITS (1.5 MS)

SHIFT REGISTER DISTRIBUTION



$$13.2 \text{ MHz} \div .0005 \text{ MHz} = 2640 \text{ (VHF)}$$

$$13.2 \text{ MHz} \div .00625 \text{ MHz} = 2112 \text{ (VHF)}$$

$$13.2 \text{ MHz} \div .0125 \text{ MHz} = 1056 \text{ (UHF)}$$

REFERENCE OSCILLATOR DIVISION

$$\text{TOTAL DIVISION} = \frac{\text{TX OR RX INJ FREQ}}{\text{REF FREQ}}$$

$$\text{PROGRAMMING} = \frac{\text{TOTAL DIVISION}}{64 \text{ OR } 128}$$

$$\text{WHOLE NUMBER} = \div N$$

$$\text{REMAINDER} = \div A$$

DIVIDE BY N & A LOADING

$$\text{TOTAL DIVISION} = \frac{154.88}{.005} = 30976$$

$$\frac{30976}{64} = 484.00$$

$$\div N = 484$$

$$\div A = 0$$

154.88 MHZ TRANSMIT EXAMPLE

$$\text{TOTAL DIVISION} = \frac{155.13}{.005} = 31026$$

$$\frac{31026}{64} = 484.78125$$

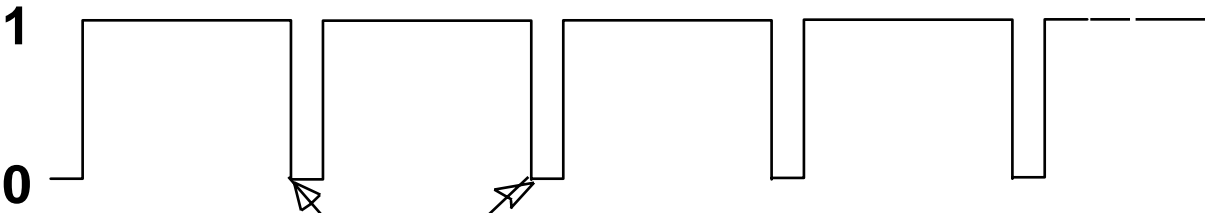
$$\div N = 484$$

$$.78125 \times 64 = 50$$

$$\div A = 50$$

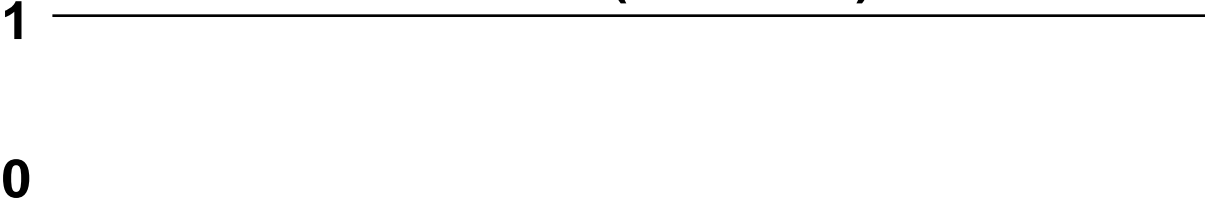
155.13 MHZ TRANSMIT EXAMPLE

MOST



200 μ S (5 KHZ)
 160 μ S (6.25 KHZ)
 80 μ S (12.5 KHZ)

SOMETIMES

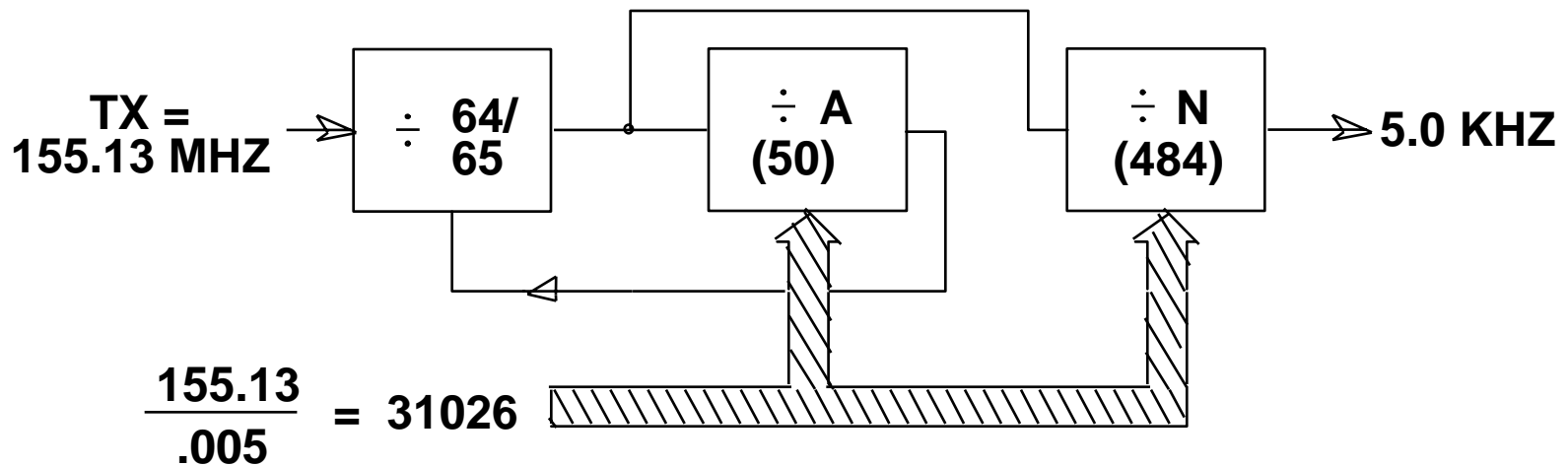


NEVER



1 = $\div 64$ OR $\div 128$
 0 = $\div 65$ $\div 129$

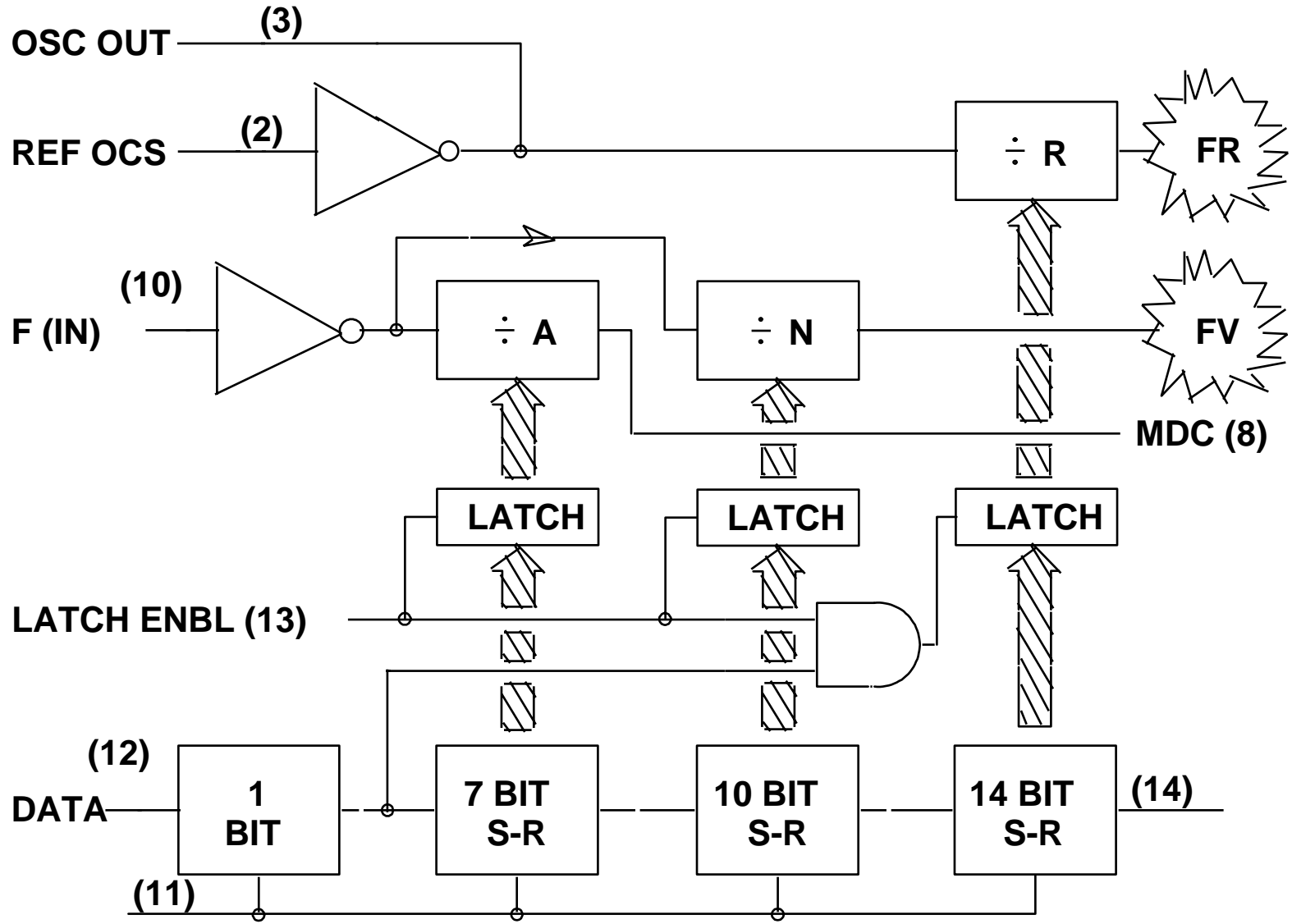
MODULUS CONTROL LINE



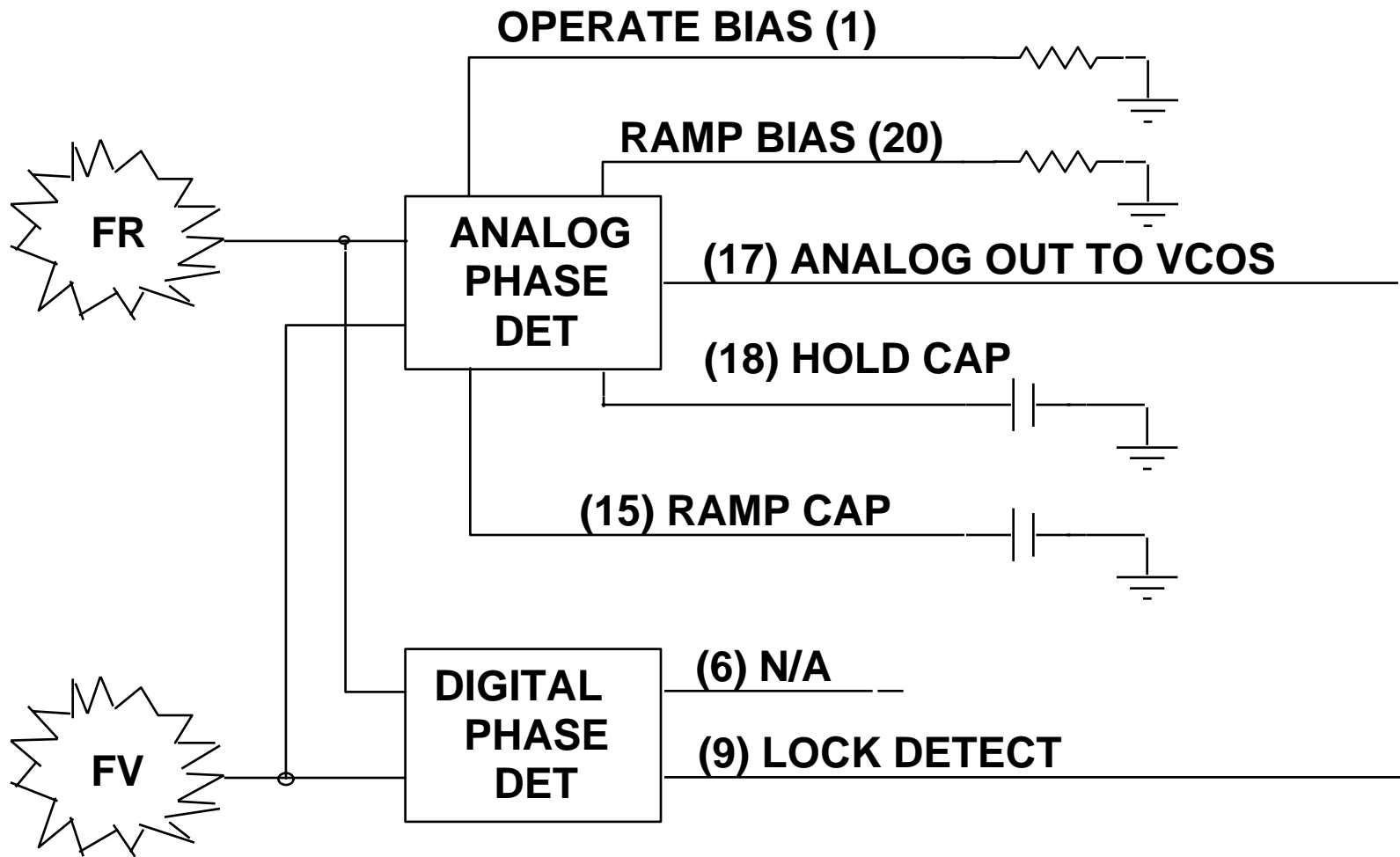
RECYCLE

CUMULATIVE INPUTS	MDC	DIVISOR	÷ A CONTENT	÷ N CONTENT	OUT
LOAD 0	0	65	50	484	0
65 X 50	1	64	0	434	0
= 3250	1	64	0	0	1
+ 64 X 434					
= 27776					
TOTAL = 31026					

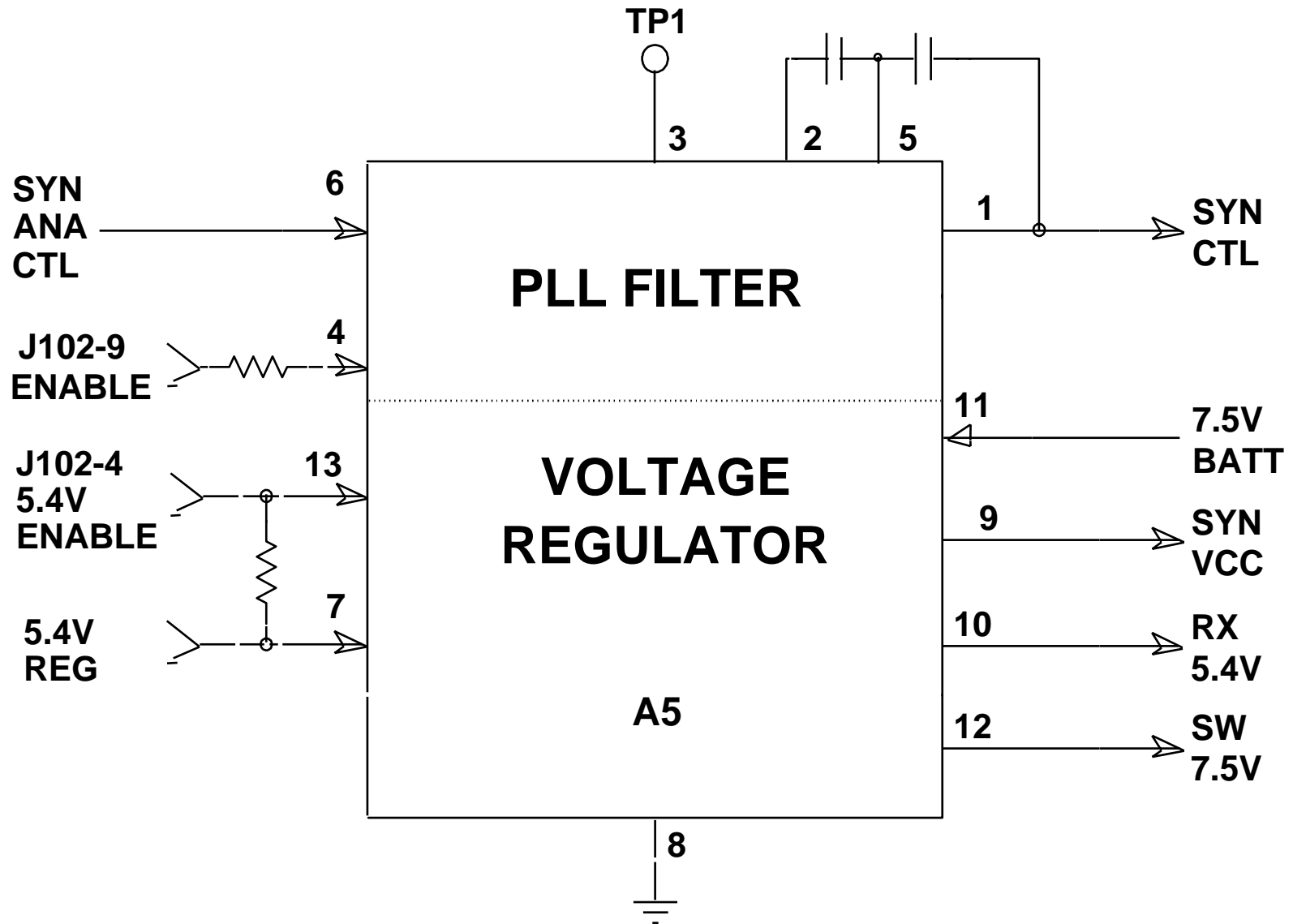
DIVISION PROCESS



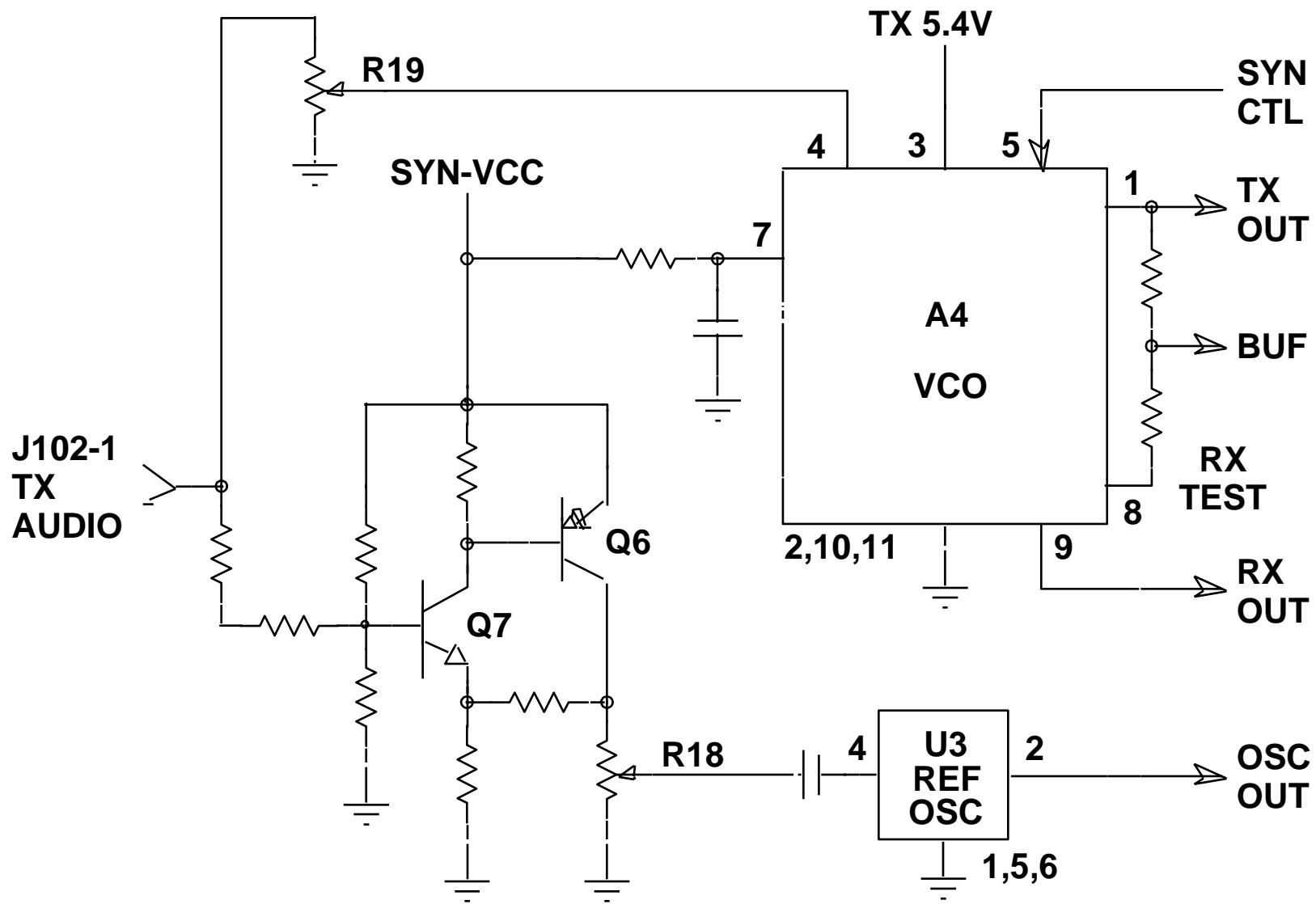
REGISTER LOADING



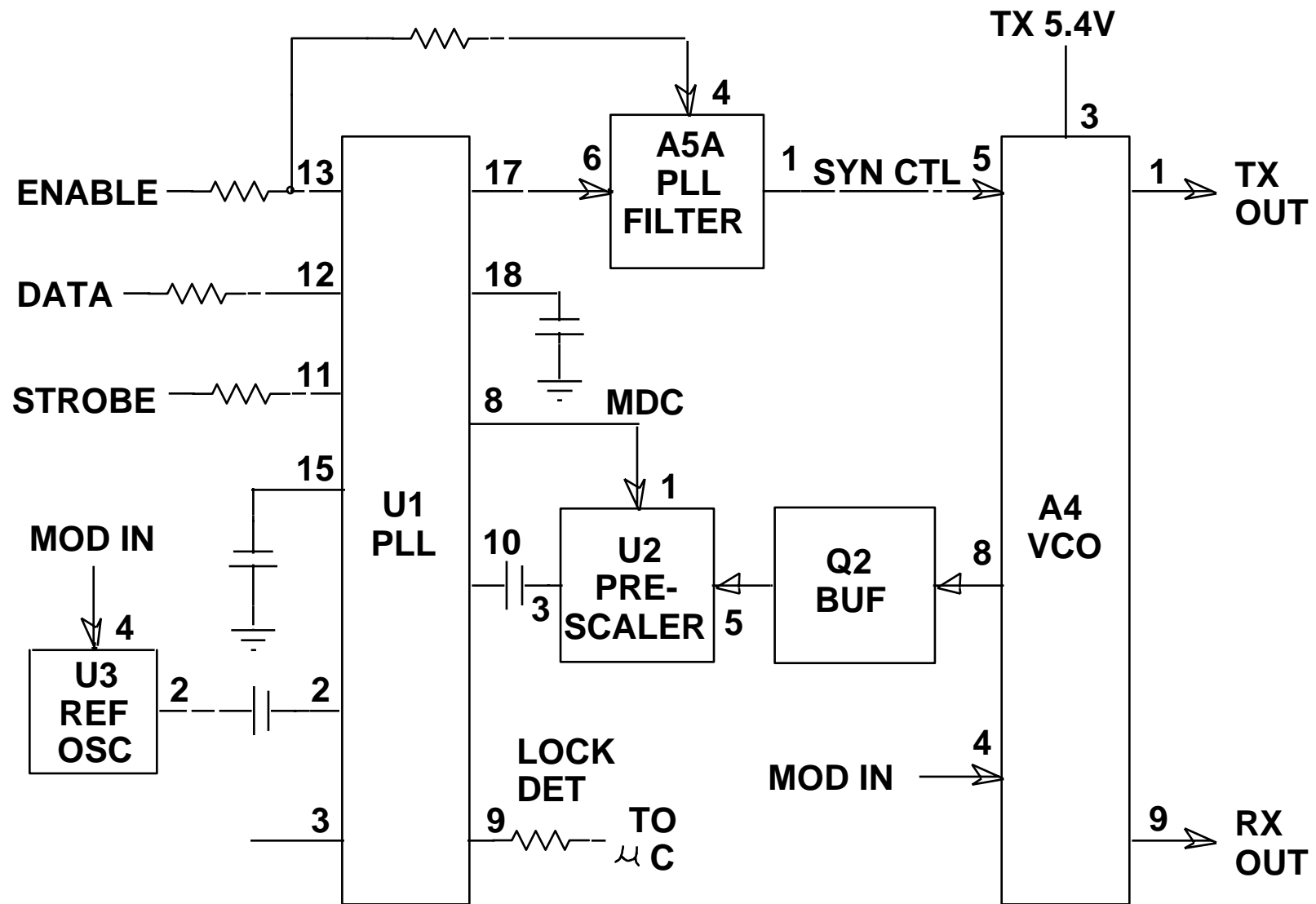
PHASE DETECTOR FUNCTIONS



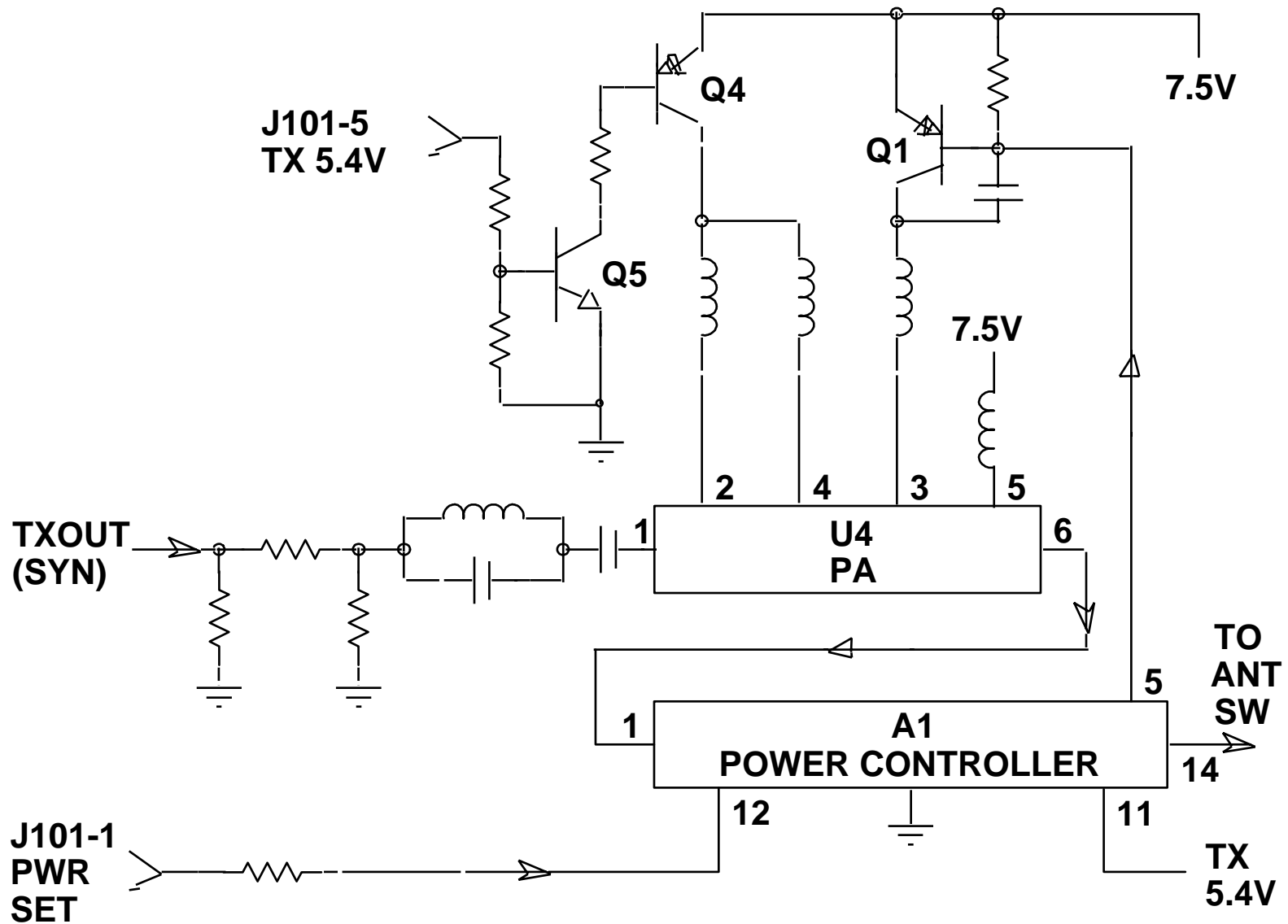
REGULATOR & PLL FILTER



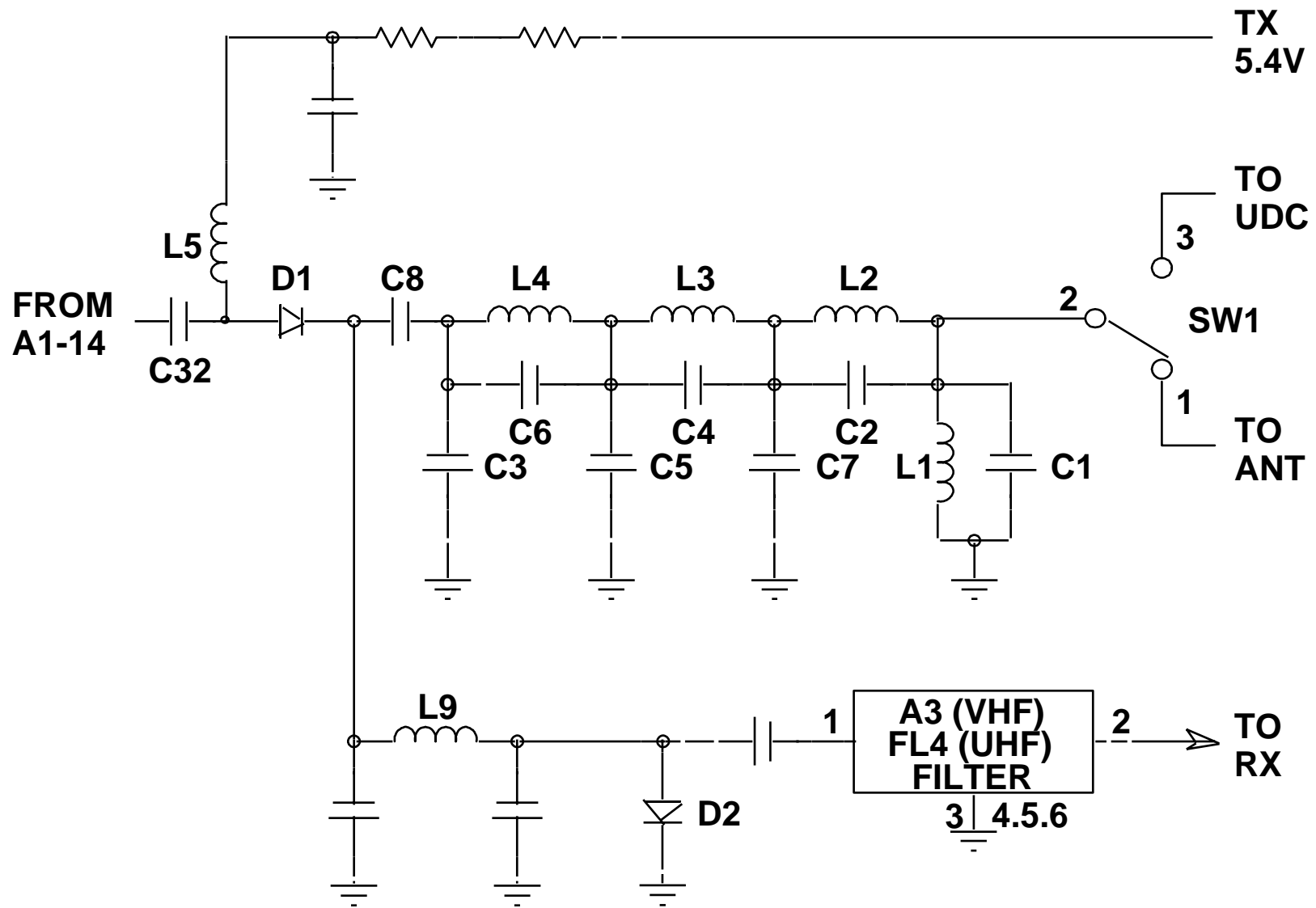
MODULATION INPUTS



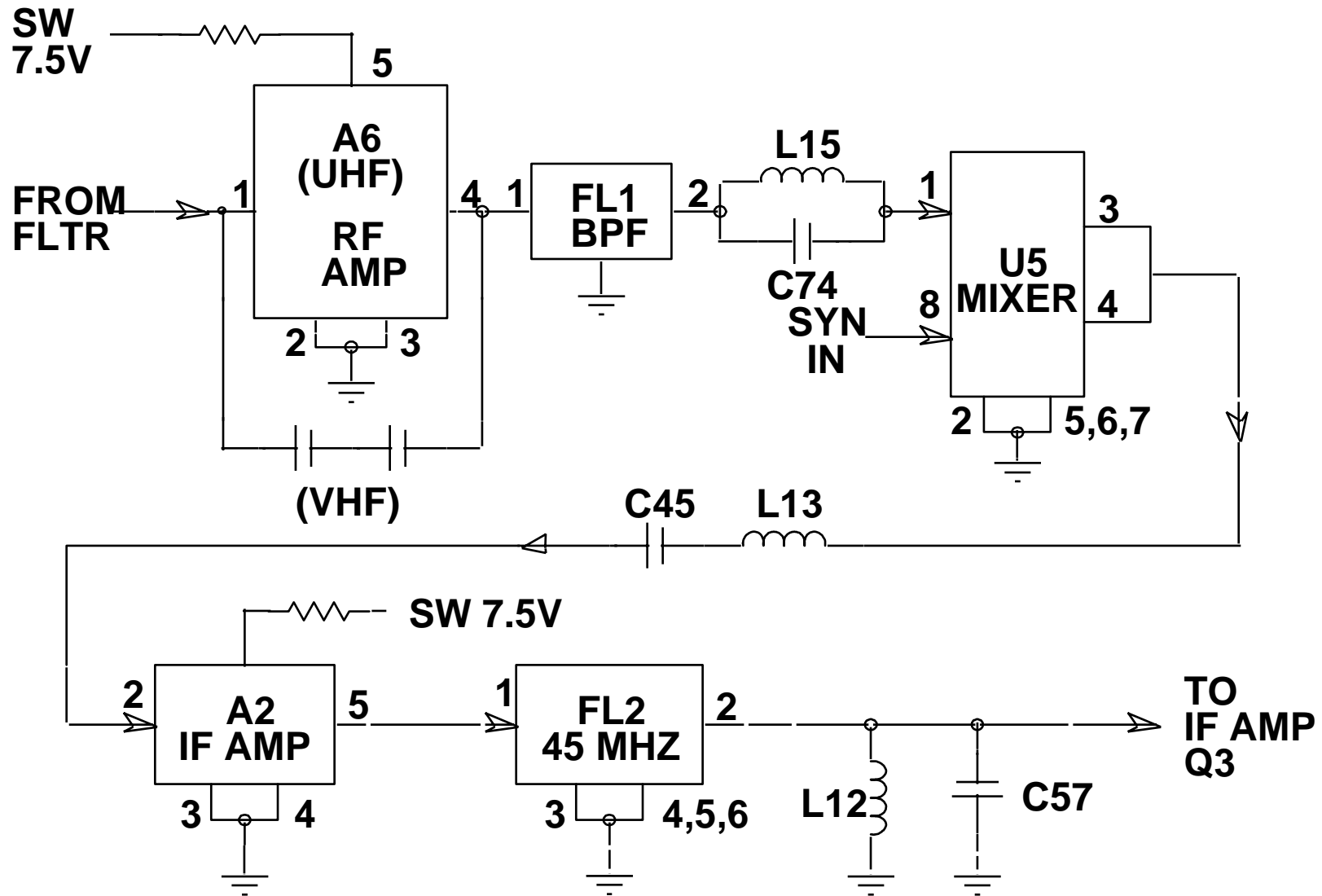
COMPLETE SYNTHESIZER



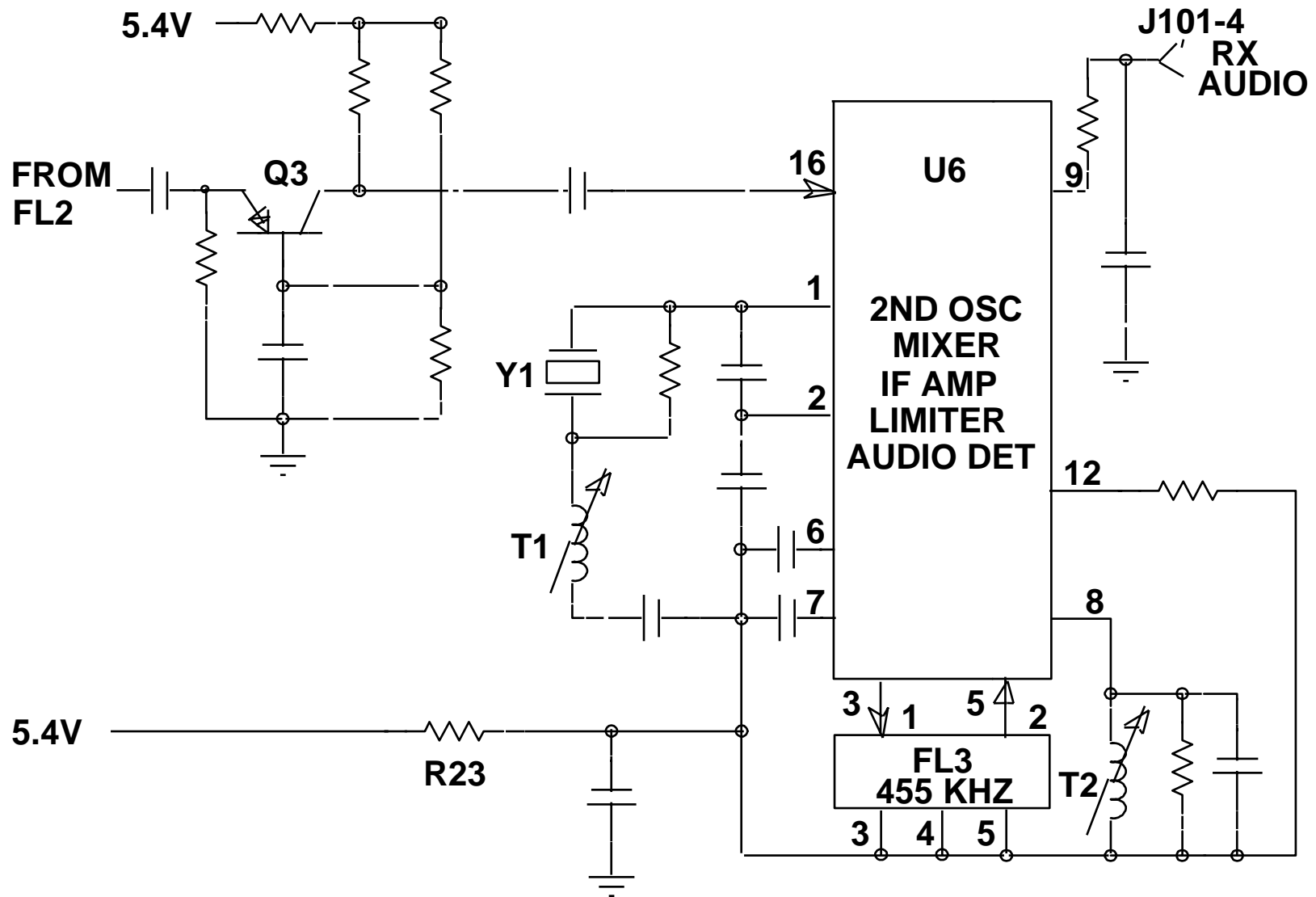
TRANSMITTER



ANTENNA SWITCH



RX FRONT END & 1ST MIXER



RX 2ND MIXER/IF/AUDIO DETECT

RF Antenna Adapter	-	ST3559P2
RF/Logic Ext Cable	-	K19/A4WX01544
Dummy Battery	-	K19/A4WX01543
Test Box	-	TQ-0609
Prog Manual/Software	-	TQ-3339/4339
Programming Kit	-	TQ-3310
Programming Cable	-	TQ-3311
Tuning Tool	-	19B801640P1
Tuning Tool	-	19B219079P1
Front Cover Test Kit	-	SPK-9010
Front Cover Test Kit	-	SPK-9011



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