

**ECP-1060C**

**EDACS 800 MHz  
M-PA Synthesizer & RF**

**Training Session Notes**

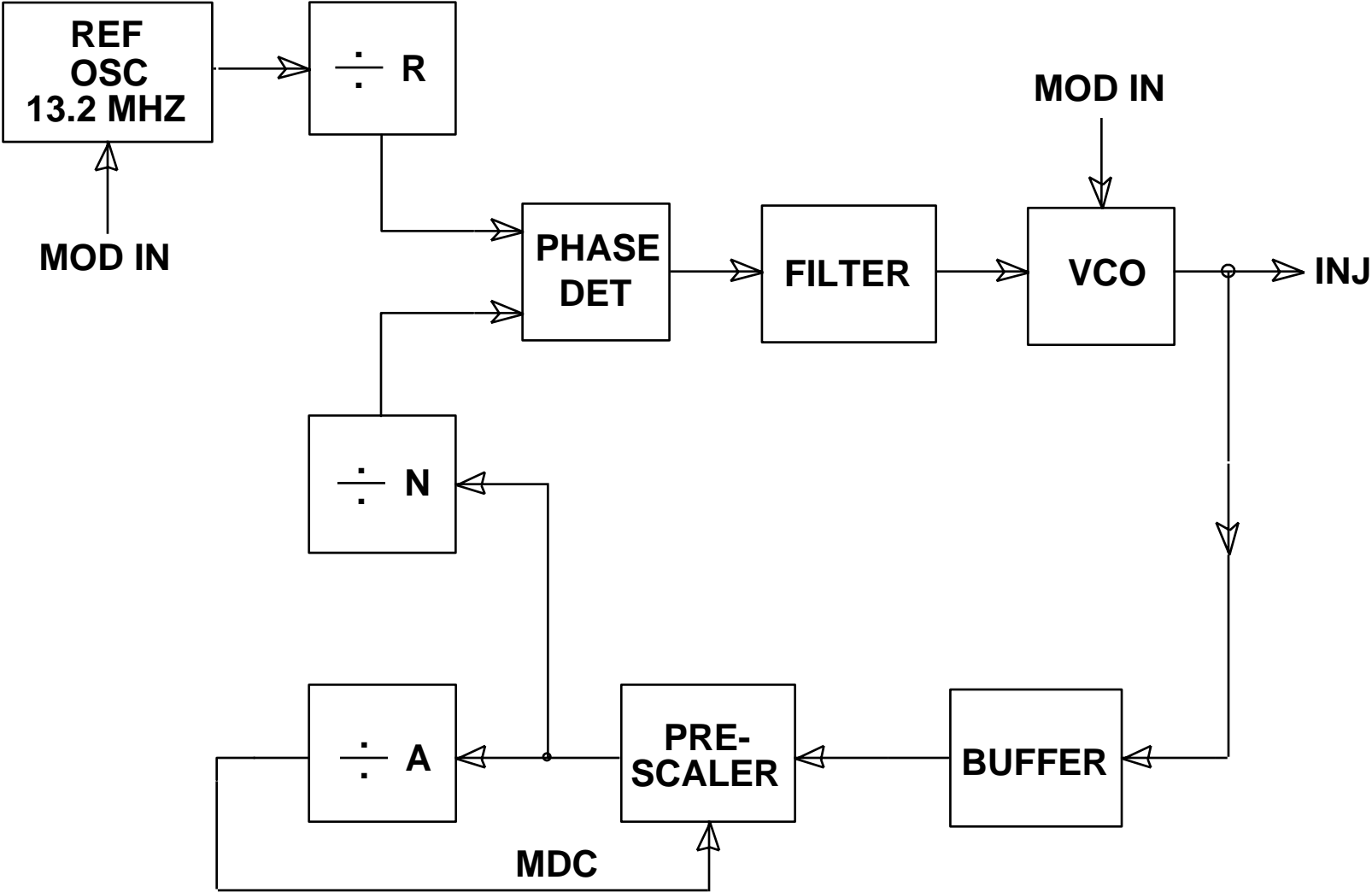
**ERICSSON**



## Synthesizer Numbers

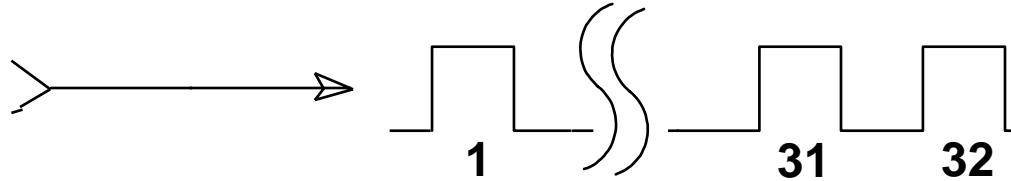
- **Tx VCO Freq: Tx Freq**
- **Rx VCO Freq: Rx Freq - 45.0125**
- **Ref Osc: 13.2 MHz**
- **Ref Freq: 12.5 KHZ**
- **Prescaler: 128/129**

# Synthesizer Block

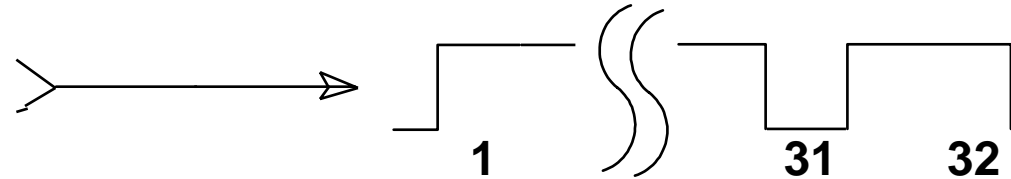


# Synthesizer Loading

**J102-11  
CLOCK**



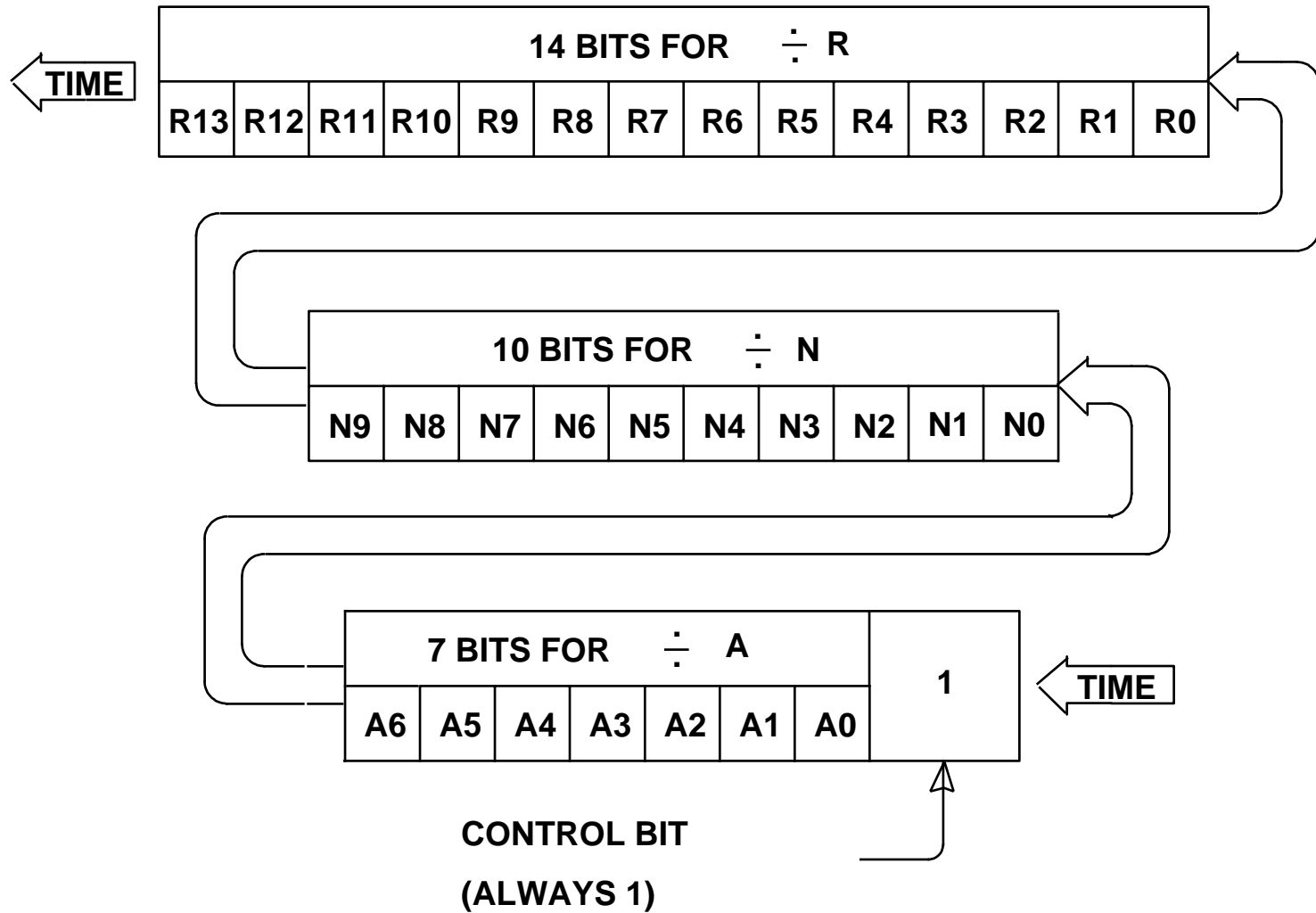
**J102-10  
DATA**



**J102-9  
ENABLE**



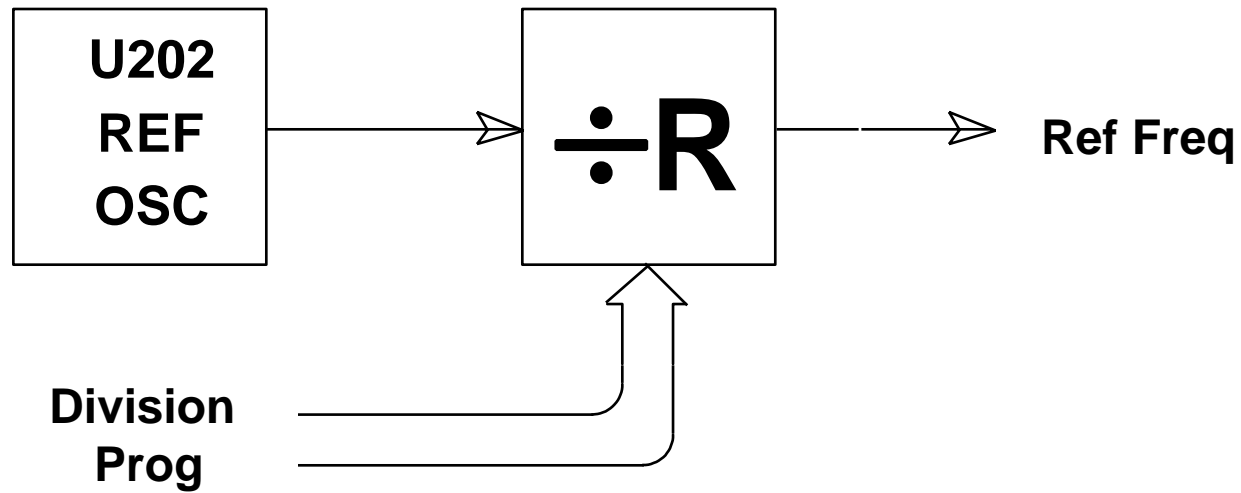
# Shift Register Distribution



CONTROL BIT  
(ALWAYS 1)

TOTAL: 32 BITS (1.5 MS)

## Reference Oscillator Division



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

## Divide By N & A Loading

$$\text{Total Division} = \frac{\text{Tx Or Rx Inj Freq}}{\text{Ref Freq}}$$

$$\text{PROGRAMMING} = \frac{\text{Total Division}}{128}$$

$$\text{Whole Number} = \div N$$

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

## 809.600 MHz Transmit Example

$$\text{TOTAL DIVISION} = \frac{809.60}{.0125} = 64768$$

$$\frac{64768}{128} = 506.000$$

$$\div N = 506$$

$$\div A = 0$$



## 806.150 Transmit Example

$$\text{Total Division} = \frac{806.15}{.0125} = 64492$$

$$\frac{64492}{128} = 503.84375$$

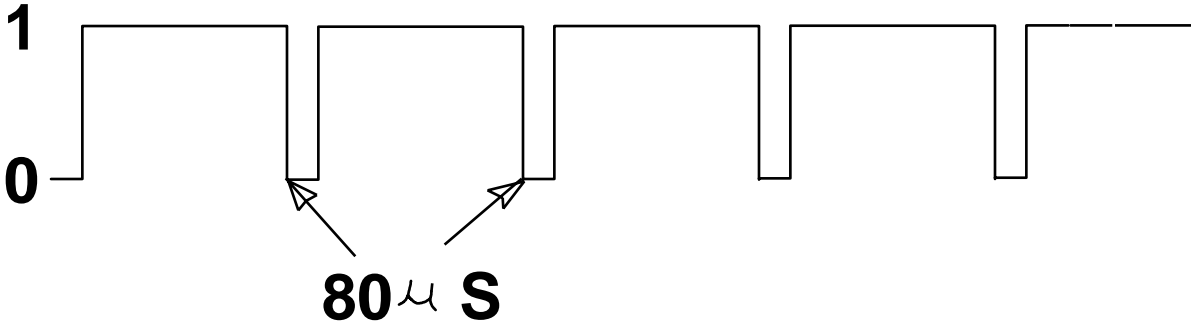
$$\div N = 503$$

$$.84375 \times 128 = 108$$

$$\div A = 108$$

# Modulus Control Line

Most



Sometimes

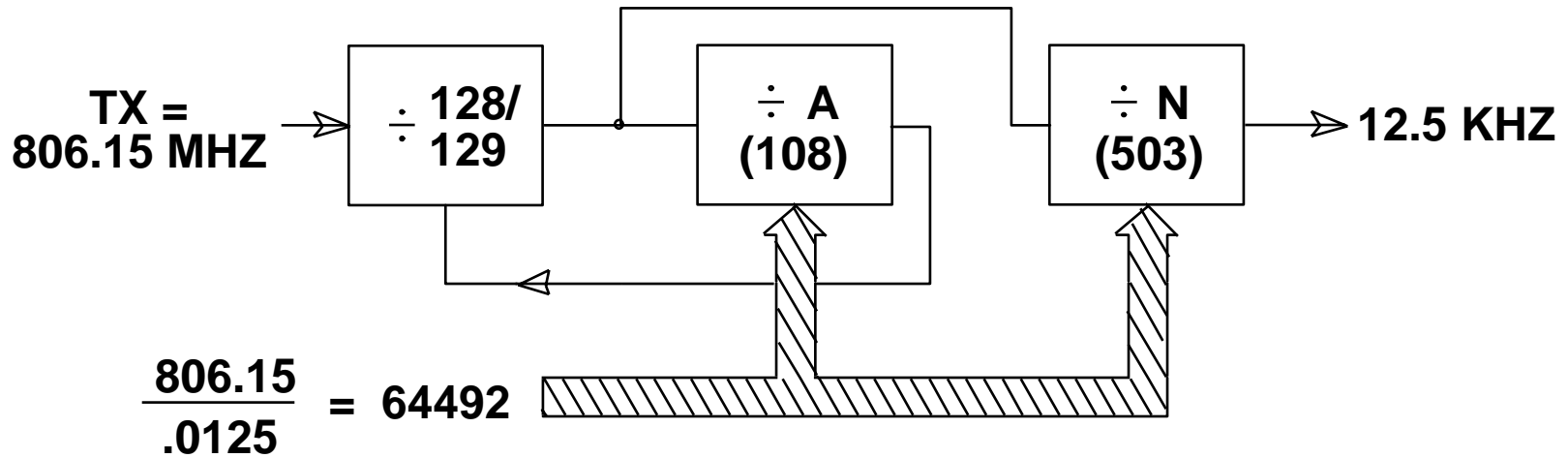


Never



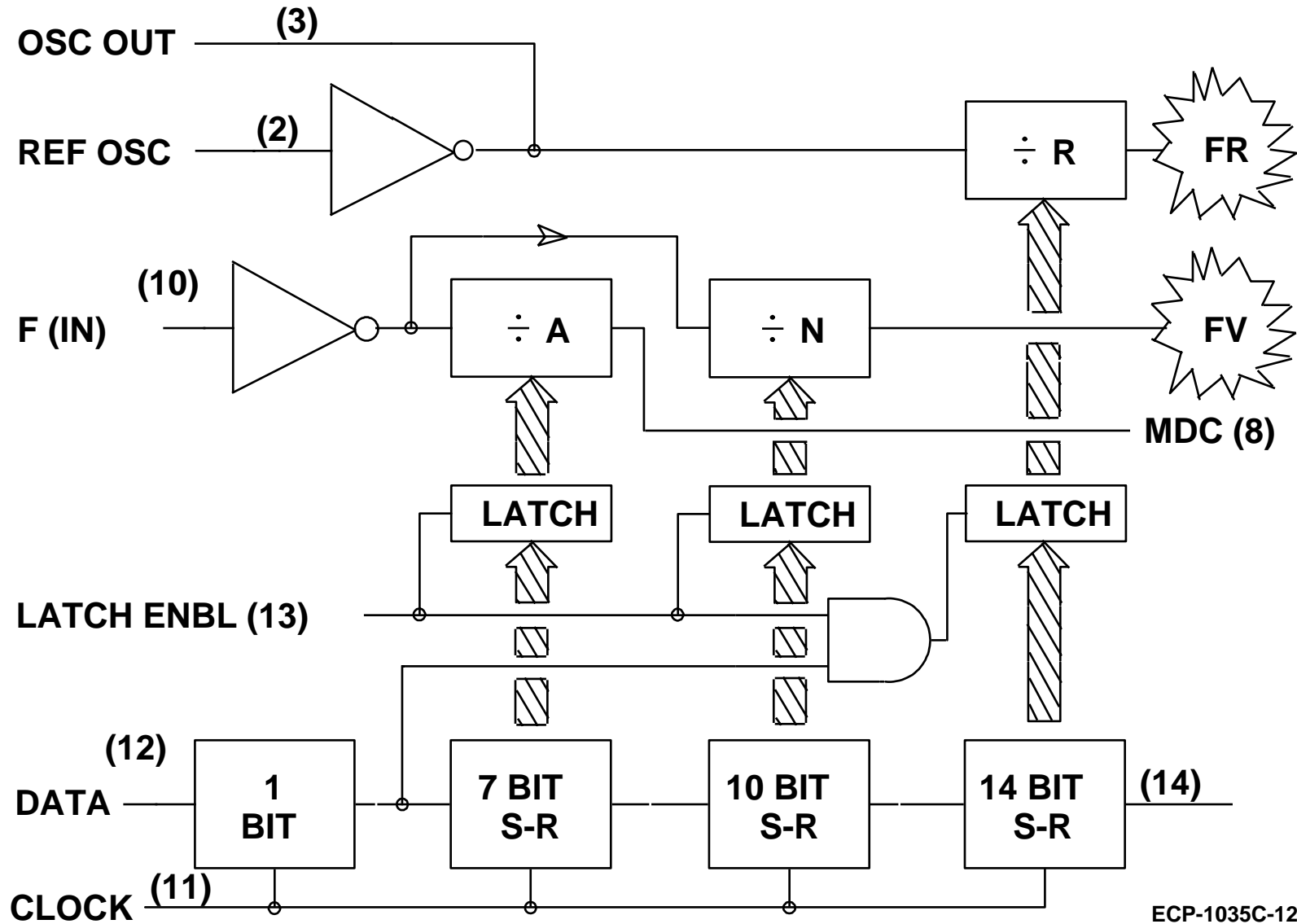
$$1 = \div 128$$
$$0 = \div 129$$

# Division Process

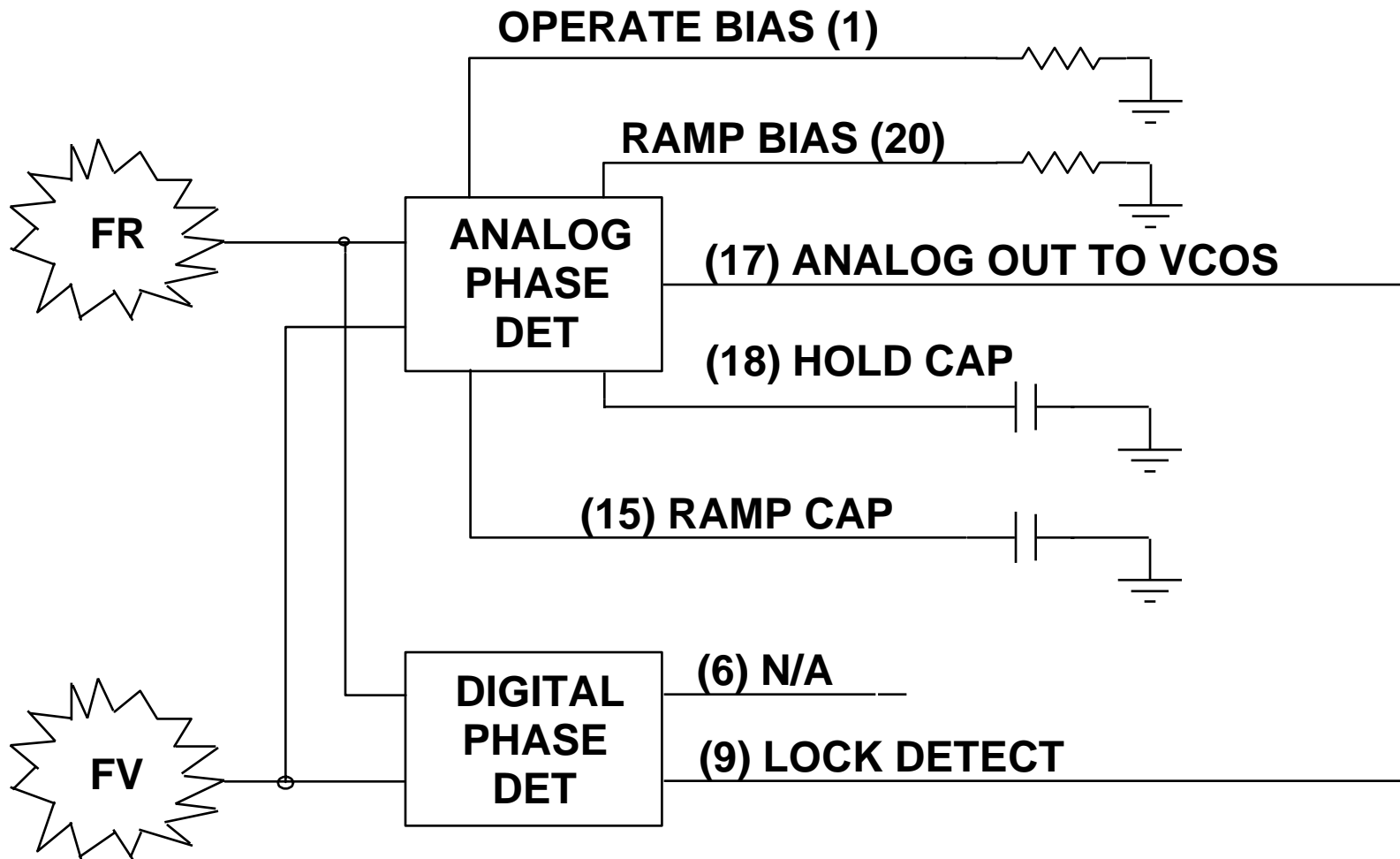


RECYCLE						
CUMULATIVE INPUTS	MDC	DIVISOR	÷ A CONTENT	÷ N CONTENT	OUT	
LOAD 0	0	129	108	503	0	
129 X 108 = 13932	1	128	0	395	0	
+ 128 X 395 = 50560	1	128	0	0	1	
<b>TOTAL = 64492</b>						

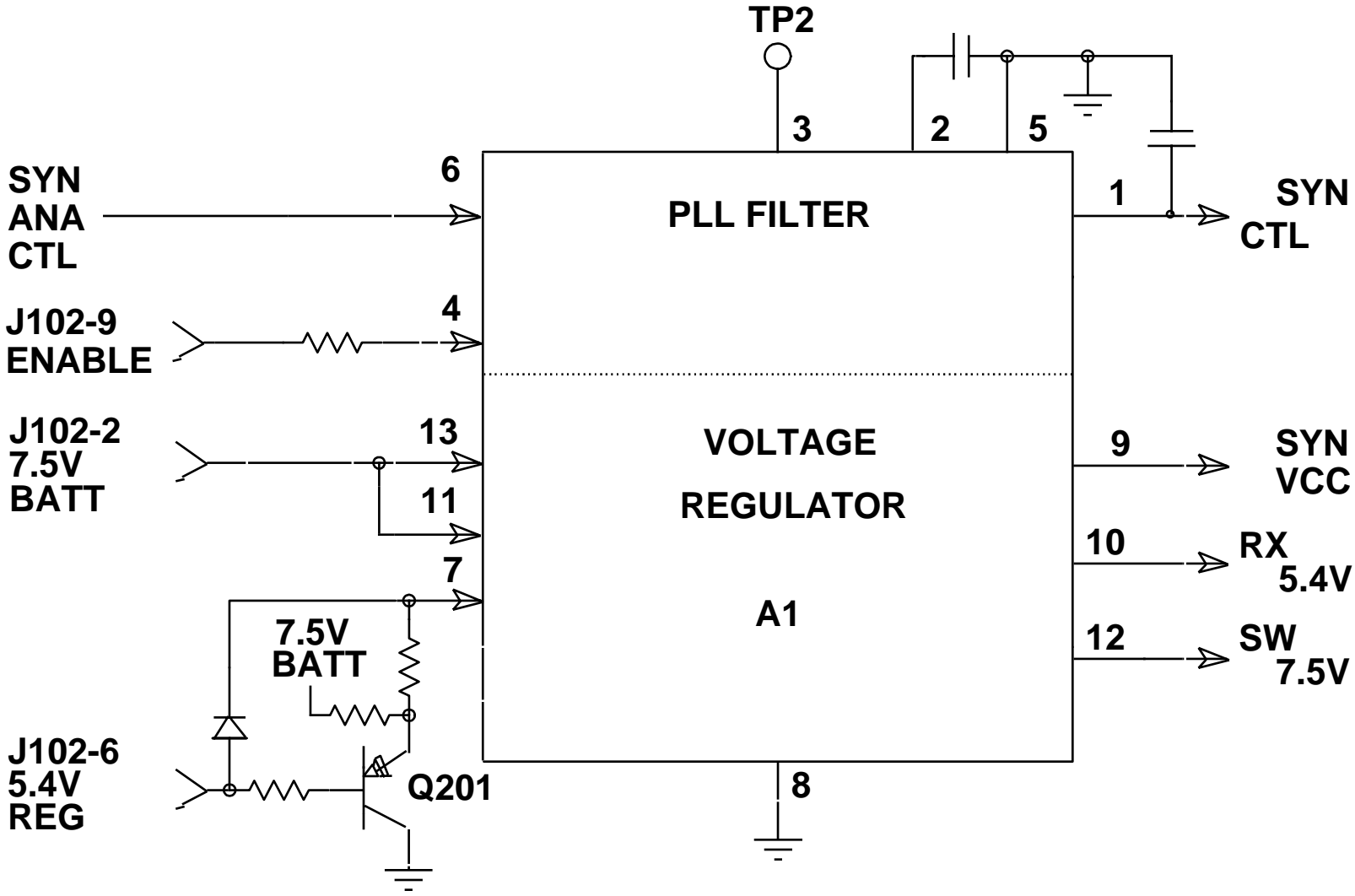
# Register Loading



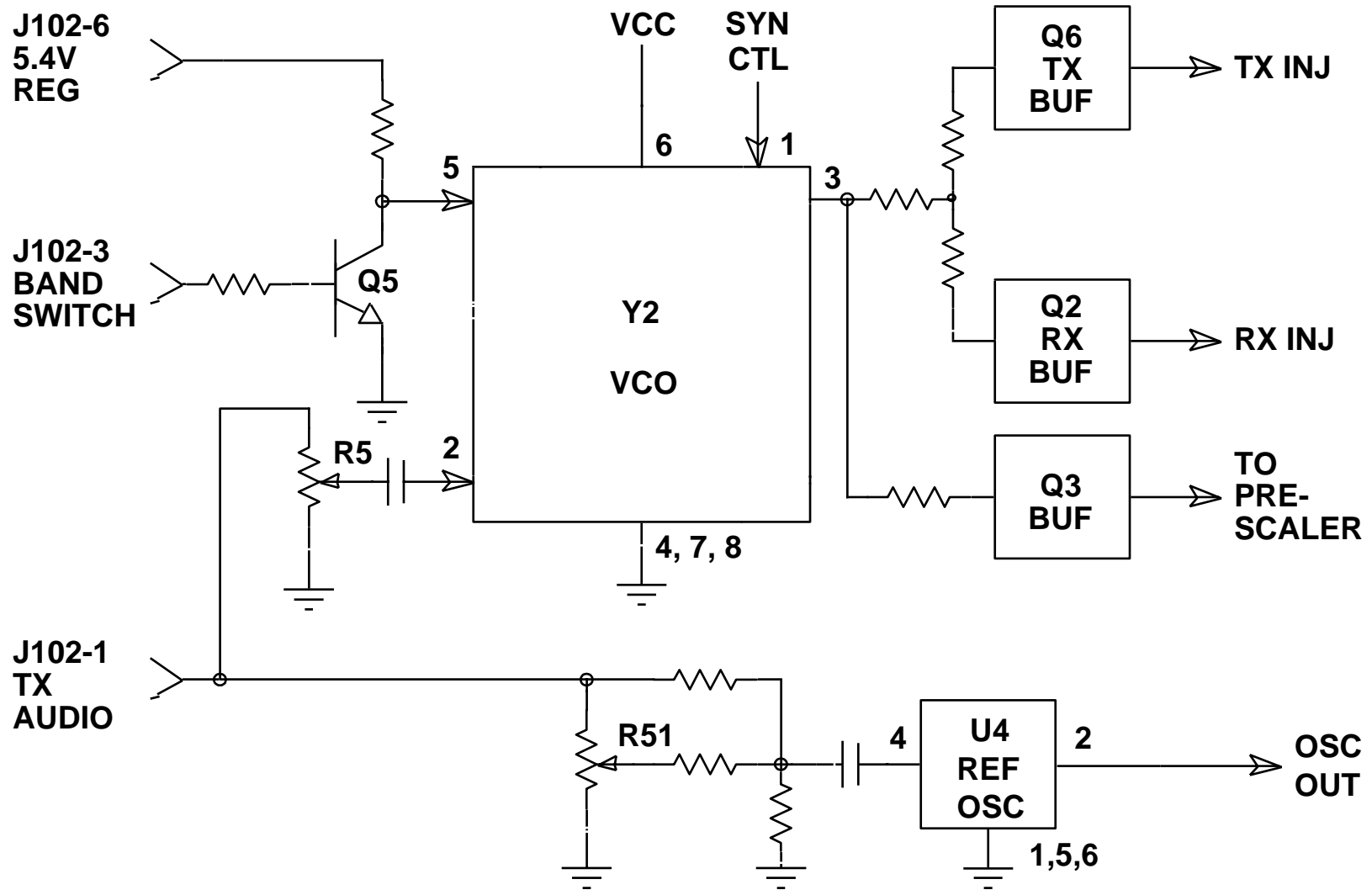
# Phase Detector Functions



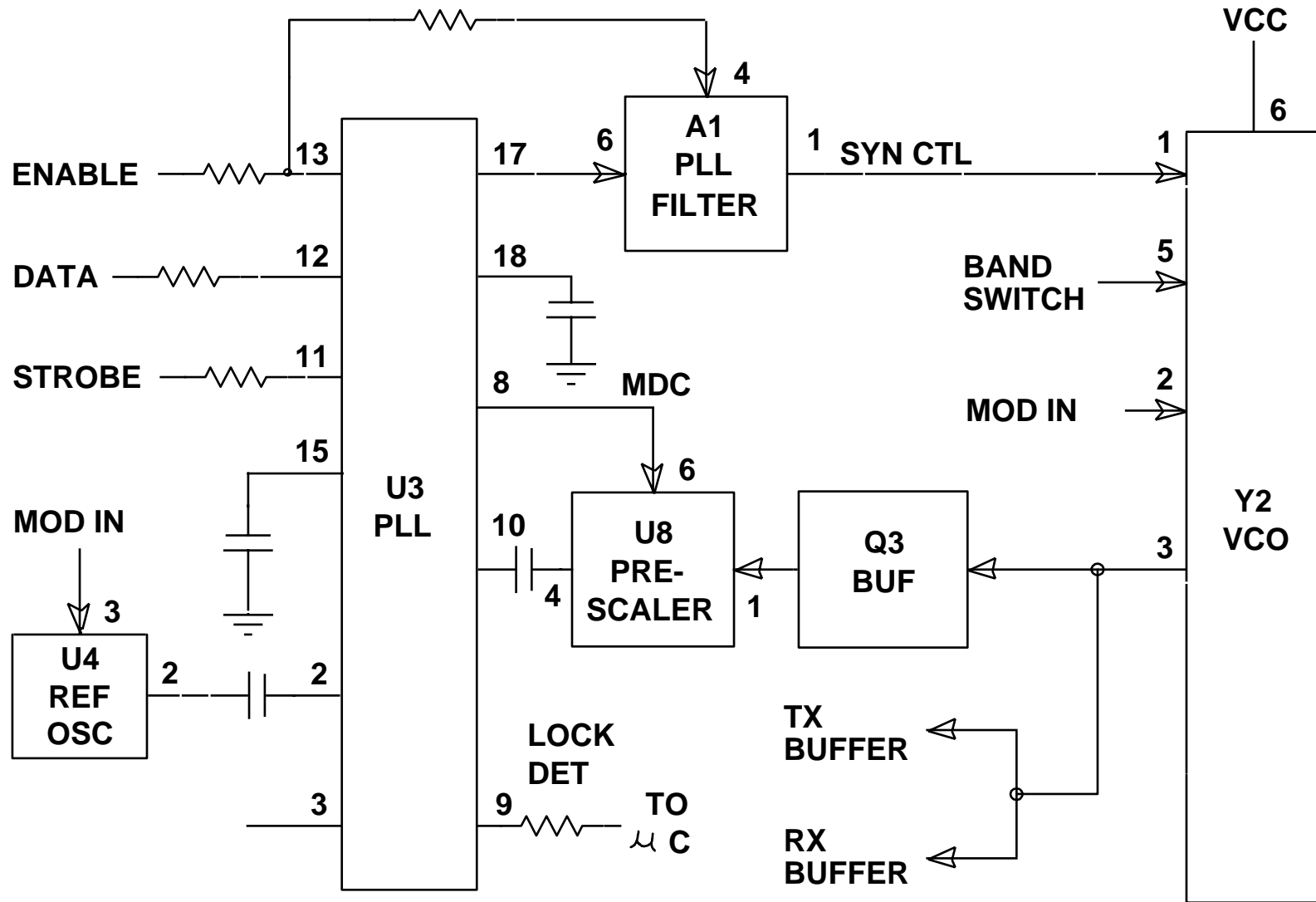
# Phase Lock Filter & Regulator



# Oscillators & Buffers

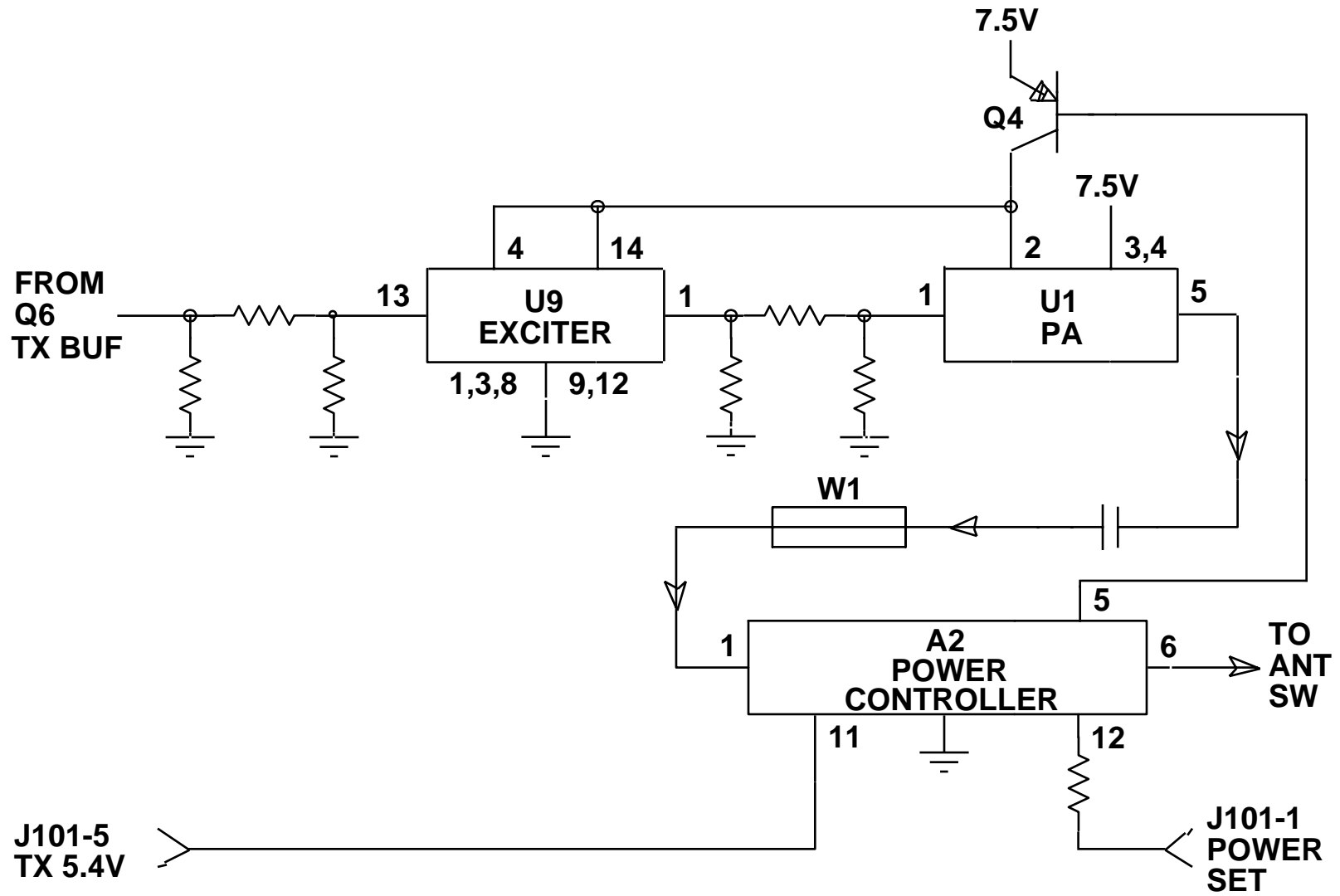


# Complete Synthesizer Block

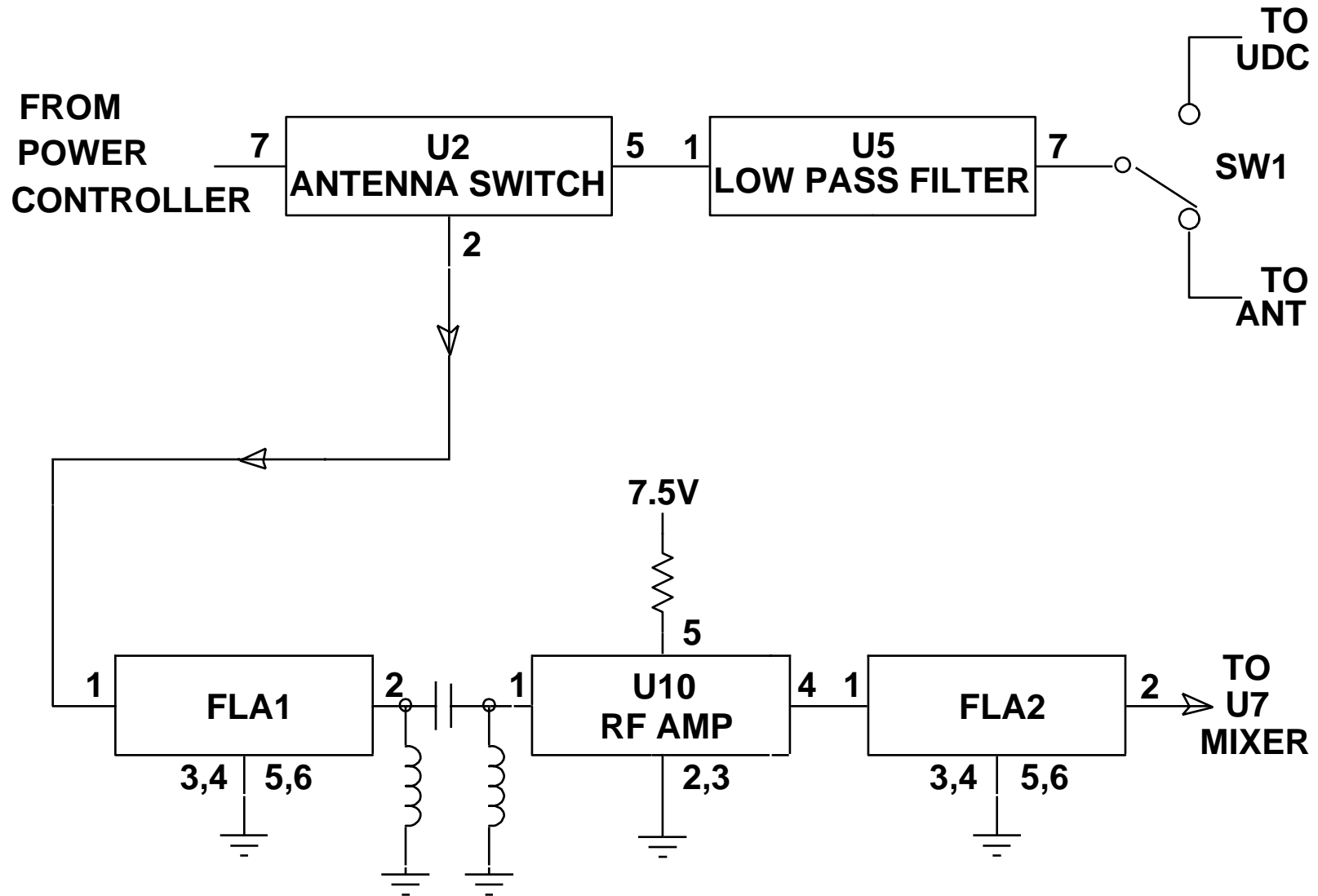




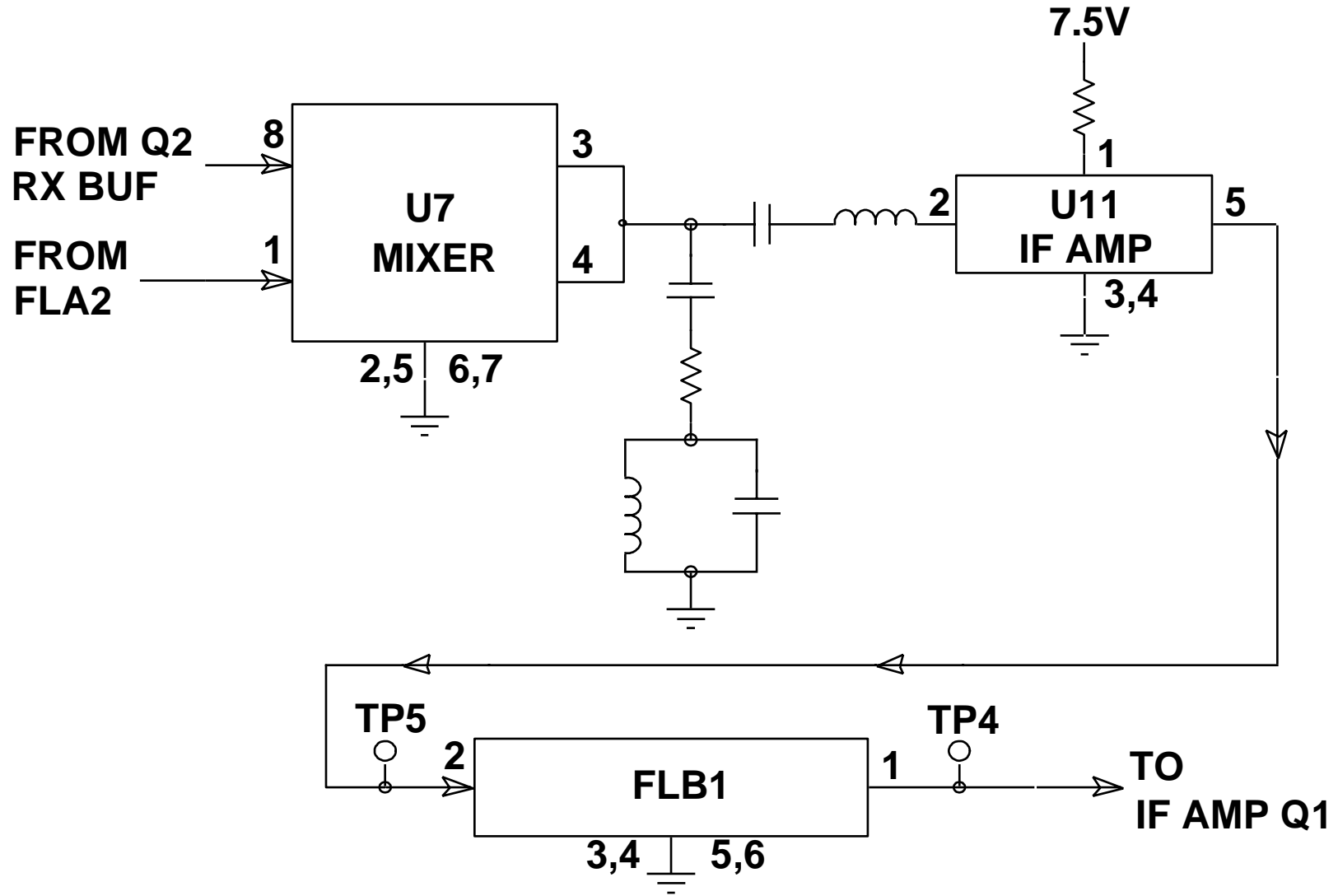
# Transmitter



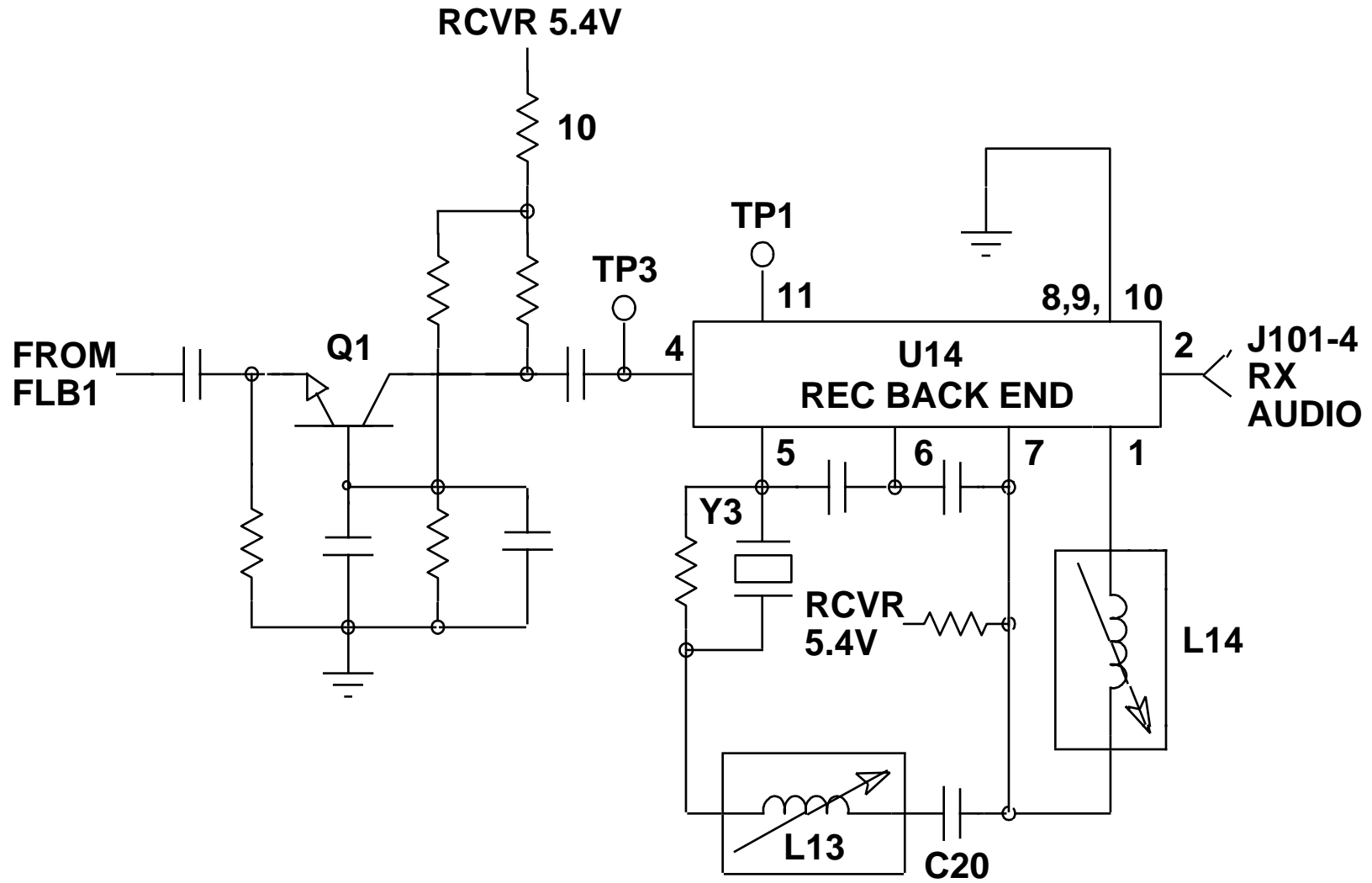
# Ant Switch & Receiver Front End



# First Mixer & IF Amplifier



# SECOND OSCILLATOR & MIXER



## Service Aids

<b>UDC To BNC Rf Adapter</b>	<b>-</b>	<b>K19/A4WX01566</b>
<b>RF Antenna Adapter</b>	<b>-</b>	<b>ST3559P2</b>
<b>RF/Logic Ext Cable</b>	<b>-</b>	<b>K19/A4WX01544</b>
<b>Dummy Battery</b>	<b>-</b>	<b>K19/A4WX01543</b>
<b>Test Box</b>	<b>-</b>	<b>TQ-0609</b>
<b>Prog Manual/Software</b>	<b>-</b>	<b>TQ3340</b>
<b>Programming Kit</b>	<b>-</b>	<b>TQ-3310</b>
<b>Programming Cable</b>	<b>-</b>	<b>TQ-3311</b>
<b>Tuning Tool</b>	<b>-</b>	<b>19B801640P1</b>
<b>Tuning Tool</b>	<b>-</b>	<b>ST2510</b>
<b>Front Cover Test Kit</b>	<b>-</b>	<b>SPK-9010</b>
<b>Front Cover Test Kit</b>	<b>-</b>	<b>SPK-9011</b>



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**ECP-1035C-22**