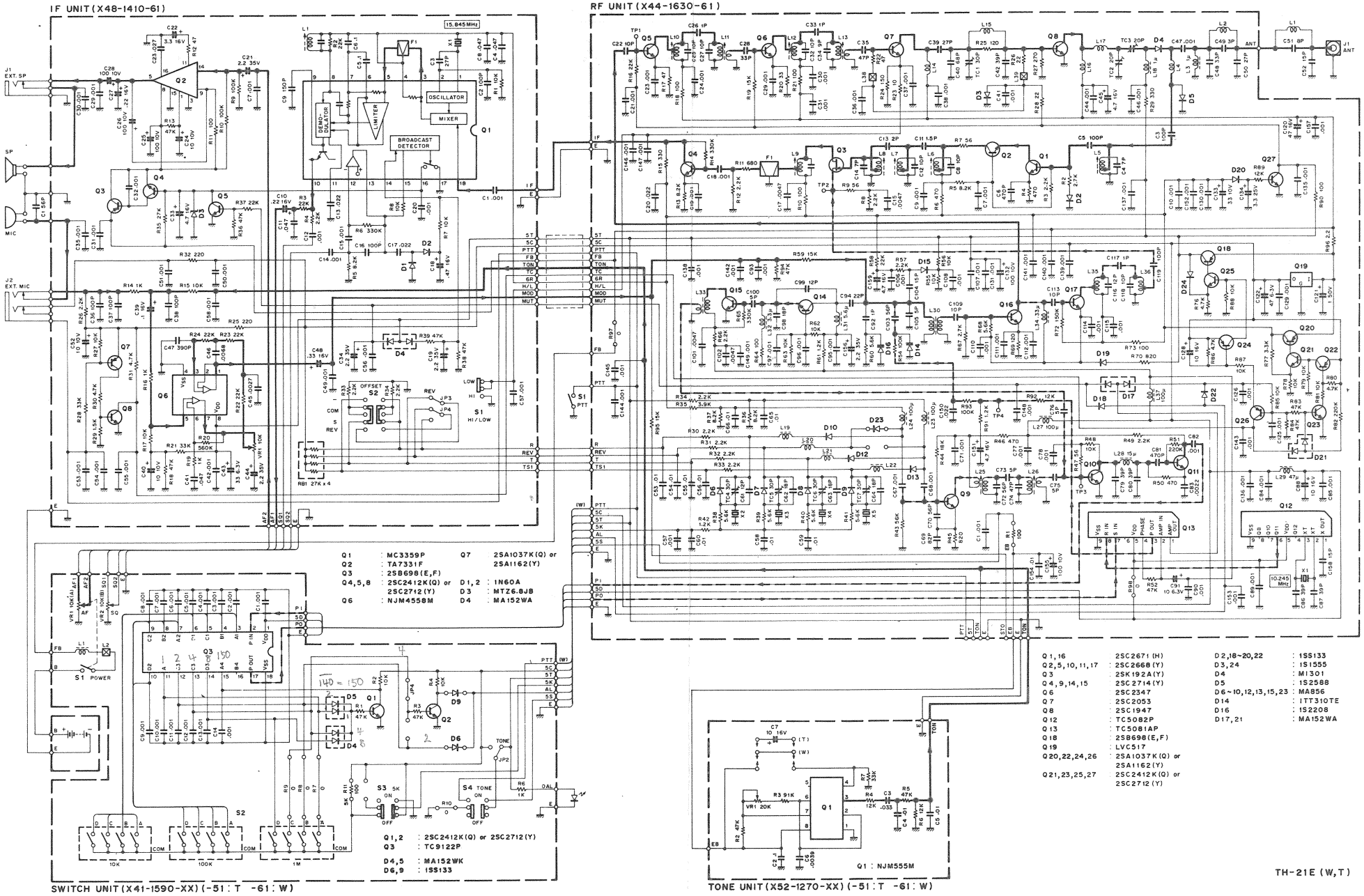TH-21 SCHEMATIC DIAGRAM