

Project: TVRO

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Key Features:

- Dual conversion receiver for best selectivity:
 - 1st IF 1200 MHz, 2nd IF 70 MHz
- Distributed Gain for best stability:
 - +30 dB at front end; +30 dB at 1st IF, +30 dB at 2nd IF
- Polarization Diversity for frequency reuse:
 - 12 vertically and 12 horizontally polarized channels
- Tunable 1st LO; crystal controlled 2nd LO
- Phase locked loop FM video demodulator
- Dual tunable limiter-discriminator FM audio subcarrier demodulators for stereo or SAP
- Low noise figure for high SNR w/ "small dish"



World's first commercial C-Band Home Satellite TV Receive System, San Jose CA, circa 1978

Approach:

When introduced in 1975, C-band satellite TV was never intended for direct broadcast to homes, but rather was designed to serve the network and cable TV industries. Signal strength was compatible with 10 meter diameter parabolic antennas and \$100,000 earthstations. Microcomm developed the first "low-tech" receiver for the direct broadcast market, unveiling in 1979 the first receiver under \$2000 (and just one year later, the first for under \$1000).

Partners:

- Satellite Private Terminal Seminars
- Society for Private And Commercial Earthstations
- ICM Video, Inc.

Schedule Milestone and Deliverables:

1978 (TRL 4)

- Validated first commercial microstrip receive circuit modules (mixer, preamplifier, bandpass filter, local oscillator) for 3.7-4.2 GHz
- Sold first modular receiver kit RX-4200 (\$995)

1979 (TRL 5)

- Demonstrated modular receiver prototype at SPTS Oklahoma City
- Released first full commercial product, ICM TV-4200 (\$1995)

1980 (TRL 6)

- Demonstrated integral receiver prototype at SPTS San Jose
- Released second full commercial product, ICM TV-4300 (\$995)

1981 (TRL 8)

- Sold full commercial product line to International Crystal Mfg. Co.

TRL = 8

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