Sector Collector to Track Finder interface

(designed for "Oct 2004 test beam")

(V1.0 sep 2004)

❑ MB1(2) Up-Track Input (from SC receiver board)

Flat cable	Bit	Data content	Notes	Null value
A - Lower	0-9	ϕr = 0-9		0
A - Lower	10		LVDS Lock (0=locked)	
A - Lower	16-17	ϕr = 10-11	11 = sign bit, comp. 1	0
A - Lower	18-25	ϕb = 0-7		0
A - Lower	26		LVDS Lock (0=locked)	
A - Upper	0-1	ϕb = 8-9	9 = sign bit, comp. 1	0
A - Upper	2-4	Quality = 0-2	Encoded	0x7
A - Upper	5	I/II trk	0=1st; 1=2nd	0
A - Upper	6	BC0	From TTC, -ve logic	1
A - Upper	7	Parity	Bit 0-25; 0/1=even/odd	0
A - Upper	8	Calibration	From CCB, -ve logic	0
A - Upper	9	CCB ok	+ve logic	1
A - Upper	10		LVDS Lock (0=locked)	
A - Upper	16-23	Trig.Theta = 0-7	DT wire mapping ?	?
A - Upper	24-25	BX# = 0-1	From TTC	---
A - Upper	26		LVDS Lock (0=locked)	

❑ MB1(2) Down-Track Input (from SC receiver board)

Flat cable	Bit	Data content	Notes	Null value
B - Lower	0-9	ϕr = 0-9		0
B - Lower	10		LVDS Lock (0=locked)	
B - Lower	16-17	ϕr = 10-11	11 = sign bit, comp. 1	0
B - Lower	18-25	ϕb = 0-7		0
B - Lower	26		LVDS Lock (0=locked)	
B - Upper	0-1	ϕb = 8-9	9 = sign bit, comp. 1	0
B - Upper	2-4	Quality = 0-2	Encoded	0x7
B - Upper	5	I/II trk	0=1st; 1=2nd	0
B - Upper	6	BC0	From TTC, -ve logic	1
B - Upper	7	Parity	Bit 0-25; 0/1=even/odd	0
B - Upper	8	Calibration	From CCB, -ve logic	0
B - Upper	9	CCB ok	+ve logic	1
B - Upper	10		LVDS Lock (0=locked)	
B - Upper	16-23	HL.Theta = 0-7	DT wire mapping ?	?
B - Upper	24	BC0.Theta	From TTC, -ve logic	---
B - Upper	25	Trigger Out	From CCB (logic?)	---
B - Upper	26		LVDS Lock (0=locked)	

❑ MB1(2) Output track (to track finder)

This is the sorted track between up and down tracks.
The sorting is based on track quality.

Bit	Data
0	1 bit parity (1-15)
1-12	12 bit Phi_ r
13-22	10 bit Phi_b
23-25	3 bit Quality
26	1 bit I/II track
27	1 bit Calibration tag
28	1 bit BX0
29-30	2 bit BX counter LSB
31	1 bit parity (16-30)

❑ General remarks

- MB2 = MB1
- The Trigger Server inverts the track quality bits. These are re-inverted at the output of the "Sector Collector to Track Finder" interface. This means:
    - on Input, a null track is defined by Quality bits = 0x0
    - on Output, a null track is defined by Quality bits = 0x7