Last DSM Input Bit List

6th March 2008

Input Channel	Bit Description
0	CTB Multiplicity Bits 0:15 – Multiplicity
1	VTX Information Bit 0 – BBC TAC difference in window Bit 1 – ZDC TAC difference in window Bit 2 – BBC East small-tile ADC sum over threshold 0 Bit 3 – BBC West small-tile ADC sum over threshold 0 Bit 4 – BBC East large-tile ADC sum over threshold 0 Bit 5 – BBC West large-tile ADC sum over threshold 0 Bit 6 – ZDC East ADC sum over threshold 0 Bit 7 – ZDC West ADC sum over threshold 0 Bit 8 – ZDC East TAC in window Bit 9 – ZDC West TAC in window Bit 10 – ZDC East+West attenuated sum over threshold Bit 11 – BBC East small-tile ADC sum over threshold 1 Bit 12 – BBC West small-tile ADC sum over threshold 1 Bit 13 - Unused Bit 14 – ZDC East ADC sum over threshold 1 Bit 15 – ZDC West ADC sum over threshold 1
2	VPD, MTD, pp2pp and more CTB Information Bit 0 – VPD TAC difference in window-0 Bit 1 – VPD TAC difference in window-1 Bit 2 – VPD East ADC sum over threshold 0 Bit 3 – VPD West ADC sum over threshold 0 Bit 4 – VPD East ADC sum over threshold 1 Bit 5 – VPD West ADC sum over threshold 1 Bit 6 – MTD trigger Bit 7 – pp2pp ET trigger Bit 8 – pp2pp IT trigger Bit 9 – pp2pp IEV (vertical East inelastic trigger component) Bit 10 – pp2pp IEH (horizontal East inelastic trigger component) Bit 11 – pp2pp Single Roman Pot hit trigger Bits 12:13 - Unused Bit 14 – CTB Topology flag (i.e. no hits on the top or bottom of the CTB and a few hits on the North and South sides). The topology flag can be vetoed by the presence of either out-of-time hits or an overflow. The veto configuration is set up using a register in the CB201 DSM. Bit 15 – CTB LED flag
3	EMC Information Bits 0:1 – Barrel JP bits (thresholds #0, #1 and #2 coded into 2 bits) Bits 2:3 – Barrel HT bits (thresholds #0, #1 and #2 coded into 2 bits) Bit 4 – Barrel Etot > threshold Bit 5 – Barrel J/Ψ topology flag. Bit 6 – Barrel HT.TP bit (uses HT threshold #3) Bit 7:8 – Endcap JP bits Bits 9:10 – Endcap HT bits Bit 11 – Endcap Etot Bit 12 – Endcap HT.TP Bit 13 - Barrel HT threshold #3

	Bit 14 = Endcap HT threshold #3 Bit 15 – Barrel+Endcap Etot
4	Miscellaneous Information from RAT Board Bit 0 – TOF Bit 1 – Unused Bit 2 – Detector group 0 status (1=live, 0= busy) Bit 3 – Detector group 1 status Bit 4 – Detector group 2 status Bit 5 – Detector group 3 status Bit 6 – Detector group 4 status Bit 7 – Detector group 5 status Bit 8 – Detector group 6 status Bit 9 – Detector group 7 status Bit 10 – Unused Bit 11 – FMS LED Bits 12:15 - Unused
5	FPD Information Bit 0 – FMS HT threshold-0 Bit 1 - FMS HT threshold-1 Bits 2:4 – Unused Bit 5 – Any FPD-East module > threshold-1 Bit 6 – Any FPD-East module > threshold-2 Bit 7 – Both FPD-East modules > threshold-0 AND sum > threshold-3 Bits 8:15 - Unused
6	Special Trigger Requests Bits 0:2 – selected special trigger request (zero if no request) Bits 3:6 – detector number (0:15) of detector making request Bits 7:13 – Unused Bit 14 – Zero-bias bit Bit 15 – Random bit
7	Unused