

# D-STAR System VA3ODG Update – 3 August, 2010

For West Carleton Amateur Radio Club  
By Rick Bandla VE3CVG

# D-STAR $\leftarrow$ $\leftrightarrow$ Internet

- D-STAR architecture is highly dependent on a reliable and fast internet connection.
- D-STAR system is functional (locally) without internet but strongest features of D-STAR are unavailable.

## Problems With The Wi-Fi Internet Connection

- No suitable hardwired internet is available at YMCA VA3ODG radio site, so we used a 2.4GHz wi-fi feed from VA3YH to VA3ODG
- Internet for computers, blue tooth, entertainment equipment, commercial equipment, all vying for same 2.4GHz ISM channels
- Clutter in path from VA3YH to VA3ODG
- Strong signal - target for hackers
- Net Result: very unstable connection, became frustrating and impossible to trouble shoot the system. Disappointed user group.

# Options

- Modify the wired internet feed from the YMCA to make it useable for D-STAR – *this is not likely*
- Purchase commercial internet feed – *while this is not a closed door, we do not presently have the \$30/mnth*
- Upgrade existing wireless feed – *this was the chosen approach*

# Solution

- We acquired specialized 100mw wireless technology for both ends of the internet extension
- Supports proprietary TDMA protocol
- Covers the ham band outside of the ISM band
- May be optioned for point-to-point radio
- Supports half channels
- Locks to mac
- Uses directional 1 foot dish – 23dBi gain. Pole-mount included
- No RF cabling - entire unit at each end is located right in the dish feed
- Powered by POE (included) i.e. ethernet cable plugs into dish feed
- Cost is \$90/end

# Installation

- Hard part done by Dale VE3XZT and company
- Internet feed, routing, etc. provided by Ying VA3YH
- Support and nagging by Rick VE3CVG
- Work done June 23 and 29<sup>th</sup>
- No setup software required, setup is via built-in web pages

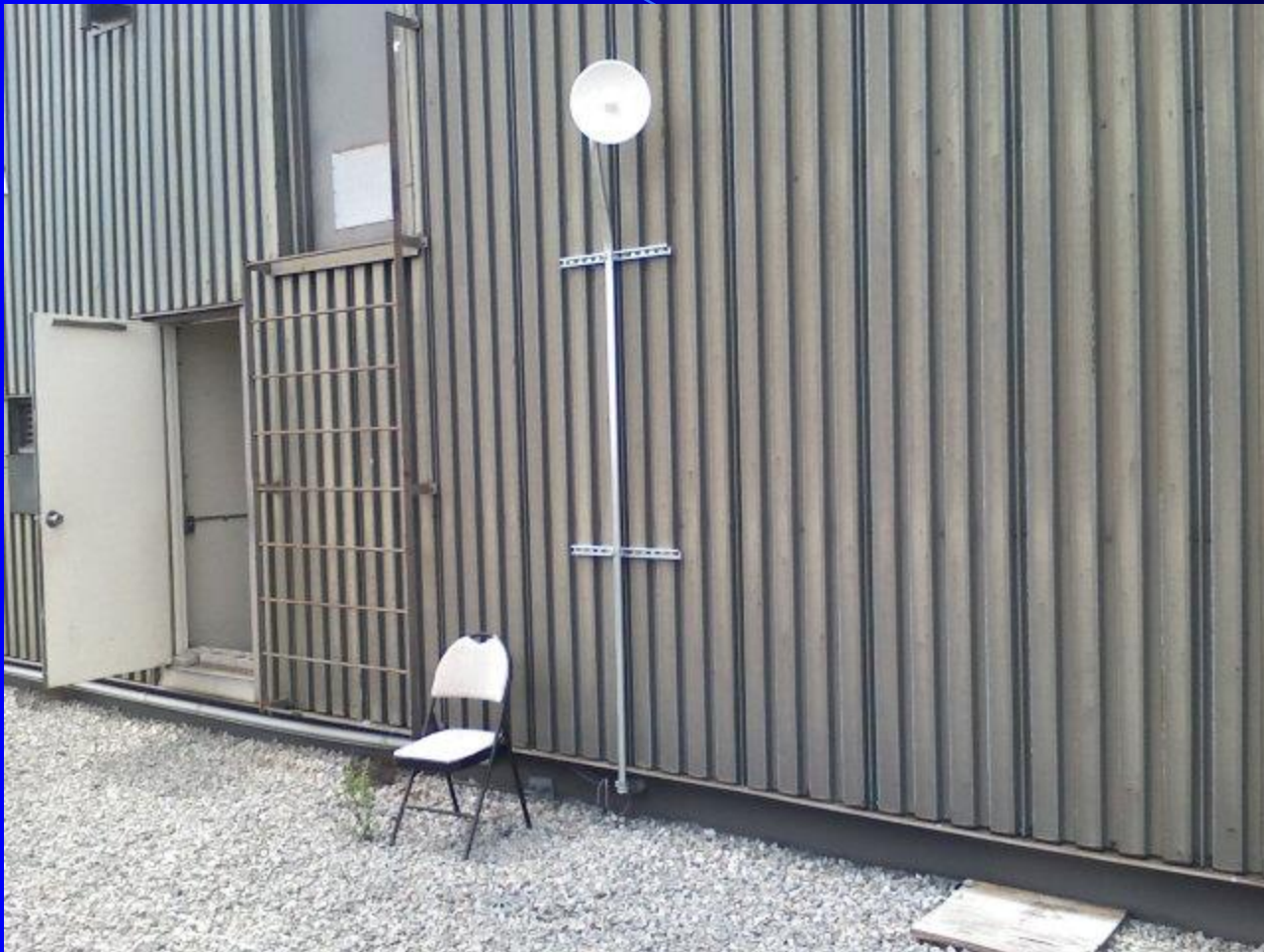
# Results

- Almost worked out of the box, required some conditioning
- Basically a transparent pipe
- Has been very stable so far
- Very good signal quality  $-54\text{dBm}$  signal with a  $-96\text{dBm}$  noise floor

# Where the Money Went

- Received \$300 from WCARC
- Cost of new gateway computer abt \$160
- Cost of new wireless equipment abt \$180
- Installation work and materials donated by Dale VE3XZT
- Internet continues to be donated by Ying VA3YH
- Thankyou for the financial assistance!!!





73