note: need to update tier1 file list for each bit set

dAu TCU input from last DSM
tier1 file is trg_071129.bin

Bit	Name	Description
0	MTD	MTD bit : requires both ends of at least one MRPC
1	TOF	RAT0 bit (currently any TOF>0)
2	FMS-fast	Place holder: at least one HT>th1
3	FMS-slow	Place holder : at least one HT>th2
4	FPDE	Place holder: at least one HT>th3
5	UPCJpsi	ZDCW sum > th1, valid TAC for this hit Any BBC Large > th1 as veto CTB UPC topology bit + BEMC topology bit
6	EHT	Any EEMC tower > EHTth
7	BHT1	2 bits for three BEMC HT ordered thresholds
8	BHT2	Ordered HT thresholds
9	BHT4	Any BEMC high-tower > BHTth 4
10	VPD	VPD bit : >0 VPDE ADC > th w/ valid TAC && >0 VPD W ADC >th w/ valid TAC and TAC difference in window
11	VPD_pre	Same as 10 w/ LD301 prescale
12	BBC	Small: any BBCE ADC > th w/valid TAC && any BBCW ADC >th w/valid TAC && TAC difference in window
13	BBC_pre	Same as 12 w/ LD301 prescale
14	ZDCE_pre	ZDCE sum > th && valid TAC w/ LD301 prescale
15	Zerobias	Zerobias bit set

looks like 4 HT thresholds for barrel and 1 HT threshold for endcap
one prescale in LD301 for ZDCE, one for VPD, and one for BBC

pp TCU input from last DSM
tier1 is trg_080307.bin

Bit	Name	Description
0	MTD_VPD	MTD bit : requires both ends of at least one MRPC
1	TOF	RAT0 bit
2	FMS-pre	At least one FMS HT > th1 and Prescale set in reg.1 for LD301
3	FMS-slow	at least one FMS HT>th1
4	FPDE	at least one FPDE HT>th0 or FMS LED
5	ETOT	BEMC TP sum + EEMC TP sum w/ register to select BEMC, EEMC, or both to compare to threshold
6	BHT-bit1	Encode 3 HT thresholds (for electron work) with 2 bits : 0==HT<BHTth0; 1==BHTth0<HT<BHTth1; 2==BHTth1<HT<BHTth2; 3==HT>BHTth2
7	BHT-bit2	"
8	EJP0	Any EEMC jet patch above EJPth0
9	JP1	(any BEMC JP > BJPth0) OR (any EEMC JP > EJPth1)
10	JP2	(any BEMC JP > BJPth1) OR (any EEMC JP > EJPth2)
11	HT	(BEMC HT > BHTth3) OR (EEMC HT > EHTth0)
12	VPD	VPDE ADC > th w/ valid TAC && >0 VPD W ADC >th w/ valid TAC and TAC difference in window
13	BBC	Small: any BBCE ADC > th w/valid TAC && any BBCW ADC >th w/valid TAC && TAC difference in window
14	BBC_pre	Same as 13 with LD301 prescale
15	Zerobias	Zerobias bit set

3 thresholds for endcap JP, 1 for endcap HT, 2 for barrel JP with 4 for barrel HT, I threshold for BEMC+EEMC sum, one prescale in LD301 for BBC

tune TCU input from last DSM
tier1 file is tune_071129.bin, or tune_080306.bin

Bit	Def	Description
0	CTB	CTB multiplicity > threshold 0
1	VPDE	VPD East ADC sum > threshold 0
2	VPDW	VPD West ADC sum > threshold 0
3	BBC TAC	BBC TAC difference in window
4	ZDC TAC	ZDC TAC difference in window
5	BBC E	BBC East small tile ADC sum > threshold 0
6	BBC W	BBC West small tile ADC sum > threshold 0
7	ZDC E	ZDC East ADC sum > threshold 0
8	ZDC W	ZDC West ADC sum > threshold 0
9	ZDCE TAC	ZDC East TAC in window
10	ZDCW TAC	ZDC West TAC in window
11	ZDCASUM	ZDC E+W attenuated sum > threshold
12	RAT0	Bit 0 from RAT board
13	RAT1	Bit 1 from RAT board
14	Random	Random rate bit
15	Zerobias	Zero bias rate bit

pp2pp Bit set

Bit	Def	Description
0	ET	
1	IT	
2	IEV	
3	IEH	
4	Single hit	OR of 8 PMTs
5	CTB	CTB ADC sum > th0
6	VPD	VPD ADC sum > th0
7	BBC	BBCE.W
8	FMS	
9	BEMC HT(0)	
10	BEMC JP(0)	
11	EEMC HT(0)	
12	RAT0	Bit 0 from RAT board
13	RAT1	Bit 1 from RAT board
14	Random	Random rate bit
15	Zerobias	Zero bias rate bit