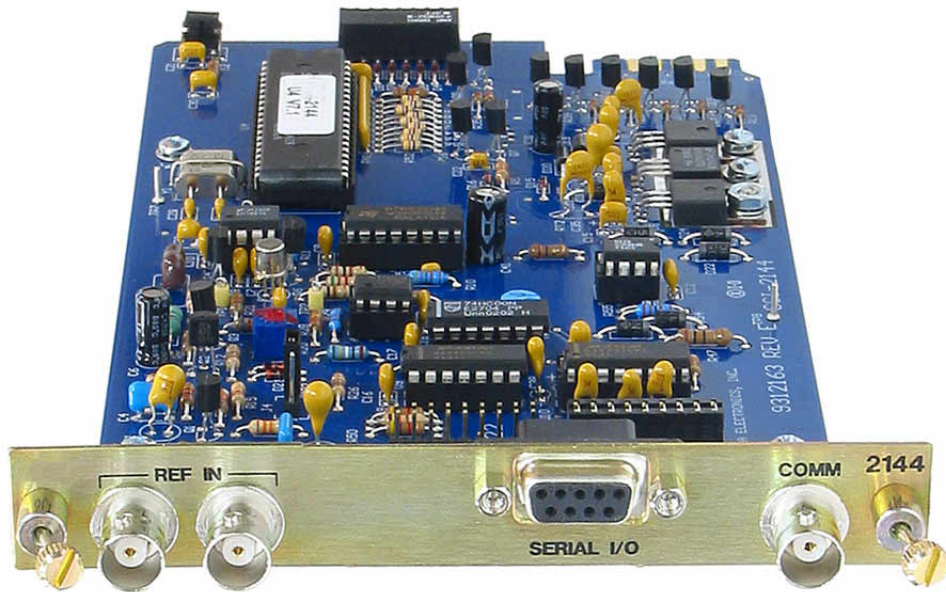


DNX2144

CONTROL DATA CONVERTER INSTRUCTION MANUAL



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DNX-2144 OPERATION

The DNX-2144 provides a control interface between a Sigma ADX/MRX router and a DNF RS-422 port router. The DNF router is considered the Master of its status - Not the ADX/MRX.

The DNF-2144 is built using the hardware of the SCI-2144. Currently there are no hardware modifications, just software. The operation of this card has nothing to do with an SCI-2144.

On Reset

- **When the DNX-2144 powers up, it requests from the DNF router its status via the serial port.**
- **Having determined the status of the DNF router, it requests a Global Status of the ADX/MRX system via the Comm line.**
- **Next the DNF-2144 compares the status of the two systems.**
- **Any differences in status between the two systems will cause the DNX-2144 to send a Take(s) to the ADX/MRX. The Take(s) is(are) done not to switch anything, but to force the ADX/MRX status to agree with the DNF.**
- **For each Take generated by the DNX-2144, a subsequent status update is returned by the ADX/MRX via the Comm line. The DNX-2100 uses this data to update its ADX/MRX status.**
- **The Take/update cycle continues until all status differences are resolved.**

Normal Take via ADX/MRX

- **Whenever a Take is generated in an ADX/MRX system, a Status Update is sent over the Comm line. The Status Update is used by all the remote panels in a system to update their status tables and/or displays.**
- **The DNX-2144 functions the same as a remote panel.**
- **The DNX-2144 monitors all Status Updates. If a Status Update comes along which is applicable in address and level to the DNF router, the DNX-2144 will save that new status.**
- **Upon receipt of a new status, the DNX-2144 will compare the new ADX/MRX status with its status of the DNF router.**
- **Nothing will happen if there are no changes between systems.**

- If there is a status change between systems, the DNF-2144 will send a change (Take) to the DNF router via the serial port.
- The DNF-2144 then requests a new status from the DNF router.
- If, as a result of the change there is matching status between the two systems, nothing further happens.
- If, as a result of the change the status between the two systems differ, the DNF-2144 will pass these changes back to the ADX/MRX system as a Take, or series of Takes, until the ADX/MRX system status matches that of the DNF. Again, the Take(s) is(are) done not to switch anything, but to force the ADX/MRX status to agree with the DNF.

Operational Notes

- The reason for the DNF to be the master as far as its status is concerned stems from the fact that it is a Port Router.
- Port routers primarily differ from the traditional X-Y type (Sigma) routers in that they do not have fixed input and outputs.
- With the DNF router, any port can be an input or an output, and can dynamically change from input to output, just by making a Take. Ports can also be turned off.
- This presents problems with (our) control system and displaying status information when used with our router system(s).
- Normally, we can not display an off condition.
- Due to how a port router can function, a single take could result in many other switch transactions within the unit.
- With Sigmatrix, an "OFF" label can now be added to the users system using an unused input (mapped high) and will be displayed on an ANX panel or with Sigmatrix. However, you can not set (Take) an input "OFF" as the DNF does not recognize a 'port off' command but does generate one on its own as necessary.