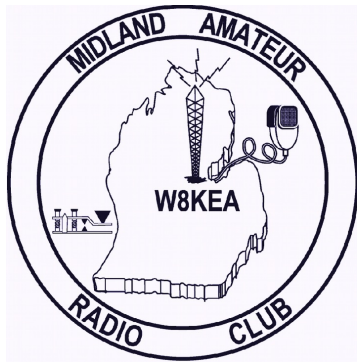




Using a Quadraplexer for Field Day

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Back Story – What's your Field Day Mission?

- Field days are operational business for us, Field-Nics are for fun and experimentation
- Our Field Day Mission is about the community, learning to operate together, simplify set-up and tear-down, eliminate operational interference, and keeping operators in their seat.
- Do you want antennas everywhere?
- Can you tolerate adjacent band interference?



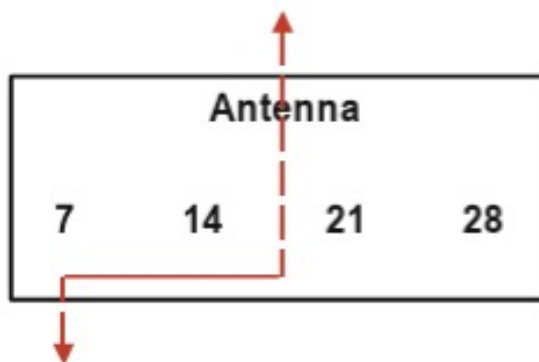
What is a Quadraplexer?

- In simple terms - The Quadraplexer is an RF Mixer
- This Mixer enables multi (4) -transceiver stations to share a single multi-band antenna
- Requires additional TX bandpass filtering for required isolation between RF channels



Quad Isolation Performance

Transmit	Receive level, db.:			
	7	14	21	28
7	≤ -0.15	≥ -40	≥ -50	≥ -45
14	≥ -40	≤ -0.25	≥ -30	≥ -25
21	≥ -30	≥ -30	≤ -0.3	≥ -30
28	≥ -50	≥ -50	≥ -30	≤ -0.25



Band to Band, Isolation from port to port (S21), worst possible numbers at the band edges rounded to 5db, Antenna and unused port terminated 50 ohms:

Low Band Systems - Bandpass Filters

- Band Pass Filters achieve 60 to 90 dB of out-of-band suppression that virtually eliminates out of band noise and interfering signals.



BP Filter Performance

Band pass filters "Perfo Box - 200Watts"

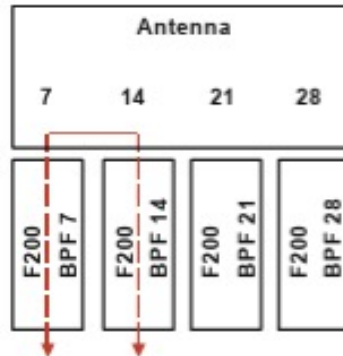
*Measured insertion losses and Band to Band rejection
serials: #203, #177, #191, #162, #171, #286*

Transmit:	Receive level, db.:					
	160	80	40	20	15	10
160	-0,28	-94	-92	-74	-72	-79
80	-82	-0,38	-71	-96	-76	-73
40	-81	-92	-0,38	-74	-99	-73
20	-95	-80	-83	-0,38	-85	-93
15	-76	-85	-68	-66	-0,52	-82
10	-93	-110	-76	-59	-63	-0,48

Quad and BP Filter Isolation - Combined

Band INPUT to Antenna OUTPUT, insertion loss (S11) and Band to Band Isolation from port to port (S21), with Band Pass Filters «Perfo Box-200», worst possible numbers at the band edges rounded to 5db, Antenna port and unused ports terminated 50 ohms:

Transmit	Receive level, db.:			
	7	14	21	28
7	-	≥ -95	≥ -100	≥ -100
14	≥ -100	-	≥ -100	≥ -100
21	≥ -90	≥ -80	-	≥ -95
28	≥ -100	≥ -90	≥ -75	-



Our Setup



Setup Sources

- Low Band Systems BP and Mixers (Bi, Tri, Quad) – DX Engineering
- Single Antenna – DX Commander Expedition – DX Engineering
- We have also used a folded terminated Dipole and a fan Dipole

So... How does the system perform??

- Perfect – 4A for 24 Hours
- Simple Set-up, one antenna
- Last Field Day we had husband and wife operators from Dallas come to see our set-up
- Other visitor operators have taken a ton of pictures

Questions??