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A Datacon-CAMAC module for the DIBBUK control system

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A DATACON-CAMAC MODULE FOR THE DIBBUK CONTROL SYSTEM

The DATACON-CAMAC unit provides secondary beam line information through the CAMAC Dataway to the experimenters computer. Each element, e.g. magnet power supply,[1] consists of two successive 16 bit words. There are a total of 64 words per module with the first element being words #0 and #1 and the rest in sequential order. The elements are loaded in the same order as is presented by the LIST task.[2] The module is loaded with updated values only when the MONITR task is active, i.e. once every five seconds when MONITR is running. All elements are updated even though they may not be a member of the current operation subset or be deferred. Should an element become deferred, a LAM is generated. The DATACON[3] and CAMAC operations are asynchronous with respect to each other. The magnet power supply format is the following:

WORD 1:	Bits	0-7	=	Element DATACON Address		
	Bit	8	=	Deferred by MONITR task		
	Bits	9-12	=	0	=	Shunt
				1	=	25 mV Calibration Reference
				2	=	75 mV Calibration Reference
				$3\text{-}17_8$	=	Unused Presently
	Bit	13	=	1	=	"A" Polarity
				0	=	"B" Polarity
	Bit	14	=	1	=	Rectifier On
				0	=	Rectifier Off
	Bit	15	=	1	=	Standby On
				0	=	Standby Off

WORD 2	Bits	0-11	= Element Last Read Magnitude
	Bits	12-15	= Unused Presently

CAMAC Specifications

The CAMAC command functions are the following:

COMMAND				ACTION
F(0)	-	A(i)	(i = 0-15)	Gates External "Group One" Data Onto Dataway (Words 0-15)
F(1)	-	A(i)	(i = 0-15)	Gates External "Group Two" Data Onto Dataway (Words 16-31)
F(2)	-	A(i)	(i = 0-15)	Gates External "Group Three" Data Onto Dataway (Words 32-47)
F(3)	-	A(i)	(i = 0-15)	Gates External "Group Four" Data Onto Dataway (Words 48-63)
F(8)	-	A(0)		Returns Q if LAM is set.
F(10)	-	A(0)	- S1	Clear LAM
F(24)	-	A(0)	- S1	Disable LAM
F(26)	-	A(0)	- S1	Enable LAM
C - S2				Clears LAM
Z - S2				Clears LAM - Disable LAM

Status Indications

The front panel status indications are the following:

N light flashes whenever module is addressed by CAMAC.

LE light on whenever LAM is enabled.

L light on whenever a LAM is pending.

DR light flashes whenever accepting DATACON data.

DATACON Specifications

All transmissions must have the SET/READ bit enabled. A LAM is generated with bit C6.[1] The CAMAC module address may be adusted via slide switches to any address between $0\text{-}377_8$.

C5 - C0	Memory Address ($0 - 77_8$)
C6	LAM Set Flag
M15 - M0	Magnitude

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