



– Linking Repeaters and VOIP



AllStarLink / Asterisk

- AllStarLink (Allstar) is a world wide network of Amateur Radio repeaters, remote base stations and hot spots, collectively referred to as nodes, accessible to each other via the Internet and/or private IP networks.
- Allstar software runs on a dedicated Linux computer (including the Raspberry Pi) that you host at your home, radio site, clubhouse, school, university, workplace, or computer centre.
- Allstar is based on the open source Asterisk Private Branch Exchange (PBX) and is released under the GNU GPL and is free for anyone to use.
- The core of AllStarLink is the powerful app_rpt application and associated modules that load into the Asterisk PBX system.
- Asterisk is a software PBX that we use as the framework to implement Asterisk/app_rpt. Asterisk was conceived and written by Mark Spencer of Digium Inc. in 1999 and is made available as open source software under the General Public Licence (GPL).

Allstar - Advantages

- Users of Allstar do not require specialized digital capable radio equipment, instead standard analog radios are used.
- Good quality audio which depends on the audio codec selected and in use within the Allstar node.
- Less affected by noise/interference than analog simplex communication.
- Lowest setup cost compared to other digital voice communication modes.
- Integration with EchoLink, private/public phone systems and other digital voice systems.
- Registration is only required when setting up a repeater or hot spot. No registration is required to use all existing repeaters and hot spots available World wide.

Allstar - Disadvantages

- VHF/UHF and 10m FM only.
- There is a requirement and reliance of the Internet and/or private IP network to allow repeaters and/or hot spots to link together.

Allstar – Good practices

- Always know what your node is or is not linked to before connecting to another node.
- Never link two large systems together.
- When linking your node to a large system it is best to link to a HUB instead of a connected node.
- Never RF link to a repeater you do not own without the owners permission.
- Pause two seconds before speaking to allow all far end transmitters to synchronize.
- Pause two seconds between transmissions to allow other stations to break in.

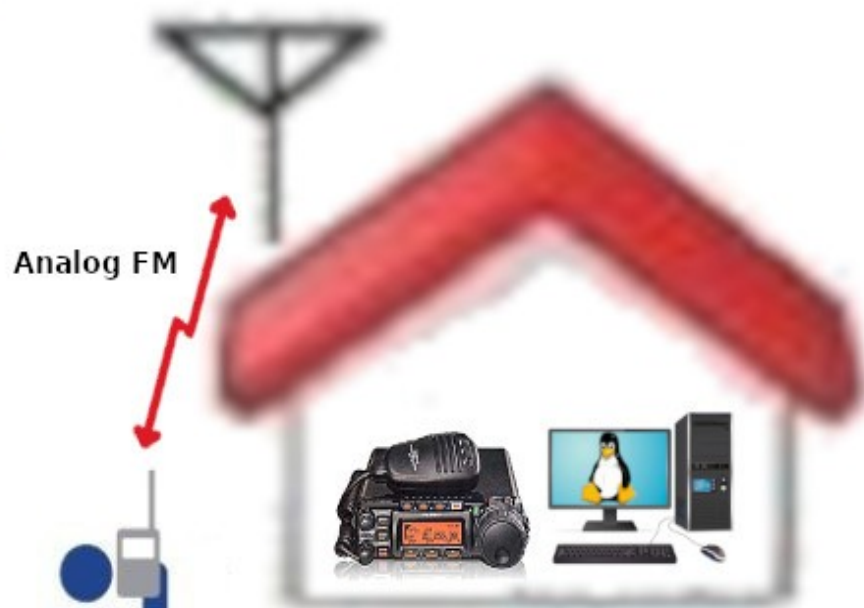
Linking repeaters and hot spots using Dual Tone Multi-Frequency (DTMF)

DTMF	Description
*1 <Node ID>	Disconnect from node
*2 <Node ID>	Connect to node in RX only mode
*3 <Node ID>	Connect to node in transceive mode
*4	Command mode to control node
*5	User-defined macros
*6	User-defined functions, such as autopatch
*7	Connection status / other functions

Commonly used commands	
*70	Current status
*71/73	Disconnect all links (macro)
*80	Force system ID
*81	Say system time
*85	Say IP address
*980	Say app_rpt software version

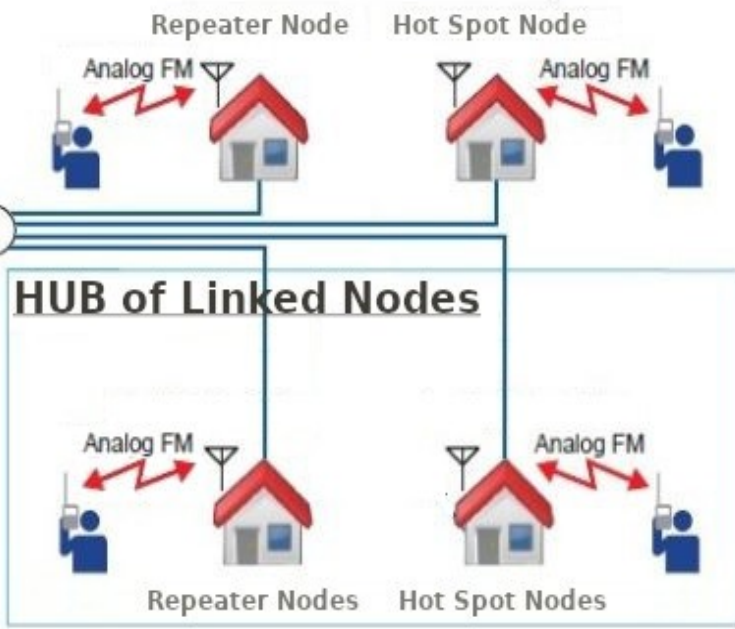
Allstar Demonstration

Accessing Allstar via a local repeater or hot spot



Allstar users communicate with their nearest repeater or hot spot using analog FM

Unlinked Nodes



Example Allstar repeaters/gateways

- MB7IDP (Node: 42434) on 145.3375 MHz, CTCSS tone 103.5 Hz.
Located near Heath Hayes.
- GB3SV (Node: 51711) on 145.6125 MHz, CTCSS tone 94.8 Hz.
Located near Butterhill.
- GB3CB (Node: 403615) on 433.350 1.6 MHz, CTCSS tone 67 Hz.
Located in Birmingham.
- GB3ZY (Node: 2237) on 50.800 MHz, CTCSS tone 77 Hz.
Located in Bristol.

MB7ISJ (Node: 455267) on 29.270 MHz, CTCSS tone 77 Hz.
Located in Northwich.

Popular HUBs



- Ireland Conference
- East Coast Reflector
- Hawaiian Hub
- Philadelphia Hub
- VK6 Hub
- Etc. etc.

Questions



– Linking Repeaters and VOIP

