

by Marvin Walther

## Comrex ACCESS Link Saves Money

We originally had a fractional T1 running from our studio in Alpena, Michigan to our main broadcast center in Tawas City, Michigan, over 60 miles away. The T1 crossed LATAs for Verizon and AT&T, and the link was becoming cost-prohibitive, at more than \$1,000 a month.

We have replaced the old gear with a router and a dedicated business IP connection. We now connect from studio to studio via Charter Internet services at both locations – and the Comrex ACCESS. We no longer cross LATAs and with our broadband connection, our monthly bill has been cut by 75%

### RELIABLE

We are using this product as a continuing service (always on) from one studio to the other, with a bi-directional connection that provides air monitor back to the originating studio location. The Comrex ACCESS rackmount is reliable and delivers as advertised on an Internet connection of only 368 kbps upload and 3 Mbps download speed.



The Comrex ACCESS Rackmount

We use a static IP and the Comrex units are configured to be static as well, through dedicated routers on a separate WAN from our existing in-house Internet access. Andy at Comrex was wonderful with helping me set up these units;

in fact, he went beyond normal working hours one evening to help me set up the receive-studio end.

Because of this dedication to their product and customer service, I would recommend the ACCESS.

### ADJUSTING ACCESS

There are a couple of caveats you should watch for, though. For example, in our situation the HQ2 audio codec caused too much “swishing” of the highs of the audio to suit me. Initially at set-up, the HQ2 mode had drop-outs, and even more frequent drop-outs when accessing the ACCESS via the Internet browser.

With Andy’s help we changed the codec to HQ1 and the highs improved drastically. But then the midrange seemed to become more sensitive to flanging effects, midrange boosts in equalization from processing, and from Rock music program content. However, with some EQ tweeks in the processing, the midrange tamed down and the MP3-like artifacts became very acceptable for a remote STL-type broadcast.

The unit has operated for nearly two weeks in the HQ1 mode without a single audio drop-out or interruption in service. Of course, because of the way the packets arrive at the receiver for reassembly, this may not be related to the Comrex product directly. (Every network is dynamic and, although it seems to defy logic, some networks behave better with larger packets at slower bitrates.) But given that time domains in the IP environment are always shifting, the type of servers and routers used, and other variables, I suppose anything is possible.

### HELP THE ACCESS HELP YOU

It is important to ensure the audio source material you pipe into the transmit end of the ACCESS is as good as possible. Any bad or marginal quality MP3’s will have their inherent audio flaws accentuated by the ACCESS in any of the HQ modes (in my humble opinion, HQ1, without the AAC plug-in, is the best transmission mode, right out of the box).

The HQ codecs operate at different bit rates than what is found in standard MP3’s, so avoid bit rates below 128 or 192 on your transmit end (320 kbps performs very acceptably through the ACCESS). And do not let your jocks play audio scavenged off the Internet at questionable bit-rates through the ACCESS; you will probably notice the effect on the air if you do.

We plan on using the ACCESS in linear mode when we get our own IP pipeline from the studio to the transmitter, then any concerns about audio quality will be moot. However, if you have the extra money, buy the AAC codec plug-in for the ACCESS to save you some bandwidth and improve the audio quality.

I also like the fact that these units can upgrade software codecs just like a computer, and they have a bullet-proof Linux core OS so these babies can sit right on the network and not get hit by all the crazy stuff out there on the web.

### RECOMMENDED

Overall, the Cost versus Performance ratio is excellent.

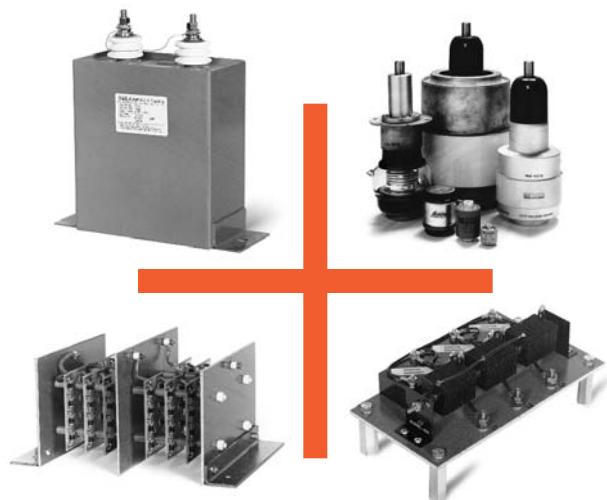
I would recommend the ACCESS as a great replacement option to cut costs for T1 or ISDN service and still perform acceptably for FM broadcast. If using ACCESS for an AM STL, I would think the performance would be just as good as any standard STL. (Although not designed explicitly as an STL, the ACCESS reliably performs well as one in this engineer’s experience thus far.)

By the time we take the additional phone circuits off our T1 as well as the T1 itself, our savings will be about \$1,100 a month even after paying for the dedicated network connection through Charter Internet. Thanks Comrex, for an alternative, affordable solution that finally gives the phone company a run for its money. Competition is a good thing!

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