



REPEATER TEST MAP RESULTS

GOAL - Verify Limit of a 4 watt HT to Transmit a 4-6 signal

COLOR KEY MAP

Draft Version 0.1 Not tested by peer review

RED CIRCLE PASSED Hear RCV and Repeater Connection Test

BLUE CIRCLE PASSED RAG CHEW TRX/RCV with good quality signal

Using a 4 Watt HT and Tactical 40-inch dual band antenna (10\$)

Blue Dotted on 695- Mobile test using 4 Watt HT and a Hustler 2 M 5/8 Mag mount. SWR 1.25 dBi 3.4

Thanks to K3DON – Rag Chew assist / Signal Quality information

Repeater W3FT test 2024

REFERENCE:

Title	Link
R-S-T	https://www.arrl.org/files/file/Public%20Service/fsd220.pdf
R-S-T	https://hamradiofornontechies.com/the-rst-system-signal-reporting/
Repeater information	https://www.repeater-builder.com/rbtip/index.html#main-index
Antenna Test Awesome work	https://theblackmoor.net/antenna-analysis/

The R-S-T System

Readability

- 1 Unreadable
- 2 Barely readable, occasional words distinguishable.
- 3 Readable with considerable difficulty.
- 4 Readable with practically no difficulty.
- 5 Perfectly readable.

Signal Strength

- 1 Faint signals, barely perceptible.
- 2 Very weak signals.
- 3 Weak signals.
- 4 Fair signals.
- 5 Fairly good signals.
- 6 Good signals.
- 7 Moderately strong signals.
- 8 Strong signals.
- 9 Extremely strong signals

Repeater W3FT test 2024 TEST PROCEDURE

Hear RCV

Setup HT for the following:

RT Systems Software:

Receive Frequency	Transmit Frequency	Offset Frequency	Offset Direction	Operating Mode	Name	Tone Mode	CTCSS	Rx CTCSS	DCS	Rx DCS	DCS Polarity	Tx Power	Skip	Busy Channel Lockout
146.67000	146.07000	600 kHz	Minus	FM	W3FT	Tone	107.2 Hz	107.2 Hz	023	023	Both N	High	<input type="checkbox"/>	Off

CHIRP:

Frequency	Name	Tone Mode	Tone	Tone Squelch	DTCS	RX DTCS	DTCS Polarity	Cross mode	Duplex	Offset	Mode	Skip	Power	BCL	PTT ID	PTT ID Code
146.670000	W3FT	Tone	107.2						-	0.600000	FM		High	Disabled	Off	1

The BARC W3FT Repeater:

Input frequency of 146.07 MHz

Output frequency 146.67 MHz (Chirp)

The PL tone is 107.2.

Note one can hand enter to the HT the **Output frequency 146.67 Mhz.**

STEPS:

TURN ON RADIO Listen to 146.67 MHz

BTN Baltimore Traffic Net broadcasts every night at 18:30 (6:30 PM) est.

Test passing is ability to hear the transmission signal quality 4-6 or better.

Repeater Connection Test

YouTube Vid in action.

https://youtu.be/mswXsSplI_g?si=DE8e1NXspNyqjFxr

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Input frequency of 146.07 MHz

Output frequency 146.67 MHz (CHIRP)

The PL tone is 107.2.

Repeater W3FT test 2024

STEPS:

TURN ON RADIO

Set up for W3FT Repeater.

Open Squelch (MON button)

Listen to make sure no one is on.

If repeater is clear,

PTT Push to talk, hold one half second

Say call sign pause TEST Release PTT

If repeater activates Squelch Test PASSES

Repeater Signal Quality Test

YouTube Vid in action.

<https://youtu.be/YpJUBEIULLU?si=-EBRti-0uzXvPVJJ>

Setup HT for the following:

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Input frequency of 146.07 MHz

Output frequency 146.67 MHz (CHIRP)

The PL tone is 107.2.

STEPS:

TURN ON RADIO

Set up for W3FT Repeater.

Open Squelch (MON button)

Listen to make sure no one is on.

If repeater is clear,

PTT Push to talk, hold **one half second**

Say **call sign** pause **Listening** Release PTT

Hopefully someone responds and you can get an idea of the signal quality

Ask for it.

Repeater W3FT test 2024

(My Method: 2 radios one to transmit one to receive then use a camera to record the signal meter and sound for a quality compare)

Test passing is ability to hear the transmission signal quality 4-6 or better.

OR the receiving person report a R-S of 4-6 or better.

From my own results:

- ❖ Stock is ok but need to be closer to TRX. (not tested yet for the signal quality part)
- ❖ Receive is 10 Miles from W3FT. As far as I tested – Finksberg MD mobile 23 miles.

- ❖ A 40-inch dual band folding antenna was 10 miles for transmit. 2.5 SWR 2 M and SWR 1.2 on 70 cm.
- ❖ 70 cm Stock antennas have lower SWR than the 2 M band
- ❖ 2M hustler 5/8 I can hear 20 miles away from Towson on Route 140 in Finksburg