BLOCK DIAGRAM OF WC2XSR/13 166.5 KC TRANSMITTER
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| 2664 KC VXO | →2664 KC→ | Divide by 2 | →1332 KC→ | Divide by 2 | →666 KC→ | Divide by 2 | →333 KC→ | Divide by 2 | 166.5 KC |

180 Degree Phase Splitter → 12 Volt Driver → Push-Pull Ultra-FET PA → Low-Pass Filter → Antenna or Load

Dry Contact Key → CW Keyer

2 KC Audio Control Tone → AF Tone to CW Converter

166.5 KC Sine Wave

50 or 75 Ohm Output
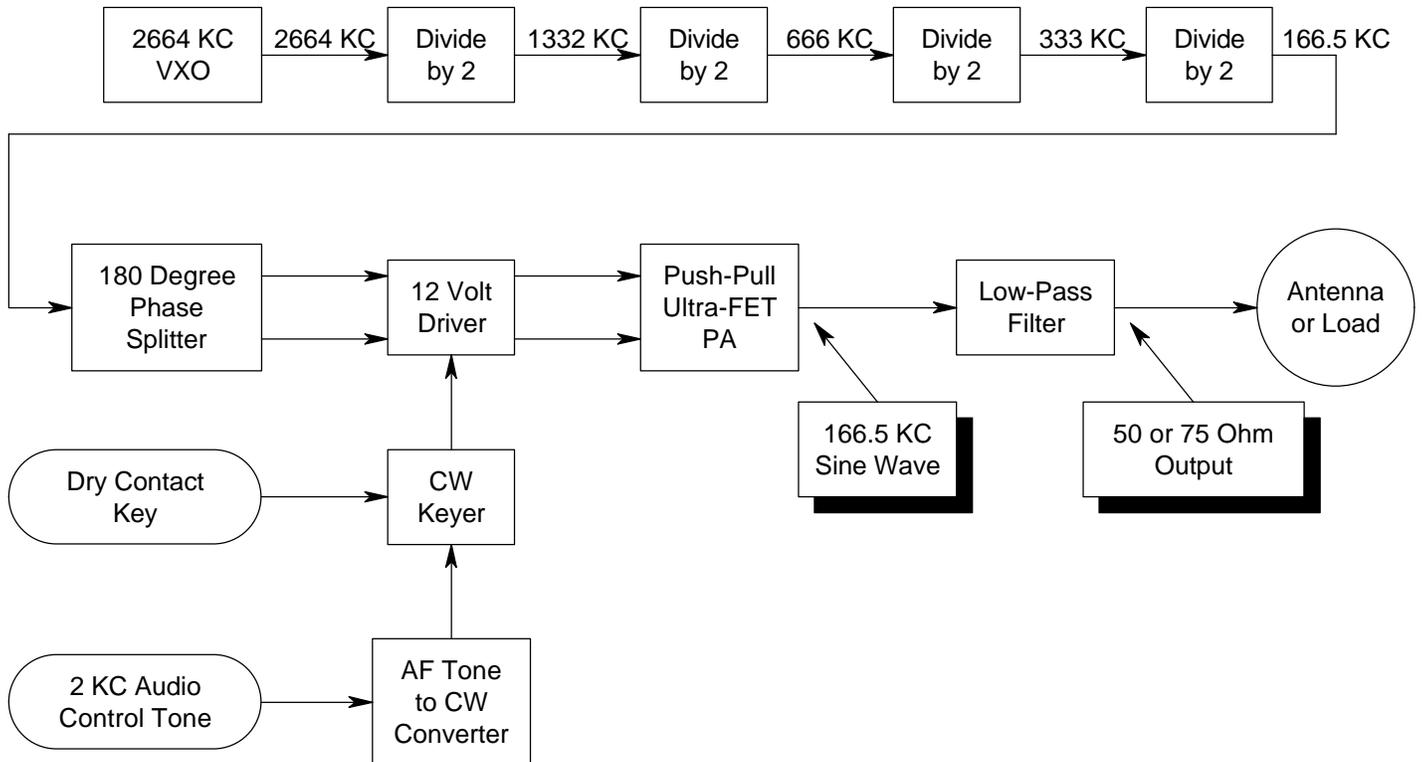
This description covers the CW only version of the WC2XSR transmitter.

Power supplies are not shown.

The transmitter starts with a crystal controlled oscillator operating at 16 times the carrier frequency.

Four divide-by-two stages follow the oscillator, and produce a 166.5 KC signal.

This 166.5 KC signal goes to a phase splitter that produces a pair of 166.5 KC square waves that are 180 degrees out of phase with each other.

These square waves are sent to a driver stage that boosts the signal level from TTL level to +12 volts.

The push-pull outputs from the driver stage go the gates of the Ultra-FET PA transistors.

The CW Keyer switches the driver stage output off and on in accordance with the state of an external dry-contact keying signal.

The Tone-to-CW Keyer converts an MCW signal to dry-contact signals which is sent to the CW Keyer. This allows the use of either MCW or a straight key to key the transmitter. Note that the use of MCW to key the transmitter does not transmit MCW, it simply keys the carrier on and off, just like a straight key.