CCA2 2110
A2 Crate Controller
User's Manual
Version 2.0

VERSION 2.0 - April 1991

CREATIVE ELECTRONIC SYSTEMS S.A.

USER'S MANUAL

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CCA2 2110

A2 Crate Controller

1. Features

- ❑ Single board design.
- ❑ Front panel display of N, X, Q, BD, EnBD, ACL, REQ, I and Crate Control.
- ❑ User programmable identification code (32 * 8-bit).
- ❑ Crate Control output and extended CAMDEB specifications.
- ❑ Optional built-in LAM Grader (CERN EP 258 compatible)

2. General description

The A2 crate controller is a CAMAC parallel crate controller designed to support simultaneous accesses to the dataway from both host and auxiliary processors. The Auxiliary Control Bus (ACB) located at the rear of the unit allows connection of up to 8 auxiliary processors. The CAMAC access protocol takes care of all the possible conflicts in dataway access, using either a priority based method (Request / Grant mode or cycle steal) or a serial blocked mode transfer (ACL mode).

3. CAMDEB extended specifications

The CAMDEB line of CAMAC units has been designed with features in excess of the CAMAC specifications, in order to simplify the debugging of large CAMAC systems.

Thus, two features have been incorporated into this A2 Crate Controller with the object of providing more complete information on the behavior of the crate in real-time.

- When the host computer has gained control of the crate, both a visual indication and a logic signal are available at the front panel.

- An extension of the ACB specifications renders the "EN" encoded N lines bi-directional; thus, they can be latched in the ACB and Dataway Service Module (ADSM 3320).

These two features enable a permanent monitoring of the two most important parameters in multi processor systems, viz :

- Which processor (host or auxiliary) gained control of the crate.
- Which has the station accessed.

4. LAM Grader option

Because of the single board design, the second slot is left free and can be used to incorporate a programmable LAM Grader. This solution saves one CAMAC slot and eliminates the wiring hardness. The LAM grader conforms to the CERN EP 258 specifications, which means that patching of the LAM is replaced by a programmed encoding procedure Three external LAM inputs are provided on the rear panel in addition to the dataway LAMs for real-time synchronization.

5. Module characteristics PROM

The module characteristics are programmed by the user in a 32 * 8-bit fuse link PROM, type TI 18SA030. This PROM provides a CAMAC accessible module signature, such as module type, module serial number, inventory number, ... This feature also allows an automatic module locater program to be run.

6. CAMAC functions

Standard A2 functions :

N(24).A(x).F(x)	command with preselected N.
N(26).A(x).F(x)	command with all Ns.
N(28).A(8).F(26)	generates dataway Z.
N(28).A(9).F(26)	generates dataway C.
N(30).A(7..0).F(0)	reads GL. Q answer = 1.
N(30).A(8).F(16)	loads SNR. Q answer = 1.
N(30).A(9).F(24)	removes dataway I.
N(30),A(10).F(24)	disables BD output.
N(30).A(9).F(26)	sets dataway I.
N(30).A(10).F(26)	enables BD output.
N(30).A(9).F(27)	tests dataway I. Q answer = 1 if I = 1.
N(30).A(10).F(27)	tests BD enable. Q answer = 1 if BD enabled.
N(30).A(11).F(27)	tests demand present. Q answer = 1 if demand present.

Additional functions:

N(30).A(15..00).F(6)	reads 6-bit identification codes no. 0-15.
N(30).A(15..00).F(7)	reads 8-bit identification codes no. 16-31.
N(30).A (8).F(27)	tests ACL mode. Q answer = 1 if ACL is on.

7. Ordering Information

CCA2 2110 :	CCA2.
CCA2 2111 :	CCA2 with built-in LAM grader.

Accessories:

Branch Highway Cable :	BHC 4310/x x = nb. of meters
LAM Grader Cable :	LGC 4370
A2 - ADSM Cable :	ACB 4371

8. Specifications

8.1. Front panel controls:

Branch Connectors :	Emihus 132-pin female (2 *)		
Crate address:	7 positions screw driver switch		
ACB priority chain:	Request Out	-	Lemo 00
	Grant In	-	Lemo 00
	Grant Out	-	Lemo 00

Inhibit input: Lemo 00 - TTL
On line / Off line toggle switch.
Manual Z / Clear toggle switch.
Crate Control output: Lemo 00 - TTL

8.2. Rear panel controls:

ACB connector : 40-pin Scotchflex male.
pin layout: first pin at the bottom right when looking at rear panel

signal layout :

1	GND	11	GND	21	AL6	31	AL31
2	EN1	12	EQ	22	AL7	32	AL17
3	EN2	13	GND	23	AL8	33	AL18
4	EN4	14	RI	24	AL9	34	AL19
5	EN8	15	GND	25	AL10	35	AL20
6	EN16	16	AL1	26	AL11	36	AL21
7	GND	17	AL2	27	AL12	37	AL22
8	ACL	18	AL3	28	AL13	38	AL23
9	GND	19	AL4	29	AL14	39	AL24
10	free	20	AL5	30	AL15	40	GND

LAM Grader connector: Cannon 52-pin female.

9. Power requirements

+ 6 V ; 2.2 A.