Hi Guys!

John Kesler from Emmis suggested that I sign in and answer a few questions on this thread. It's been 20 years since we sold TEXAR to Gentner and I am working from memory here. So, if I reference a white test point and it was really blue, I hope people will understand.

As the group had observed, there was a major rework of all of the PC boards somewhere about serial number 500. I don't remember exact;y what the cut-over number was. Also, there may have been a dozen or so boards that had the new M-101 and MB-2 cards but still had the CX-1 and DB-1 boards. The CX (control) board and the DB (display board) had to change at the same

time. And the M-101 and the MB (motherboard) had to change as a pair. But there was no reason that the new motherboard and the old CX board would not work together.

Changes:
CX-1 to CX-2 > added a "bypass" mode so that you didn't have to patch the units out to run the pink noise generator (you remember patch cords don't you?). Also added the 4 feeds to the display board which feed the front panel test points. Lastly, made the feed for the AMC-1 or AMC-2 (AM smart clipper) a 5-pin Samtec socket. On the CX-1, the cable to the smart clipper (if you had an AM unit) was hard-soldered to the CX-1.

DB-1 to DB-2 > added the colored test points and a TL084 as an isolation amp to drive them.

MB-1 to MB-2 > biggest change was to run two ground returns from the four M-100 (M-101) sockets, one for analog, one for digital. The MB-1 had a common ground for both and there was a lot of digital hash from the National LM3914 bar graph driver chips that was contaminating the analog signal. Running separate ground made the noise floor lower. Another change was to make the feed to the PR-1 phase rotators from a 5-pin socket. In the MB-1, the PR-1 pigtail was hard soldered.

M-100 to M-101 > changed the dot graph to a bar graph
M-101 to M-102 > this was done by Gentner. My understanding is that it was mostly for thermal stability. The linear-to antilog convertor (2N3904) had to stay exactly on the correct point on the knee of the curve to work properly. We used a 1N914 (or 1N4148) diode junction to do that on the M-100 and M-101. And while it was another P-N junction and did react to the summer-versus-winter problem, the two junctions were not physically in contact. They did not track as well as they could have. Gentner replaced the 2N3904 with a matched pair. I think is was an MAT-02 or something similar. The M-102 is a better board mostly because of the thermal stability.

By the way, I will be on the panel at the AES in SF this coming Friday at 3 PM. I will have the original, hand-wired prototype M-100 with me if anyone wants to see it.

PS-1 to PS-2 > On the PS-1, both heat sinks for the 7815 and 7915 were up in the air. On the PS-2, we laid the positive heat sink on the board for better heat evacuation. The current on the
positive rail was a lot more than on the negative rail due to the fact the LEDs all came off of the positive rail. When we went to the bar graph and the

higher current, the PS-1 could not handle the additional current. The heat rise on the 7815 was too much. A PS-1 is fine for a dot-graph prism (M-100 and MB-2). But the bar graph prism requires the PS-2.

One other thing about the power supply. The original transformer was an LP-30-340 (30 volts and 340 milliamps), which worked fine when you had decent line voltage. But a lot of mountaintop sites had low line voltage and the 7815s would fall out of regulation and the SNR would go crazy. We changed the transformer to an LP-34-300, which gave a higher DC voltage at the input to the 7815. The later problem was that 300 milliamps was not enough to feed the AMC-2 AM NRSC smart clipper, which came along 2 years later. The AMC-2 had a lot more op-amps in it than did the AMC-1. We had a company in State College, PA custom-wind some LP-34-340s for us, which really saturated the core and made it hot. But it was all within ratings. Gentner replaced the "flat pack" transformer with a torroid, which was a better solution.

Miscellaneous: The specified attenuator was a VTL2C3, not VTL5C3, although the difference between the two is slight.

I concur with the group. The best thing to do is shotgun all 5 electrolytics on each of the 4 M-101 boards. After 20 years, the paste is probably pretty dry. I have seen many dead or limping Prisms come back to life simply by replacing these caps. The guy who made the automation machines from the DAT tape decks was Steve Bellinger of Decatur, Illinois. He also owned WDZ(AM). His company was called Systemation. The software was slick - way ahead of its time. But, as the group observed, the mechanical construction of the tape decks did not hold up well to 24/7 operation.

I hope that helps. If any one has a specific question, I'll try to watch this board for a while. Or, feel from to email me at glen_at_clarkcom.com (one "n" in glen).
With best regards,

- Glen