

# Ranger RCI-2970

## Documentation Project

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### PLL Alignment

#### [PLL Alignment Locations](#)

SETTINGS	CONNECTION	ADJUST	ADJUST FOR
<b>Remove TP1, TP2, TP3 Jumper PCB.</b>			
<b>VCO &amp; OSC:</b> Frequency: 28.0000 MHz MIC Gain: Fully counter-clockwise RF Power: Fully clockwise RF Gain: Fully clockwise Clarifier: 12 o'clock Vol : Comfortable level Squelch: Fully counter-clockwise Mode selector - AM	Disconnect shorting board from test points TP1, TP2 and TP3		
	Connect Freq. Counter to L61	<b>VC1</b>	Adjust for reading of 10.240MHz $\pm$ 10Hz.
	Connect Oscilloscope to L61	<b>L4</b>	Adjust for Max.
	Connect a Freq. Counter to L65	<b>VC2</b>	Adjust for 17.305MHz $\pm$ 10Hz.
	Connect a Freq. Counter to L65	<b>VR21</b>	Key Transmitter and adjust for 17.305MHz $\pm$ 10Hz.
	Connect Voltmeter to IC7 Pin3	<b>L21</b>	Adjust for 1.2VDC $\pm$ 1VDC.
	Connect Voltmeter to J13	<b>L17</b>	Adjust for 2.0VDC $\pm$ 1VDC.
	Connect Oscilloscope to L65	<b>L19</b>	Adjust for Max.
	Connect Freq. Counter to IC13 pin8	<b>L23</b>	Very carefully adjust for 11.350MHz $\pm$ 10Hz.
	Connect Oscilloscope to IC17 pin13	<b>L24</b> <b>L25</b>	Very carefully adjust and for best waveform
<b>AM TX OSC:</b> Same as above	Connect a frequency counter to cathode of D45	<b>L27</b>	Key transmitter and adjust for 10.6950 MHz $\pm$ 10Hz.
<b>USB TX OSC:</b> Adjust VR7 fully clockwise. Put mode selector on USB.	Leave frequency counter connected to D45	<b>L29</b>	Key transmitter and adjust for 10.6925 MHz $\pm$ 10Hz.
<b>LSB TX OSC:</b> Put mode selector in LSB. After adjustment return VR7 to approximate middle of rotation.	Leave frequency counter connected to D45	<b>L28</b>	Key transmitter and adjust for 10.6975 MHz $\pm$ 10Hz.
<b>Replace TP1, TP2, TP3 Jumper PCB.</b>			

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