

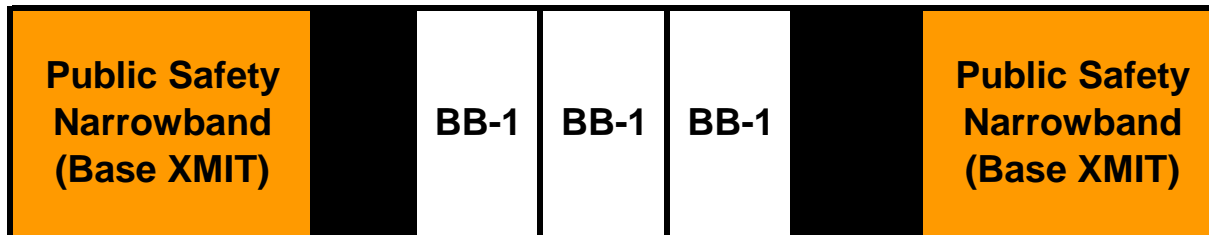
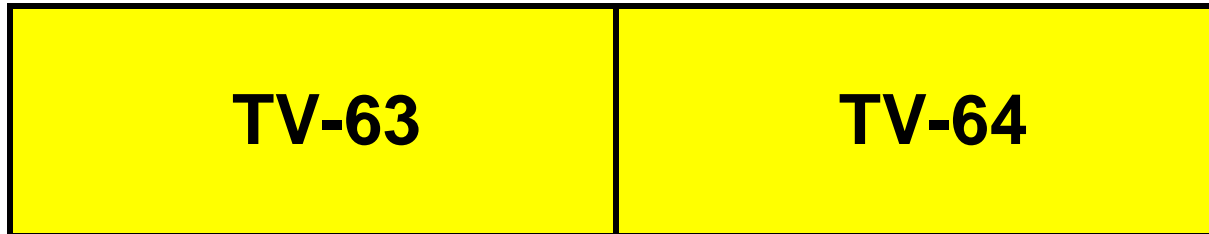
Broadband Public Safety Possibilities

- We have a proposal for reallocating our own 700 MHz resources on a Regional basis
 - Allowing broadband 1.25 operations with larger guard band
- Why Broadband ?
 - 700 MHz Technologies offer some excellent alternatives to 700 MHz wideband
 - Leverage greater market power for
 - Deeper feature sets
 - Better performance for some needs
 - Large market R&D investments fuel ongoing technology innovation
 - Lower cost in many cases

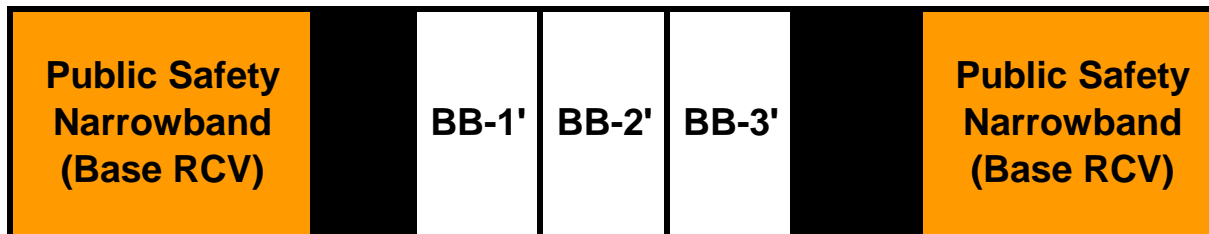
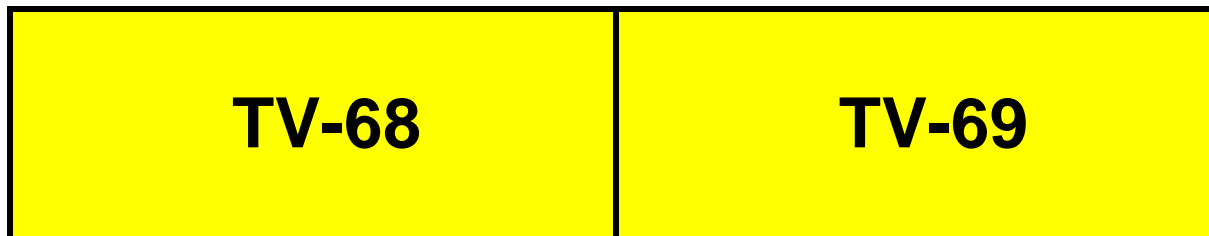
Broadband Public Safety Possibilities

- This brief focuses a proposal to aggregate 700 MHz Wideband spectrum into Broadband blocks (channels)
 - Deployment and technology possibilities related to Public Safety re-allocating their 700 MHz allocation to support broadband operations
 - Thoughts on broadband interference from this re-allocation
 - Aggregation would be Region by Region
 - Allows each Region to either aggregate to broadband or not
 - Allows each Region to what is best for their Regional requirements

Possible 700 MHz Public Safety Re-allocation - 1.25 MHz Broadband Channels

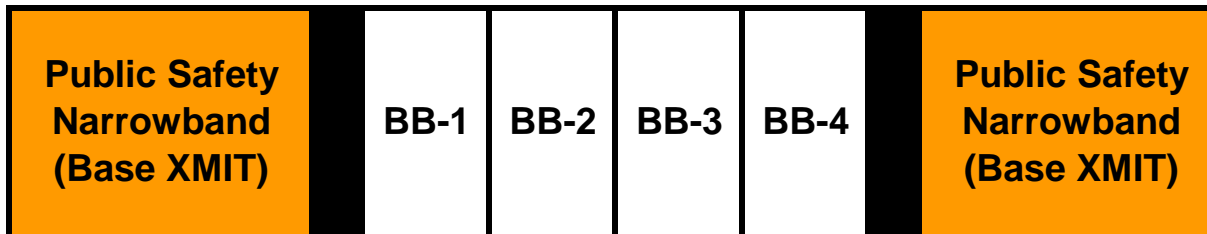
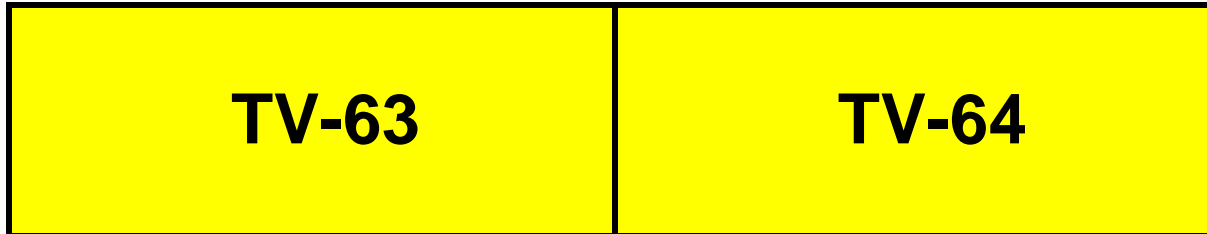


Large guard bands allow for COTS deployments

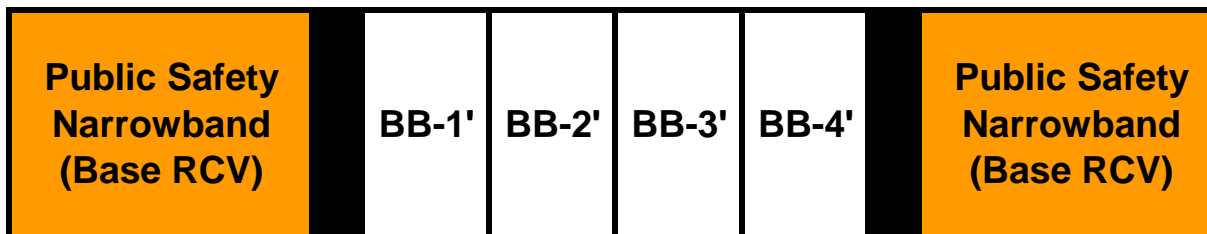
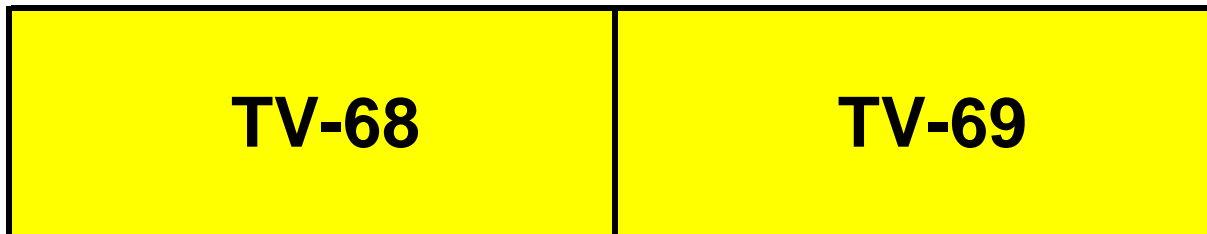


- Offers three paired 1.25 MHz channels, with between 1 and 1.25 MHz guard bands between broadband and narrowband operations
- Supportable technologies:
 - CDMA EVDO
 - IEEE 802.20 Proposals
 - Mobile WiMax (IEEE 802.16e) *may* be possible
- All with Frequency Reuse of 100%
 - Three simultaneous independent, full-coverage, and overlapping broadband deployments

Possible 700 MHz Public Safety Re-allocation - 1.25 MHz Broadband Channels



Smaller guard bands require more expensive filtering



- Offers four paired 1.25 MHz channels, with 500 kHz guard bands between broadband and narrowband operations
- Supportable technologies:
 - CDMA EVDO
 - IEEE 802.20 Proposals
 - Mobile WiMax (IEEE 801.16e) *may* be possible
- All with Frequency Reuse of 100%
 - Four simultaneous independent, full-coverage, and overlapping broadband deployments

On Broadband Interference Potential

- There are concerns that a re-allocation of our wideband spectrum could cause interference.
 - Having broadband neighbors is better than having wideband neighbors.
 - Intermodulation is likely the worst problem to face. The intermodulation potential from WB to NB and from BB to NB are nearly the same, but the IM effects from WB to NB are much worse than from broadband, since the neighboring power spectrum density (PSD) is much lower (as much as 14 dB higher!)
 - Although SAM ACCPR is very low, OOBE can be reduced through guard bands, AND the PSD is as much as 14 dB (again) lower. Between these OOBE is a wash
- Cost Impacts
 - Broadband may be a LOT less expensive to deploy and maintain
 - Multi-vendor availability of equipment - right now
 - Advanced technologies designed for large coverage and low cost subscriber equipment
 - Same channel at all sites eliminates the need for frequency planning