

Stage/Control**Function**

C 402, in the coupling circuit, filter out audio components so that the signal is primarily noise. X 409 amplifies the noise component and drives the voltage doubler, D 401, 402. When interstation noise is received the DC output of D 401/402 brings X 406 into conduction. This in turn, cuts off X 407 and the collector voltage of X 407 rises toward B+. The collector of X 407 is coupled to the base of X 408 through the Function Switch SW 3-1 in the MONO and AUTO positions. Thus X 408 turns on as X 407 turns off. The muting relay coil is in the collector circuit of X 408. When this relay energizes, the audio output of both channels is shorted to ground.

Muting Relay
Actuator
X 407, X 408

Muting for the
Detuned Condition
X 401, 402, 403,
404, 405

The muting relay is also actuated if a station is being received but there is a considerable tuning error. This muting circuit operates from the negative or positive output of the ratio detector when the received station is not at the center of the detector's S curve. DC output of the ratio detector, developed across C 321, is coupled to the gate of X 401.

The FET, X 401, is biased so that X 402 is ON and X 403 is off when there is zero DC at the ratio detector (correctly-tuned condition). As a result, X 404 is on and X 405 is off. Note that X 405 and X 406 share a common load. They act as an OR gate. If either X 405 or X 406 is off the muting relay will be de-energized. Thus, when the set is tuned correctly the muting system is inactive.

A positive or negative output of the ratio detector triggers the muting system as follows. Consider a positive input to the

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FET, X 401. The FET conducts more heavily, its drain voltage drops and X 402 cuts off. This makes X 404 cut off as X 404 can conduct only when X 402 is ON and X 403 is off.

If the set is detuned to produce a negative output, X 401 conducts less and both X 402 and X 403 come into conduction. In this case, as noted above, X 404 cuts off. Thus, X 404 cuts off if the output of the ratio detector is at its positive or negative peak. When X 404 cuts off, X 405 comes into conduction, and following the previously described action of X 407/408, the muting relay energizes.

Muting Level Adj.
X 410
VR 401

In addition to interstation and detune-muting, the muting relay is also actuated if signal level is below the value set by the front-panel muting control. This system operates from the DC output of the carrier level detectors D 208, 209. The positive voltage developed by D 208, 209 is applied to the base of X 410. This transistor is normally cut off, but if the DC output of D 208, 209 swings positive enough, X 410 conducts and X 405 cuts off. The later results in the release of the muting relay. The positive voltage required to turn on X 410 is determined by the setting of the MUTING control VR 401.

Muting Switch
SW 4

The muting system is disabled when the MUTING control is turned fully counterclockwise. In this case SW-4 closes putting a positive voltage at the base of X 407 through R 416. This turns on X 407 and keeps X 408 and the muting relay turned off.

Muting in the
Stereo
Position of the
Function Switch

When the Function Switch is in the STEREO position, X 408 is controlled by X 514. The latter is ON when 19-kHz pilot signals