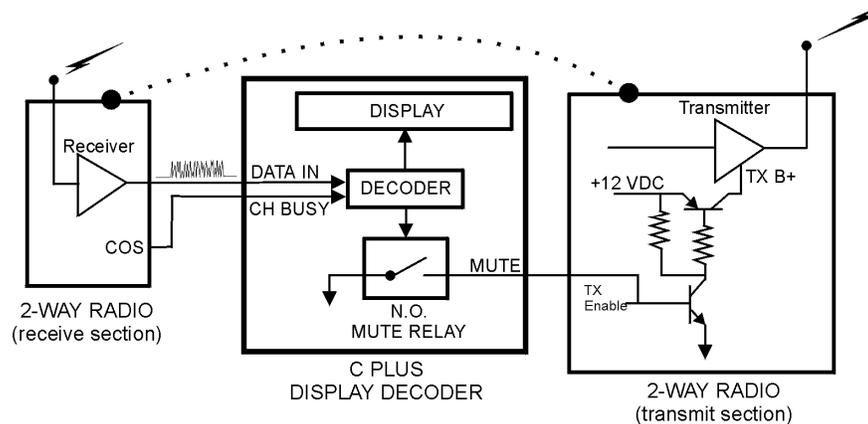# Repeater Access Control using COS Qualified Mute

The C Plus can be used to filter out potential repeater users that do not have a beginning send ANI data burst. COS Qualified mute is a feature that activates the mute relay until after an ANI data burst is received. Once a data burst is received, the relay relaxes until channel busy changes state. We will use this line to limit access.
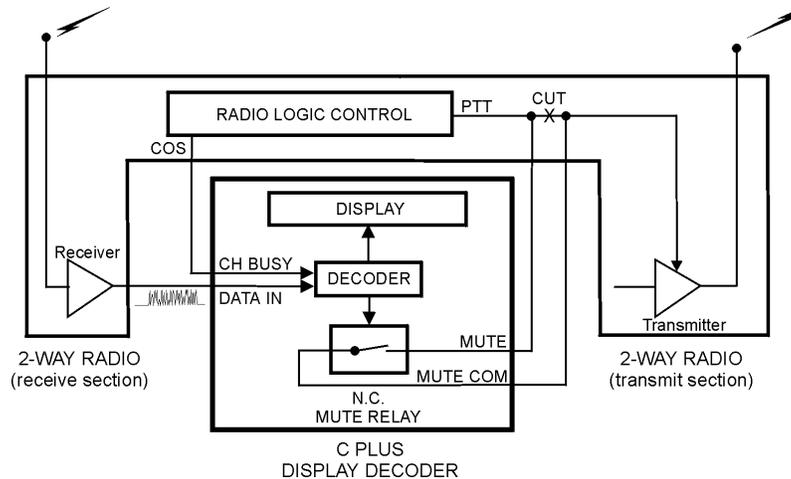
Enabling the Feature
To enable COS Qualified Mute as repeater control, the following steps must be taken:

1. The Channel Busy line of the C Plus must be attached to a point in the radio that changes state with carrier detect. This could be at the radio squelch gate, the audio amplifier mute line, or even an accessory connector with CSQ (carrier squelch) connectivity.

2. The Channel Busy line must be activated.

3. COS Qualified mute must be selected in the personality programming of the C Plus. This is available under *Select Mute Type*.

4. The mute relay output must be attached to a point in the repeater that when the relay is active, the transmitter will not respond to its key line. This could be a logic gate or the enable for the TX B+.

 It could also be used in series with the transmitter PTT to break the connection.

RADIO LOGIC CONTROL
PTT
CUT X
COS
DISPLAY
Receiver
CH BUSY
DECODER
DATA IN
MUTE
MUTE COM
N.C.
MUTE RELAY
2-WAY RADIO
(receive section)
Transmitter
2-WAY RADIO
(transmit section)
C PLUS
DISPLAY DECODER

Why it Works:
In COS Qualified mute mode, the mute relay becomes active with power-up.
It stays energized until after an ANI message is decoded. It then relaxes. In
this set-up, the relaxed relay allows the repeater transmitter to function. The
relay remains relaxed until the Channel Busy line changes state. At that
point, the relay re-energizes, locking out the repeater transmitter.

Additional Information:
This form of repeater control will allow anyone with any PTT ANI to use the
repeater. If this is not adequate, you can use the C Plus to allow only
authorized ANI's to use the repeater. This form of repeater control is called
the Authorize feature and requires the purchase of the Alias feature as well.

See Also:
COS Qualified Mute

Mute Feature

Channel Busy

Authorize