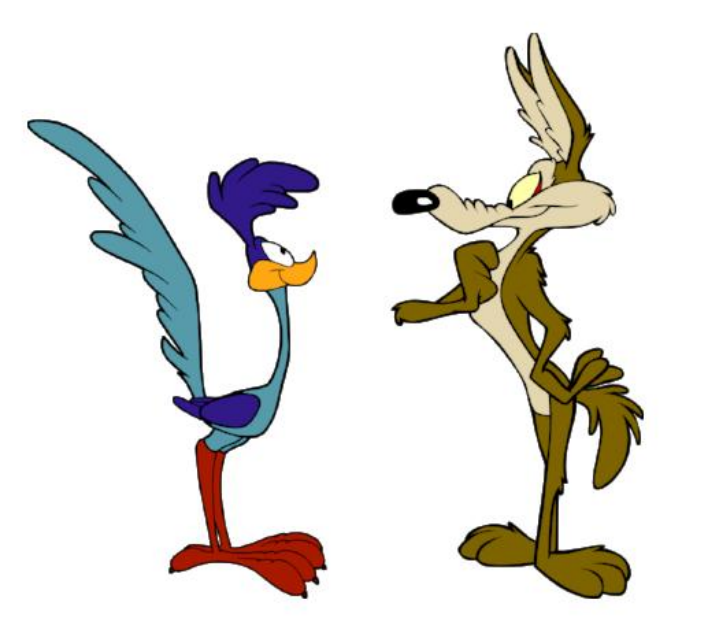
AllStarLink vs EchoLink

A Technical Comparison of Audio, Codecs, and Node Options

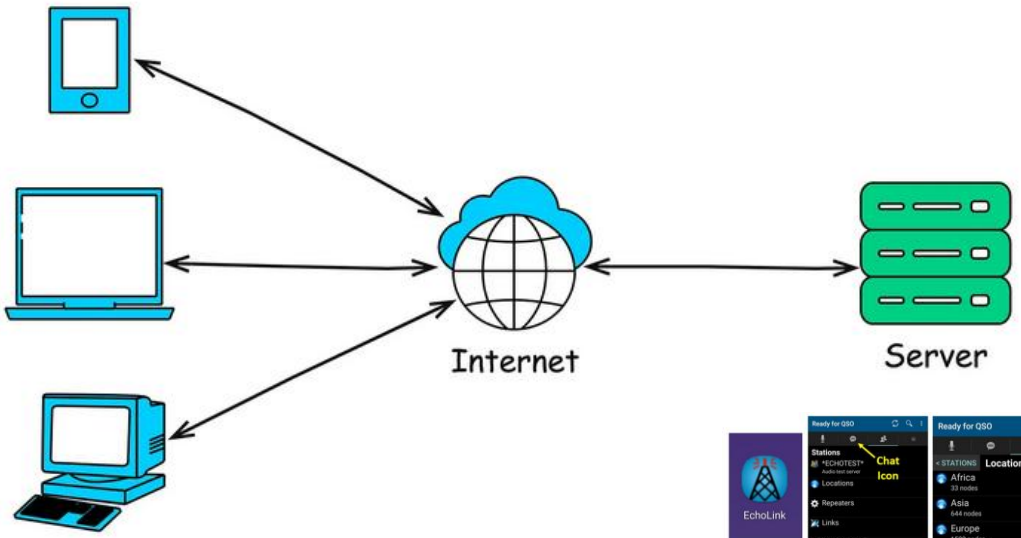


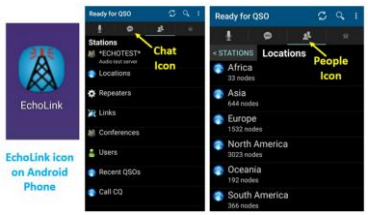
Agenda

- Overview of EchoLink and AllStarLink
- System Architectures
- Audio Codecs Explained
- Audio Quality Comparison
- Radioless Node Options
- Pricing & Vendors
- Q&A

What is EchoLink?

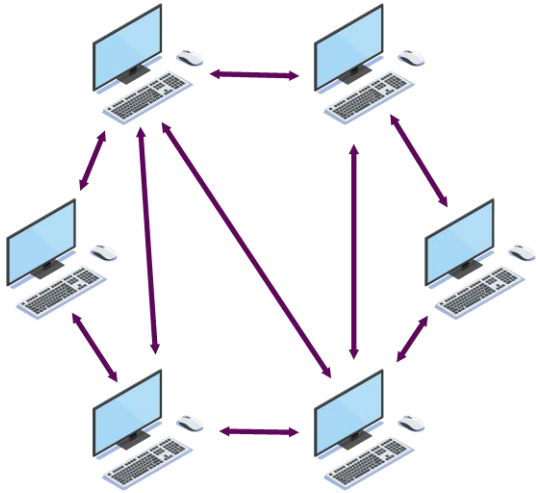
- Client-server model with central validation servers
- Accessible via Windows, iOS, Android apps
- Supports RF-linked repeaters and direct user connections





What is AllStarLink?

- Based on Asterisk PBX system
- Peer-to-peer node linking (decentralized)
- Highly configurable and open-source
- Supports repeaters, hubs, and cross-mode linking



Asterisk™

EchoLink Audio Codecs

- iLBC: 8 kHz sampling, narrowband, ~13 kbps
- GSM 6.10: Narrowband, ~13 kbps
- Audio passband ~300 Hz – 3.4 kHz
- Optimized for low bandwidth and legacy devices

AllStarLink Audio Codecs

- CODEC2: Open-source, narrowband, efficient
- Opus: Wideband up to 48 kHz, excellent quality
- ulaw/alaw: Legacy PSTN-style codecs
- Wideband audio possible: 50 Hz – 7 kHz or more

Codec Comparison

Feature	EchoLink	AllStarLink
Default Codec	iLBC	CODEC2 / ulaw
Optional	GSM 6.10	Opus
Sample Rate	8 kHz	8–48 kHz
Bitrate	~13 kbps	2.4 – 64 kbps
Audio Range	300–3400 Hz	50–7000 Hz+
Perceived Quality	Telephone-like	FM to near-broadcast

EchoLink Audio Experience

- Narrowband, 'telephone-quality' audio
- Compression artifacts noticeable
- Good for basic QSOs and nets
- Performance varies with mobile devices

AllStarLink Audio Experience

- Full FM quality possible with wideband codecs
- Lower latency with stable connections
- Natural-sounding, less fatiguing for long nets
- Preferred for high-quality linking and hubs

Radioless Nodes

- Operate AllStar without RF hardware
- Uses microphone, speaker, or headset
- Acts like a 'hotspot' for direct AllStar access
- Ideal for travelers, nets, or system operators

Radioless Node Options & Pricing

Option	Typical Price	Where to Buy
Raspberry Pi + CM108 USB	$80–150	Amazon, GigaParts, Ham Radio Outlet
Shari PiHat / PiLink	$150–200	HamProjects.com, GigaParts
Dell Wyse Thin Client + CM108	$120	eBay, Amazon
Pre-built Node Kits	$200–250+	Ham Radio Outlet, specialty vendors

Closing Thoughts

- EchoLink: Easy, accessible, modest audio quality
- AllStarLink: Superior audio, flexible linking, sysop control
- Radioless nodes: affordable entry into AllStar
- Choose based on audience, use-case, and infrastructure

Questions?