



Moseley Event 5800

By Chuck Ince

When I joined Gap West Broadcasting in Missoula, MT, it didn't take long to realize I needed a new STL solution. Because of the terrain, Missoula is dubbed the Garden City for its mild winters relative to the rest of Montana. But its more than 20 area radio stations share transmitter locations on one of two high mountain sites overlooking the valley. That meant I was faced with a lot of 950MHz STL congestion and interference.

I needed a clean audio path from the studios to the 7,000' transmitter site for my three FM stations and an STL repeat point for one of my AM stations. I also used 450MHz transmitters for RPU relay and telemetry back to the studios.

I had a great line of site path from the studios to the mountain top, as did other stations in the area, which created the challenge of avoiding or causing interference issues with each other.

I contacted Moseley for suggestions, and I was told about the Moseley Event 5800 high capacity bidirectional STL/TSL. This consists of a wideband E1/T1/IP radio paired with the Moseley Starlink SL9003T1 chassis. It has proven to be an awesome solution to the problem.

Making connections

The Event 5800 is a full-duplex 5.8GHz transceiver consisting of an indoor unit (IDU) connected via IF cable to an outdoor unit (ODU), containing

Installation was straightforward. Hanging the Radio Waves dish was quick and easy as all hardware was supplied. The Event ODU mounts right on the dish mounting bracket and is connected with a short pigtail cable. At the studio site, 50' of IF cable was plenty to connect the ODU to the indoor rack-mounted unit. At the transmitter site I need 115' of cable, as I wanted to be high enough on the tower to eliminate any possibility of obstruction to the line of sight. This additional length was not an issue as specifications will allow for up to 300' of interconnecting cable.

Once the antennas and cabling were completed, I rack-mounted the Event IDU and SL9003T1 chassis. Rack ears are provided for the 1RU indoor unit, but the predrilled mounting holes force it to be mounted with the cable connections facing the front of the rack unless there are rear rack rails. This is inconvenient and forces you to leave a rack space open for the wiring. At my transmitter site I modified the box slightly so I could turn it around, mounting the rack ears on the edge away from cable connections. Then mounting the unit just above the T1 chassis, all cabling is easily accessible on both units from the back of the rack. The spider cable was preconfigured by Moseley, so installation was a snap.

Once everything was hooked up and powered on, it was time to adjust the antennas and peak the signal. The Event HD has a network management port, so I just plugged in the laptop and opened the Web interface. I was easily able to monitor signal at both the studio and transmitter units. After aligning the antenna at both locations

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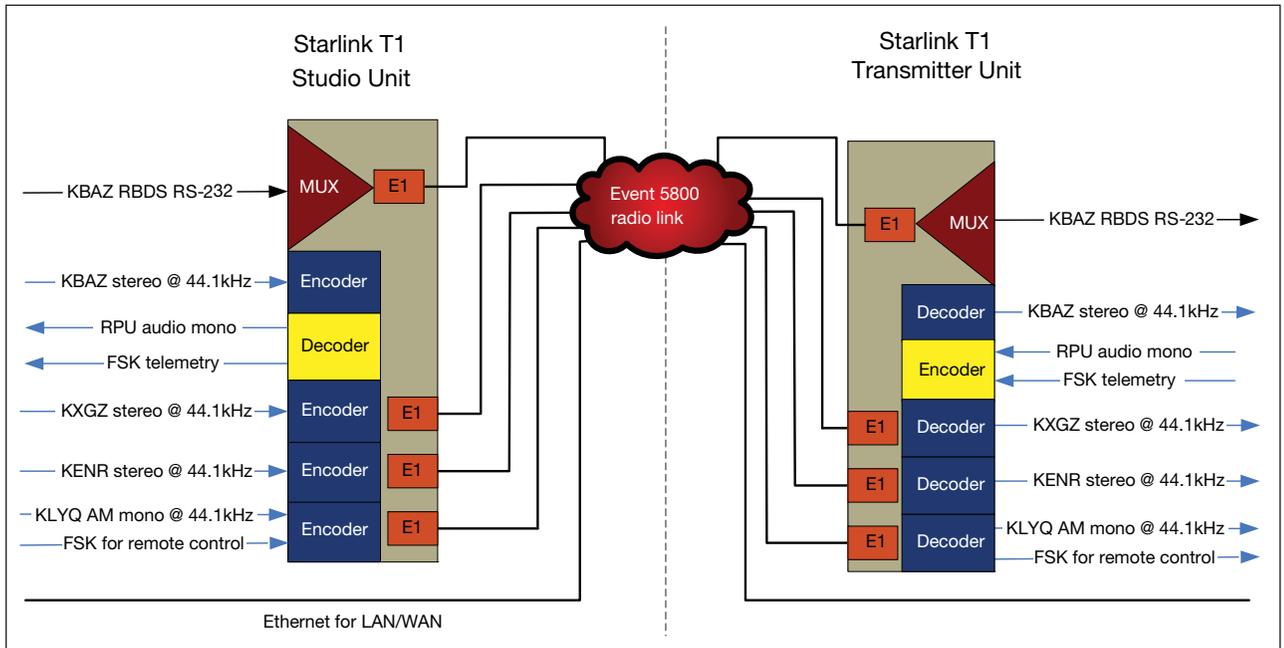
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Performance at a glance

- T1/E1/IP Ethernet radio link
- High-capacity bidirectional STL/TSL
- License-free operation

the RF section. The ODU is mounted on the tower and connects with a short jumper to the Radio Waves SPD3 high-gain antenna.

A custom spider cable connects the indoor units to the SL9003T1 chassis and the individual encoder/decoder cards at each location. The Starlink has the unique capability of housing multiple audio cards with T1 interfaces to support each of my four stations. Each card is capable of linear uncompressed AES3 digital and analog XLR audio and RS-232 communication.



The system as installed at Gap Missoula.

I was surprised and thrilled with a -35dB signal. Next step, send some audio.

Custom setup

I had the T1 chassis configured with four encoder cards and one decoder card at the studio. The transmitter site chassis had four decoder cards and one encoder card. With this configuration I am able to send L/R audio for each of my three FM stations as well as using left channel on the fourth encoder card for my AM audio. Right channel on the fourth card is used for remote control telemetry from the studio to the transmitter site. The single encoder card at the transmitter site returns remote control telemetry to the studio, as well as an RPU audio relay back to the studios. One of my FM stations was set up with RBDS, but that simply plugged into the available RS-232 ports.

Another bonus with the system is a 2GB Ethernet LAN/WAN extension. Just plugging this into my network switch at the studio, and adding a small eight-port switch at the transmitter site, I have instant network communications for my laptop. I

also ended up connecting my audio processors at the transmitter site, to the network, which allows remote configuration from the studios.

I admit I was concerned about the “no license required” 5.8GHz system, as I had spoken with other engineers who used similar products and had issues with brief dropouts and interference. This installation is well engineered and has a tremendous fade margin. My system has been on the air for more than two months now, and we have not had a single dropout or any issues affecting our signals.

Most importantly, the PDs and GM are very pleased with the better audio quality on each of the four stations, and even recently commented on how much better our RPU relay sounds. In total, I shut off six transmitters (STL, RPU, and TRL) when I turned on my Event 5800. I highly recommend the Moseley Event 5800 as an excellent STL solution, with a ton of expandability and bonus features.

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