

Charlestown Amateur Radio Club

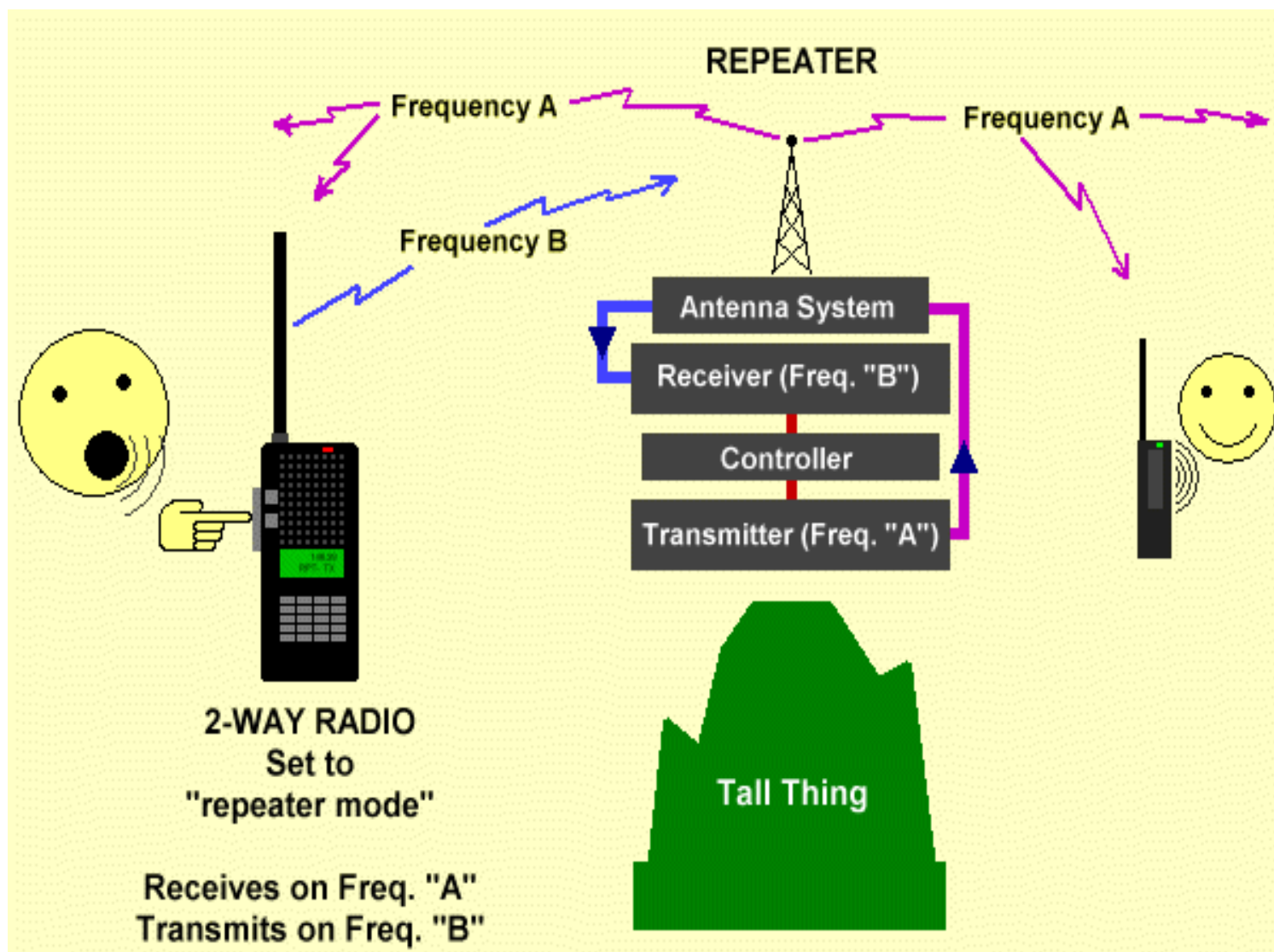
Getting On The Air From Your Charlestown
Apartment

Getting on the air from your Charlestown Apartment

- Challenges:
 - Steel and concrete buildings – tend to inhibit radio communications
- More successful on:
 - Upper floors
 - Near a window or balcony

With a VHF/UHF hand held radio

- Analog FM through a local repeater:
 - Columbia
 - Curtis Bay
 - Millersville
 - Annapolis
- Need to program repeater receive and transmit frequencies and Continuous Tone Coded Squelch System frequencies (if used)
- Good sources for this information are Repeaterbook or Rfinder
- Many local repeaters are linked via telephone, internet or radio



Baltimore County, , Maryland Amateur Radio Repeaters

27 REPEATERS FOUND IN BALTIMORE COUNTY

+ = On-Air
 ✘ = Off-Air
 ● = Testing
 = Unknown

Click on the frequency for additional details.

Click on a header to sort. **Note:** Sorting does not carry through to exports!

Frequency	Offset	Tone Up / Down	Location	County	Call	Use	Modes	
145.1400	-0.6 MHz		Towson	Baltimore	W3DHS	OPEN	DSTAR	+
145.1900	-0.6 MHz	110.9	Cockeysville	Baltimore	K3NXU	OPEN	FM	+
146.6700	-0.6 MHz	107.2	Towson	Baltimore	W3FT	OPEN	FM	+
147.0300	+0.6 MHz	156.7	Towson	Baltimore	WB3DZO	OPEN	FM	+
147.2400	+0.6 MHz	123.0 / 123.0	Baltimore, Kenwood High School	Baltimore	W3PGA	OPEN	FM Fusion	+
147.3450	+0.6 MHz	192.8	Dundalk	Baltimore	N3EST	OPEN	FM	+
223.8400	-1.6 MHz		Perry Hall	Baltimore	W3JEH	OPEN	FM	
224.6800	-1.6 MHz		Baltimore	Baltimore	KS3L	OPEN	FM	+
224.8000	-1.6 MHz		Randallstown	Baltimore	WB3DZO	OPEN	FM	✘
224.9600	-1.6 MHz		Baltimore	Baltimore	WB3DZO	OPEN	FM	+

With a VHF/UHF hand held radio

- Digital voice modes through a local repeater:
- Digital Mobile Radio (DMR) – adapted from commercial use
 - Towson
 - Jessup
- System Fusion – proprietary Yaesu technology
 - Columbia
- D-Star – proprietary Icom technology
 - Towson
- P-25 – national public safety standard
 - Ashton
- NXDN – proprietary Kenwood technology – None in MD

With a VHF/UHF hand held radio and digital hotspot

- Raspberry Pi computer with multimedia digital voice modem (MMDVM) running Pi-Star software
- Requires internet access – CCI-Portal
- Modes supported include DMR, Fusion, D-Star, NXDN, P25 and cross mode
- How it works: radio transmits to hotspot, hotspot puts the digital signal into talk group or rooms via the internet. Other hotspots or repeaters in that talk group or room can receive and converse in the opposite direction.

Pi-Star Digital Voice Dashboard for KO3F

Dashboard | Admin | Live Logs | Power | Update | Configuration

Gateway Hardware Information

Hostname	Kernel	Platform	CPU Load	CPU Temp
pi-star	5.10.103-v7+	Raspberry Pi 3 Model B Rev 1.2	0.91 / 1 / 1	47.2°C / 117°F

Service Status

MMDVMHost	DMRGateway	YSFGateway	YSFParrot	P25Gateway	P25Parrot
DStarRepeater	ircDDBGateway	TimeServer	PiStar-Watchdog	PiStar-Remote	PiStar-Keeper

Modes Enabled

D-Star	DMR
YSF	P25
YSF XMode	NXDN
DMR XMode	POCSAG

Network Status

D-Star Net	DMR Net
YSF Net	P25 Net
YSF2DMR	NXDN Net
YSF2NXDN	YSF2P25
DMR2NXDN	DMR2YSF

Radio Info

Trx	Listening
Tx	434.000000 MHz
Rx	439.000000 MHz
FW	HS_Hat:v1.5.2
TCXO	14.7456 MHz

DMR Repeater

DMR ID	3124270
DMR CC	1
TS1	enabled
TS2	enabled
DMR Master	
BM 3104 United St..	

Active BrandMeister Connections

BrandMeister Master	Repeater ID	Static TGs	Dynamic TGs
BM 3104 United States	3124270	TG3100(2) TG3124(1) TG31242(2)	None

Gateway Activity

Time (EST)	Mode	Callsign	Target	Src	Dur(s)	Loss	BER
08:36:35 Nov 7th	DMR TS2	K04USU (GPS)	TG 3100	Net	4.8	0%	0.0%
08:34:42 Nov 7th	DMR TS2	K4MFO (GPS)	TG 3100	Net	0.5	0%	0.0%
08:33:32 Nov 7th	DMR TS2	W3CLA (GPS)	TG 3100	Net	0.5	0%	0.0%
08:25:46 Nov 7th	DMR TS2	KE8VSO (GPS)	TG 3100	Net	1.2	0%	0.0%
08:19:51 Nov 7th	DMR TS2	AI5GJ (GPS)	TG 3100	Net	0.5	0%	0.0%
08:17:12 Nov 7th	DMR TS2	KD8IDK (GPS)	TG 3100	Net	4.5	32%	0.4%
08:16:40 Nov 7th	DMR TS2	N0LHD (GPS)	TG 3100	Net	14.2	5%	0.3%
08:10:45 Nov 7th	DMR TS2	KE8TPU (GPS)	TG 3100	Net	0.5	0%	0.0%
08:10:09 Nov 7th	DMR TS2	KF5MLP (GPS)	TG 3100	Net	0.5	0%	0.0%
08:08:55 Nov 7th	DMR TS2	W0RPG (GPS)	TG 3100	Net	0.5	0%	0.0%
08:04:50 Nov 7th	DMR TS2	W7IF (GPS)	TG 3100	Net	1.2	0%	0.0%
07:54:33 Nov 7th	DMR TS2	KE0MQF (GPS)	TG 3100	Net	2.0	54%	0.0%
07:48:09 Nov 7th	DMR TS2	K0BOW (GPS)	TG 3100	Net	0.8	0%	0.0%
07:46:25 Nov 7th	DMR TS2	AK9RT (GPS)	TG 3100	Net	1.6	0%	0.0%
07:46:03 Nov 7th	DMR TS2	NY4Z (GPS)	TG 3100	Net	0.8	0%	0.0%
07:41:04 Nov 7th	DMR TS2	KB8EMD (GPS)	TG 3100	Net	0.5	25%	0.0%
07:37:14 Nov 7th	DMR TS2	K1EEA (GPS)	TG 3100	Net	0.5	0%	0.0%
07:35:32 Nov 7th	DMR TS2	WB5SLA (GPS)	TG 3100	Net	3.0	0%	0.0%
07:22:46 Nov 7th	DMR TS2	K1NLS (GPS)	TG 3100	Net	0.5	0%	0.0%
07:22:34 Nov 7th	DMR TS2	KF0IDK (GPS)	TG 3100	Net	0.5	0%	0.0%

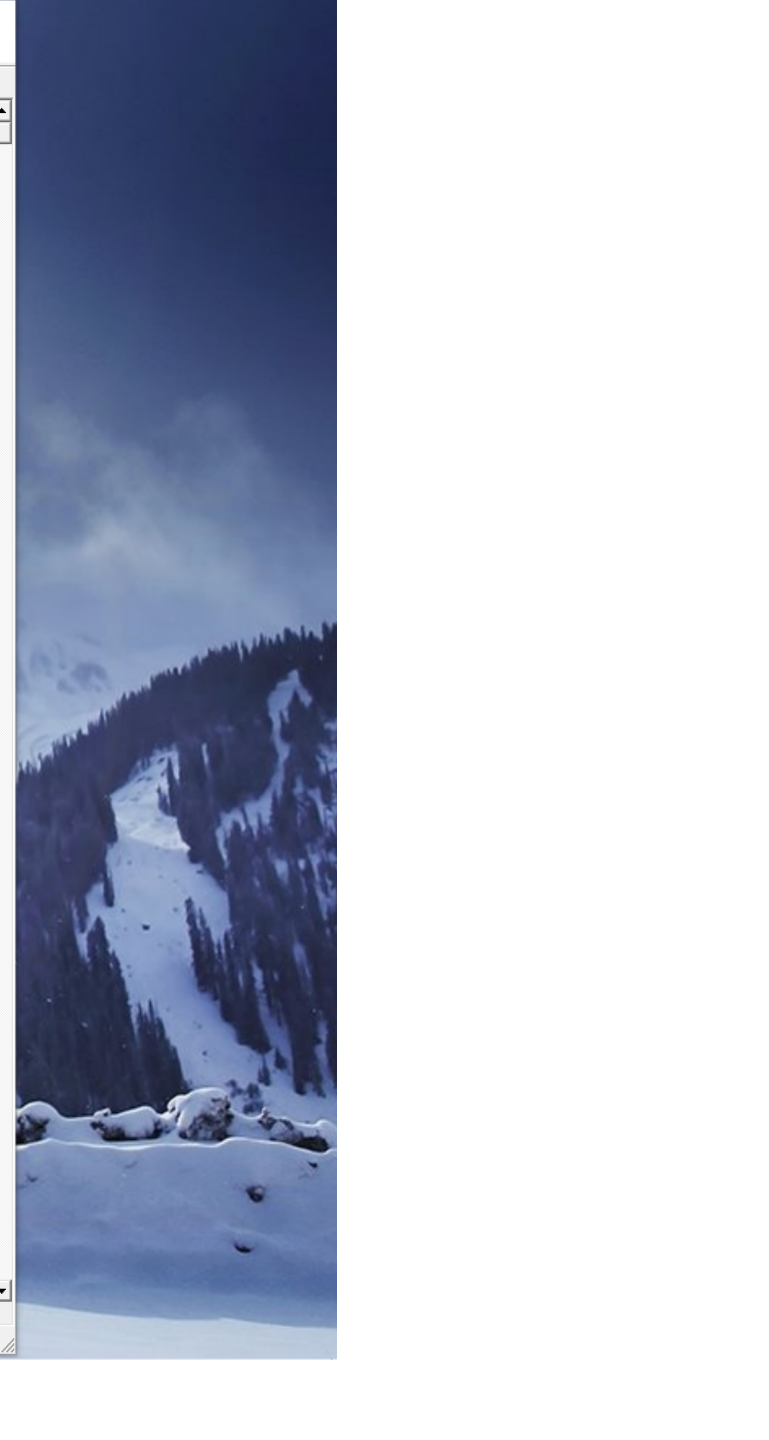
Local RF Activity

Time (EST)	Mode	Callsign	Target	Src	Dur(s)	BER	RSSI
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- D868UVE
 - Public
 - Channel
 - Zone
 - Scan List
 - FM
 - Auto Repeater Offset F
 - Basic information
 - Optional Setting
 - Alarm Setting
 - Local Information
 - Hot Key
 - Digital
 - Analog

No.	Receive Frequency	Transmit Frequency	Channel Type	Power	Band Width	TCSS/DC Decode	TCSS/DC Encode	Channel Name	Contact	Radio ID	Optional Signal
1	434.00000	439.00000	D-Digital	Low	12.5K	Off	Off	BM MD	BM MD	KO3F	
2	147.24000	147.84000	A-Analog	Turbo	25K	123.0	123.0	W3PGA	TAC 310	KO3F	
3	147.07500	147.67500	A-Analog	Turbo	25K	Off	107.2	W3VPR-CB	TAC 310	KO3F	
4	146.80500	146.20500	A-Analog	Turbo	25K	Off	107.2	W3CU	TAC 310	KO3F	
5	434.00000	439.00000	D-Digital	Low	12.5K	Off	Off	Dscnct Sit 1	Disconnect	KO3F	
6	434.00000	439.00000	D-Digital	Low	12.5K	Off	Off	Dscnct Sit 2	Disconnect	KO3F	
7	434.00000	439.00000	D-Digital	Low	12.5K	Off	Off	MS 310	TAC 310	KO3F	
8	434.00000	439.00000	D-Digital	Low	12.5K	Off	Off	MS 311	TAC 311	KO3F	
9	434.00000	439.00000	D-Digital	Low	12.5K	Off	Off	MS 312	TAC 312	KO3F	
10	434.00000	439.00000	D-Digital	Low	12.5K	Off	Off	MS BM WW	BM WW	KO3F	
11	434.00000	439.00000	D-Digital	Low	12.5K	Off	Off	MS BM NA	BM North America	KO3F	
12	434.00000	439.00000	D-Digital	Low	12.5K	Off	Off	MS BM USA	BM USA	KO3F	
13	147.13500	147.73500	A-Analog	Turbo	25K	156.7	156.7	K3CUJ	TAC 310	KO3F	
14	434.00000	439.00000	D-Digital	Low	12.5K	Off	Off	MS BM Parrot	BM Parrot	KO3F	
15	449.67500	444.67500	A-Analog	Turbo	25K	Off	167.9	N3ST	TAC 310	KO3F	
16	441.40000	446.40000	D-Digital	Turbo	12.5K	Off	Off	WR3IRS TG2	TG2	KO3F	
17	441.40000	446.40000	D-Digital	Turbo	12.5K	Off	Off	WR3IRS MD	BM MD	KO3F	
18	442.71250	447.71250	D-Digital	Turbo	12.5K	Off	Off	KA3LAO TG2	TG2	KO3F	
19	442.71250	447.71250	D-Digital	Turbo	12.5K	Off	Off	KA3LAO MD	BM MD	KO3F	
20	434.00000	439.00000	D-Digital	Low	12.5K	Off	Off	Reboot	Reboot	KO3F	
21	434.00000	439.00000	D-Digital	Low	12.5K	Off	Off	Shutdown	Shutdown	KO3F	
22	434.00000	439.00000	D-Digital	Low	12.5K	Off	Off	Hurricane Net	Hurricane Net	KO3F	
23	449.57500	444.57500	A-Analog	Turbo	25K	123.0	123.0	W3PGA-U	TAC 310	KO3F	
24	449.12500	444.12500	A-Analog	Turbo	25K	Off	107.2	W3CU-U	TAC 310	KO3F	
25	449.47500	444.47500	A-Analog	Turbo	25K	Off	156.7	K3CUJ-U	TAC 310	KO3F	
26	147.00000	146.40000	A-Analog	Turbo	25K	Off	156.7	K3WX	TAC 310	KO3F	
27											
28	442.23750	447.23750	D-Digital	Turbo	12.5K	Off	Off	K3UCB TG2	TG2	KO3F	
29	156.45000	156.45000	A-Analog	High	25K	Off	Off	Ch 9	TAC 310	KO3F	
30	156.65000	156.65000	A-Analog	High	25K	Off	Off	Ch 13	TAC 310	KO3F	
31	156.80000	156.80000	A-Analog	High	25K	Off	Off	Ch 16	TAC 310	KO3F	
32	157.05000	157.05000	A-Analog	High	25K	Off	Off	Ch 21A	TAC 310	KO3F	
33	157.10000	157.10000	A-Analog	High	25K	Off	Off	Ch 22A	TAC 310	KO3F	
34	157.15000	157.15000	A-Analog	High	25K	Off	Off	Ch 23A	TAC 310	KO3F	
35	156.42500	156.42500	A-Analog	High	25K	Off	Off	Ch 68	TAC 310	KO3F	
36	162.40000	162.40000	A-Analog	High	25K	Off	Off	Weather 162.400	TAC 310	KO3F	
37	162.42500	162.42500	A-Analog	High	25K	Off	Off	Weather 162.425	TAC 310	KO3F	
38	162.45000	162.45000	A-Analog	High	25K	Off	Off	Weather 162.450	TAC 310	KO3F	
39	162.47500	162.47500	A-Analog	High	25K	Off	Off	Weather 162.475	TAC 310	KO3F	
40	162.50000	162.50000	A-Analog	High	25K	Off	Off	Weather 162.500	TAC 310	KO3F	
41	162.52500	162.52500	A-Analog	High	25K	Off	Off	Weather 162.525	TAC 310	KO3F	
42	162.55000	162.55000	A-Analog	High	25K	Off	Off	Weather 162.550	TAC 310	KO3F	
43	442.23750	447.23750	D-Digital	Turbo	12.5K	Off	Off	K3UCB MD	BM MD	KO3F	
44	442.30000	447.30000	A-Analog	Turbo	25K	107.2	107.2	KB3CMA	TAC 310	KO3F	
45	146.76000	146.16000	A-Analog	Turbo	25K	107.2	107.2	WA3DZD	TAC 310	KO3F	
46	444.00000	449.00000	A-Analog	Turbo	25K	107.2	107.2	WA3DZD-U	TAC 310	KO3F	
47	156.47500	156.47500	A-Analog	High	25K	Off	Off	Ch 69	TAC 310	KO3F	



With computer or smartphone

- Echolink – smart phone or PC app that takes voice signal from phone to the internet and then on to a repeater – No additional equipment is needed
- Allstar network – nationwide network of analog FM repeaters that can also be accessed via computer either PC or Allstar node (similar to MMDVM hotspot)

7:15



K3HRT-R

AARC (W3VPR) MD

Station K3HRT-R
Odenton, MD
echolink@w3vpr.org

AARC W3VPR Linked Repeaters

147.075 PL:107.2 Curtis Bay, MD
147.105 PL:107.2 Davidsonville, MD
444.400 PL:107.2 Davidsonville, MD

 Transmit

 End



QSO



Text



Stations



Favorites



Settings

Conclusions

- Getting on the air from your apartment is feasible with a VHF/UHF hand held radio - especially if you are on an upper floor and/or have a window
- You are more likely to be successful using integrated radio/internet technology with a VHF/UHF hand held radio or smart phone
- Its important to note that at minimum a Technician level license is needed