Burle Data Formats

28 September 2000

1 Burle equipment

We have three diffrent Burle systems that are available for testing. These are described in Section 2, page 2 (which describes the new Burle matrix), Section 3, page 2 (which describes the old Burle matrix) and Section 4, page 2 (which describes a Burle equivalent of our KBD-300.

For data format testing I usually used the "Iris open" button on the keyboard. This was because all three keyboards had an "Iris" key and I could easly send just one command at a time. (With the knob I had trouble being sure that I sent only one command for each twist.)

1.1 Bi-phase data format

Item	New	Old	KBD-300eq
Iris duration	2.9 ms	2.6 ms	724 μs
Command repeat	32 ms	—	1 ms
Command count	2 times	—	8 times
Pulse rate	31.25 KHz	31.25 KHz	31.25 KHz
Sync	4-32 μs + 1 64 μs pulse(s)		
Data 0 (or 1)	48 μs pulse		
Data 1 (or 0)	32 μs pulse		

A 48 μs pulse means that the pulse is in one state (high or low) for 32 μs and is then in the other state for 16 μs. Giving a total pulse duration of 48 μs

A 32 μs pulse means that the pulse is in one state (high or low) for 16 μs and is then in the other state for 16 μs. Giving a total pulse duration of 32 μs.

[1] `$Header: d:/ecr6171/RCS/datafmt.tex,v 1.1 2000-06-27 12:20:41-07 Hamilton Exp Hamilton $`

2 "New" Burle Matrix System

Model	Quanity	Name
LTC 8801/60	1	Matrix card cage
TC8805	1	Matrix power supply
LTC 8553/00	1	Variable speed keyboard
TC8821VIM	1	32 channel video input card
TC8834VOM	1	4 channel video output card
TC8810A	1	CPU card
LTC 8059/00	1	PC based support software

3 "Old" Burle Matrix System

Model	Quantity	Name
TC 8501	1	Matrix card cage
TC 8505	1	Matrix power supply
TC 8550	1	Keyboard
TC 8520VIM	8	8 channel video input card
TC 8332VOM	4	4 channel video output card
???	1	"Microcomputer Adapter" CPU card
TC 8560	1	Code Distribution Unit

4 "KBD-300" equivalent hardware

Model	Quantity	Name
LTC 5136/50	1	Autodome Controller, Philips (PAL)
LTC 5138/50	1	Virtual Keyboard

1. 2 small black boxes ($2\frac{1}{4}'' \times 4\frac{1}{4}'' \times 1\frac{1}{4}''$) marked "`303-2746-501`" with screw terminals on one end and a power connector and RJ-11 connector on the other end.

   Internally the little boxes have in them:

   - An 8 MHz crystal.
   - An 8051??
   - A bridge rectifier.
   - Transformer output.
   - RS-232 input.
   - +5 V and +12 V voltage regulators.

2. 2 TC220PS power supplies, with 240 V AC in and 15 V DC out.

3. 2 RJ-11 cables "silver" wired with 6 conductors.

4. 1 DB-9-F to RJ-11 adapter. 2 = GN, 3 = RE and 5 = BK on the DB-9 going to pins 3 (GN), 4 (RE) and 5 (BK) (when viewed from the front) on the RJ-11. (All other pins are either empty or cut off.)

From looking at the two small boxes, I believe that they take in RS-232 and put out Manchester bi-phase coded commands. This implies that the Burle KBD-300 keyboard probably speaks RS-232 which should be easy to monitor with Breakout.