TCI-232 SERIAL PROTOCOL SPECIFICATION
document version 1.00 - October 1995

Serial communication with the TCI-232 is accomplished by the exchange of packets. The packet will be defined as a group of bytes including a header, ID, data size, and data. The packet header is used by both the TCI-232 and the user app- lication to identify the packet and packet type. A packet header consists of the hexidecimal byte sequence 0xFF 0xAB (255 171). A packet ID will be one byte from the list of commands which the TCI-232 recognizes.

Communications *to* the TCI-232 *from* the user application:

The format for transmitting command packets to the TCI-232 is as follows:

<packet header><packet id>[<data bytes.....>]

The data portion of a packet will vary depending on type of command being sent. Some commands do not require any data to be transmitted so none should be sent. The TCI-232 knows the required amount of data bytes for each command. If a command packet is transmitted without the appropriate number of data bytes it will be ignored.

Communications *from* the TCI-232 *to* the user application:

The format for the response packets from the TCI-232 is as follows:

<packet header><packet id><data size><data bytes...>

The packet ID indicates to which command type the response is directed. The data size specifies the number of response data bytes forthcoming. All response packets contain at least one data byte.

Command message types:

ID: **0**
Type: **Mode**

- Description: Enable or disable automatic transmission of hour, minute, and second once per second at the valid start of the first frame of the second.

- Note: Automatic transmission of this message begins on the first second after the second during which the enable message was received.

Command format:

#	Byte	Description
1	0xFF	packet header
2	0xAB	" "
3	0x00	command ID
4	0x??	0x01 to enable this mode, 0x00 to disable

Response format:

#	Byte	Description
1	0xFF	packet header

2	0xAB	" "
3	0x00	response ID
4	0x03	response data size
5	0x??	hour (0-23)
6	0x??	minute (0-59)
7	0x??	second (0-59)

ID: **1**
Type: **Mode**

- Description: Enable or disable automatic transmission of time/date information once per second at the valid start of the first frame of the second.

- Note: Automatic transmission of this message begins on the first second after the second during which the enable message was received. This mode can not be enabled unless the "Auto Date Set" (SW1-7) switch is in the ON position.

Command format:

#	Byte	Description
1	0xFF	packet header
2	0xAB	" "
3	0x01	command ID
4	0x??	0x01 to enable this mode, 0x00 to disable

Response format:

#	Byte	Description
1	0xFF	packet header
2	0xAB	" "
3	0x01	response ID
4	0x07	response data size
5	0x??	hour (0-23)
6	0x??	minute (0-59)
7	0x??	second (0-59)
8	0x??	month (1-12)
9	0x??	day (1-31)
10	0x??	year (0-99)
11	0x??	day of week (0-6)

ID: **2**
Type: **Mode**

- Description: Enable or disable automatic transmission of frame once per frame at the valid start of the frame.

- Note: Automatic transmission of this message begins on the first frame after the frame during the enable message was received.

ID: **3**

Type: **Mode**

- Description: Enable or disable automatic frame transmission of specified frame once per second at the valid end of the specified frame (before the sync word).

- Note: Automatic transmission of this message begins on the first occurance of the specified transmit frame. If an invalid frame value is specified for the type of time code being processed this mode will not be enabled.

ID: **15**
Type: **Query**

- Description: Request time information

ID: **17**
Type: **Query**

- Description: Request time/date information

- Note: This query will be ignored unless the "Auto Date Set" (SW1-7) switch is in the ON position.

ID: **18**
Type: **Query**

- Description: Request hour BCD

- Note: The two MSB's of the high nibble will also contain the status of unassigned bit addresses 59 and 58, respectivly.

ID: **19**
Type: **Query**

- Description: Request minute BCD

- Note: The MSB of the high nibble will also contain the status of unassigned bit address 43.

ID: **20**
Type: **Query**

Description: Request second BCD

Note: The MSB of the high nibble will also contain the the status of unassigned bit address 27.

Command format:

ID: **21**
Type: **Query**

Description: Request frame BCD

Note: The two MSB's of the high nibble will also contain the color frame flag (bit address 11) and drop frame flag (bit address 10), respectively.

ID: **22**
Type: **Query**

Description: Request user groups 1 & 2 BCD

Note: User group 1 is packed in the high nibble of the the response, user group 2 in the low.

ID: **23**
Type: **Query**

Description: Request user groups 3 & 4 BCD

Note: User group 3 is packed in the high nibble of the the response, user group 4 in the low.

ID: **24**
Type: **Query**

Description: Request user groups 5 & 6 BCD

Note: User group 5 is packed in the high nibble of the the response, user group 6 in the low.

ID: **25**
Type: **Query**

Description: Request user groups 7 & 8 BCD

Note: User group 7 is packed in the high nibble of the the response, user group 8 in the low.

ID: **26**
Type: **Query**

Description: Request time code type

Note: The time code type response 255 (undetermined) indicates that time code has not yet been applied to the TCI-232.