

**USER REPORT**

# s2one Upgrades KTVX

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**SALT LAKE CITY**

**K**TVX-TV, an ABC affiliate, was the first television station in Utah, established as W6XIS in April 1948. The call letters were changed to KDYL and the frequency switched to Channel 4 shortly after the initial sign on date.

The Salt Lake DMA is the largest geographical region in the continental United States and KTVX serves the DMA with a network of more than 100 translators. The majority of the translators now take their initial off-air feed from the station's DTV signal, which is then converted back to analog for transmission.

In 1998, initial planning for an eight-station DTV transmitter facility for Salt Lake City began. KTVX-DT was one of the first two stations that went on the air on Oct. 27, 1999, using a single-IOT Harris Sigma transmitter operating at 17 kW. The Sigma transmitter also has a Harris modification that sends the output of the feed-forward IPAs to the antenna in case of a failure of the IOT.

In the summer of 2000, the IOT failed and the replacement IPA experienced a premature failure shortly after installation. After approximately a 90-day period, the third IOT was delivered and the Harris IPA-to-air modification enabled us to keep the DTV signal on, at a reduced power. The reduced power coverage enabled us to still serve the major portion of our viewing area, according to feedback from viewers.

Before installing the IOT, we decided to make sure the transmitter was in proper operating condition. Mark Hills of s2one in Spokane, Wash., had performed several installations of DTV transmitters in our eight-

station DTV group and the staff at those stations spoke highly of the quality and thoroughness of s2one's work.

**DETAILS, DETAILS**

I called s2one to evaluate the transmitter and install the new IOT, and was impressed with the detail the company applied to the project. The installation of the new IOT went well and the tube operated properly until early 2003. The IOT then developed some problems that we were able to work through, then it completely failed in August.

Given that we had been through three IOT's in roughly three years, I decided to evaluate what the potential options were. The Harris Sigma was designed to operate with IOTs from different vendors, which was normally determined at the factory before delivery and setup. Changing IOT vendors after the fact hadn't been undertaken much in the field but s2one and Harris decided that it would be possible to change to the e2v IOTD2100 IOT amplifier tube.

s2one undertook the detailed evaluation of what components would have to be changed and the parts were acquired. When the parts arrived, Mark Hills and I installed the new IOT amplifier assembly in the transmitter.

There were some problems with crowbar trips at first that turned out to be a problem with the new input cavity. e2v was able to arrange for a new specialized cavity shipped overnight from the U.K., since one was not in stock in the U.S. The replacement cavity arrived, Mark fine-tuned the transmitter and we were back on line at full power.

We also had s2one run a detailed proof of performance on the transmitter and change out the three-year-old thyatron. The new IOT went online in October 2003 and—aside from some slight adjustments to the side-



s2one installed a new IOT, like this one, at KTVX in October 2003.

bands has run flawlessly all winter.

The project was a success in part due to Mark Hills' knowledge of DTV transmitters and the excellent customer service that s2one provides. ■

Bob Lyon is the chief engineer of KTVX-TV and can be reached at rlyon@4utah.com. The opinions expressed above are the author's alone.

For more information, contact s2one at 800-270-7050 or visit [www.s2one.com](http://www.s2one.com).