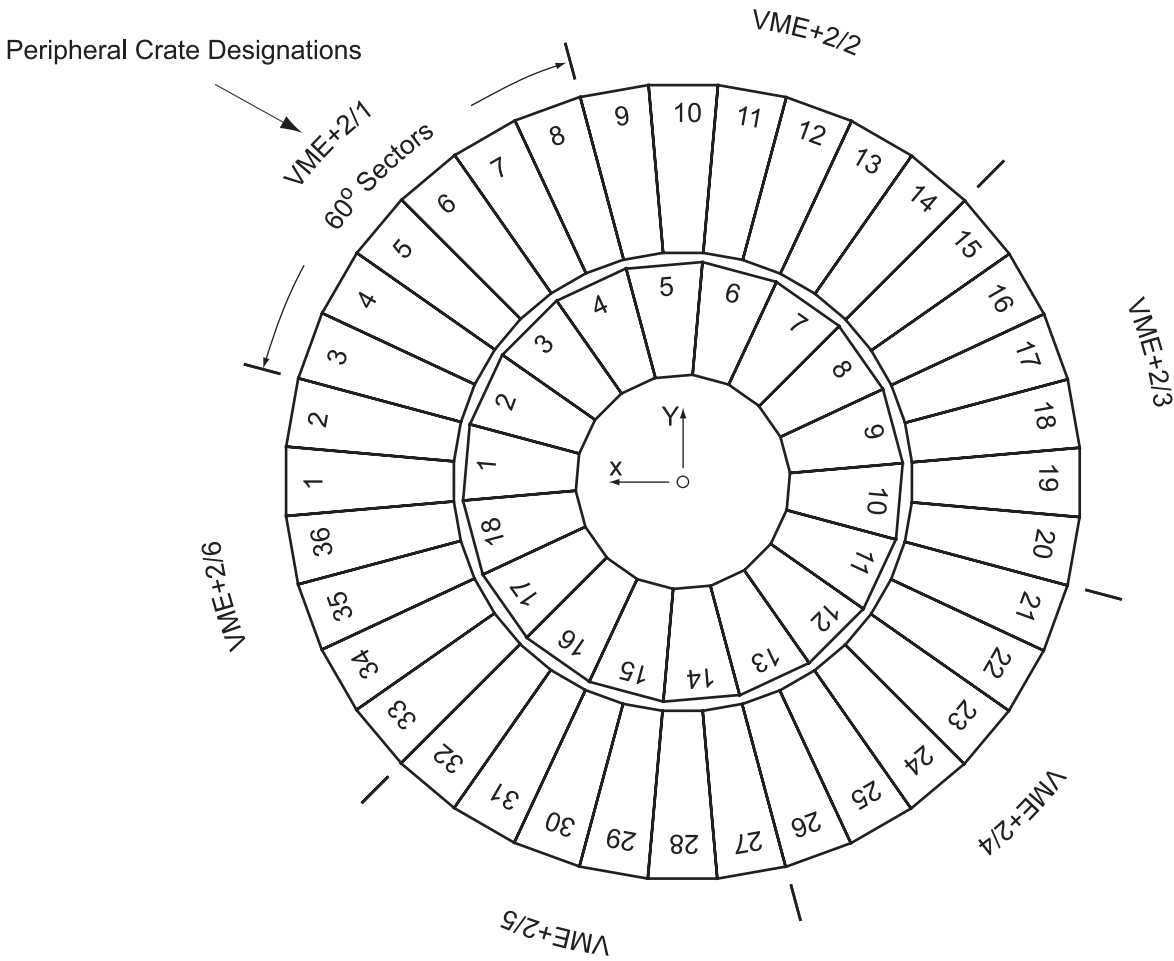


Peripheral Crate - to - Chamber Correspondence and Slot Assignments

Compiled by Ben Bylsma (8 pages)
14-Aug-06

Peripheral Crate and Slot Assignments per Chamber													
Peripheral Crate					Chamber Type and Chamber Number								
	Crate #	Trigger Sector	Rack (+,-)	Position in Rack	ME(+,-)(1)/1			ME(+,-)(1)/2			ME(+,-)(1)/3		
VME(+,-)(1)/	1	6	X3(J,V)31	Top	36	1	2	36	1	2	36	1	2
	2	1	X5(U,E)31	Bottom	3	4	5	3	4	5	3	4	5
	3		X5(U,E)31	Top	6	7	8	6	7	8	6	7	8
	4	2	X5(R,L)31	Top	9	10	11	9	10	11	9	10	11
	5		X5(R,L)31	Bottom	12	13	14	12	13	14	12	13	14
	6	3	X3(A,S)31	Top	15	16	17	15	16	17	15	16	17
	7		X3(A,S)31	Bottom	18	19	20	18	19	20	18	19	20
	8	4	X1(R,L)31	Top	21	22	23	21	22	23	21	22	23
	9		X1(R,L)31	Bottom	24	25	26	24	25	26	24	25	26
	10	5	X1(U,E)31	Bottom	27	28	29	27	28	29	27	28	29
	11		X1(U,E)31	Top	30	31	32	30	31	32	30	31	32
	12	6	X3(J,V)31	Bottom	33	34	35	33	34	35	33	34	35
Crate Slot Numbers				TMB	2	4	6	8	10	14	16	18	20
				DMB	3	5	7	9	11	15	17	19	21
	Crate #	Trigger Sector	Rack (+,-)(2,3,4)	Station (2,3,4) Pos. in Rack	ME(+,-)(2,3,4)/1			ME(+,-)(2,3,4)/2					
VME(+,-)(2,3,4)/	1	1	X5(U,E)(41,41,51)	(top,bot,bot)	2	3	4	3	4	5	6	7	8
	2	2	X5(R,L)(41,41,51)	(top,bot,bot)	5	6	7	9	10	11	12	13	14
	3	3	(+ X3A(41,41,51)	(top,bot,top)	8	9	10	15	16	17	18	19	20
			(-) X3S(41,41,51)	(bot,top,top)									
	4	4	X1(R,L)(41,41,51)	(bot,top,top)	11	12	13	21	22	23	24	25	26
	5	5	X1(U,E)(41,41,51)	(top,bot,bot)	14	15	16	27	28	29	30	31	32
6	6	(+ X3J(41,41,51)	(bot,top,bot)	17	18	1	33	34	35	36	1	2	
		(-) X3V(41,41,51)	(top,bot,bot)										
Crate Slot Numbers				TMB	2	4	6	8	10	14	16	18	20
				DMB	3	5	7	9	11	15	17	19	21

Idealized View of EMU CSC Chambers (Stations 2,3,&4)



Peripheral Crate to CSC Chamber Correspondence (for stations 2,3,&4):

Total of 9 chambers per peripheral crate.

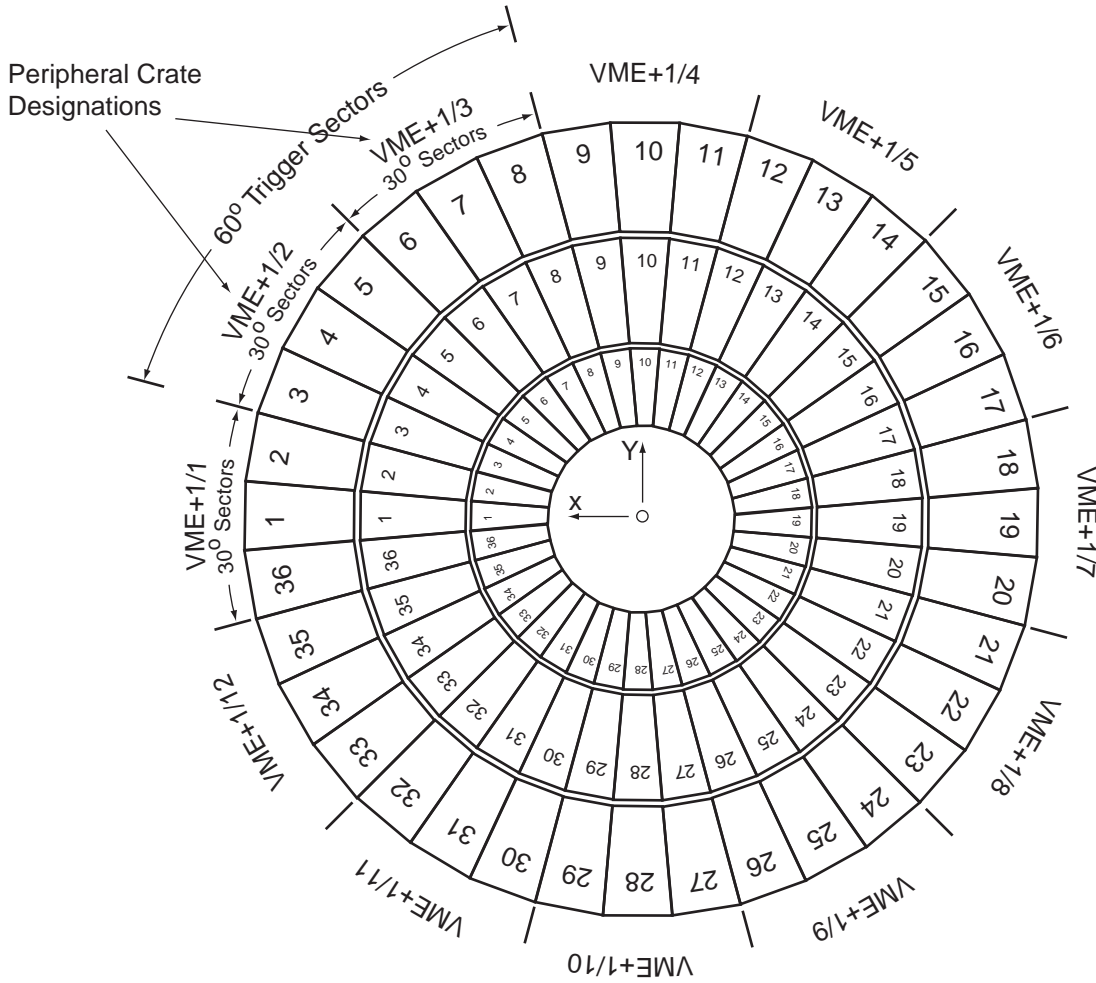
$$\text{Chamber Numbers} = \begin{cases} [(3*(n-1) + (2,3,4)-1) \text{ modulo } 18] + 1 & \text{for } 20^\circ \text{ chambers} \\ [(6*(n-1) + (3,4,5,6,7,8)-1) \text{ modulo } 36] + 1 & \text{for } 10^\circ \text{ chambers} \end{cases}$$

Where: n = Trigger sector # (1 to 6)

Note: Chamber numbering starts with chambers along the positive X axis.
Starting with 1, the numbers increase in the ϕ direction.
(This definition holds regardless of point of view.)

Trigger Sector #	/1 Chambers	/2 Chambers
1	2,3,4	3,4,5,6,7,8
2	5,6,7	9,10,11,12,13,14
3	8,9,10	15,16,17,18,19,20
4	11,12,13	21,22,23,24,25,26
5	14,15,16	27,28,29,30,31,32
6	17,18,1	33,34,35,36,1,2

Idealized View of EMU CSC Chambers (Station 1)



Peripheral Crate to CSC Chamber Correspondence (for station 1):
Total of 9 chambers per peripheral crate.

$$\text{Chamber Numbers} = \left[\left(3(n-1) + (35, 36, 37) \right) \text{ modulo } 36 \right] + 1$$

Where: $n=30^\circ$ sector # (1 to 12)

Repeat for /1, /2, /3 chambers

Note: Chamber numbering starts with chambers along the positive X axis.
Starting with 1, the numbers increase in the f direction.
(This definition holds regardless of point of view.)

30° Sector #	/1 Chamb.	/2 Chamb.	/3 Chamb.	30° Sector #	/1 Chamb.	/2 Chamb.	/3 Chamb.
1	36,1,2	36,1,2	36,1,2	7	18,19,20	18,19,20	18,19,20
2	3,4,5	3,4,5	3,4,5	8	21,22,23	21,22,23	21,22,23
3	6,7,8	6,7,8	6,7,8	9	24,25,26	24,25,26	24,25,26
4	9,10,11	9,10,11	9,10,11	10	27,28,29	27,28,29	27,28,29
5	12,13,14	12,13,14	12,13,14	11	30,31,32	30,31,32	30,31,32
6	15,16,17	15,16,17	15,16,17	12	33,34,35	33,34,35	33,34,35

Slot Assignments

Correspondence of CSC Chambers to Peripheral Crate Slots. (For Station 1)

Two VME crates serve a 60° sector (30° sector/crate).

A VME crate has 21 slots.

Even numbered slots are TMBs.

Odd numbered slots are DMBs.



Exceptions:

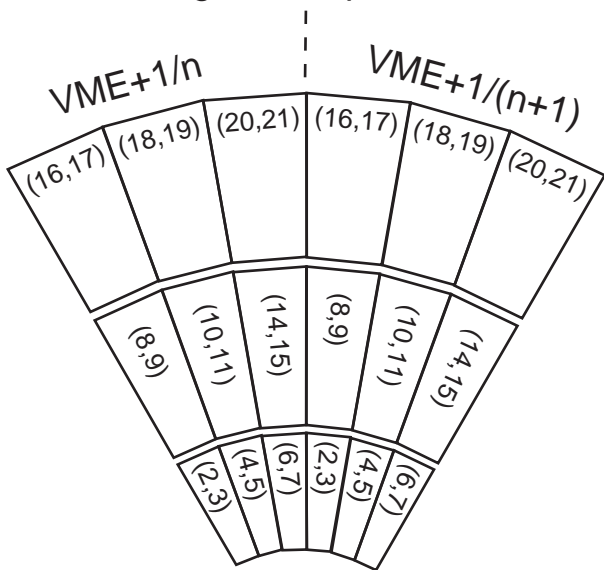
Slot 1 is crate controller

Slot 12 MPC

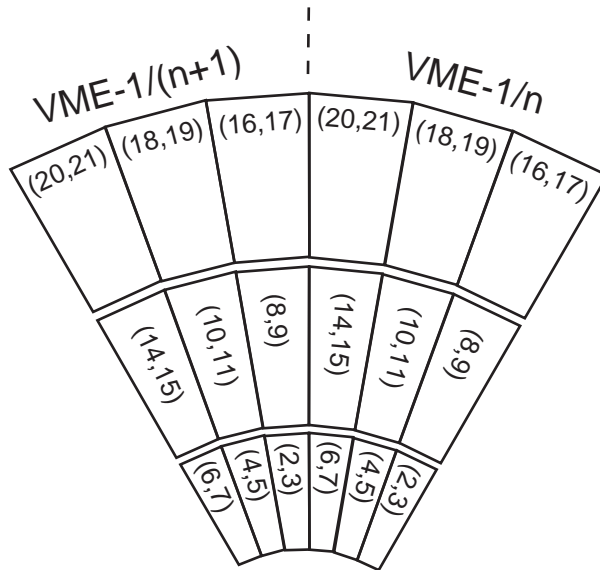
Slot 13 CCB

Slot number assignments are shown in pairs as (TMB slot #, DMB slot#)

Slot assignments per 30° sectors:



Looking in +Z direction



Looking in -Z direction

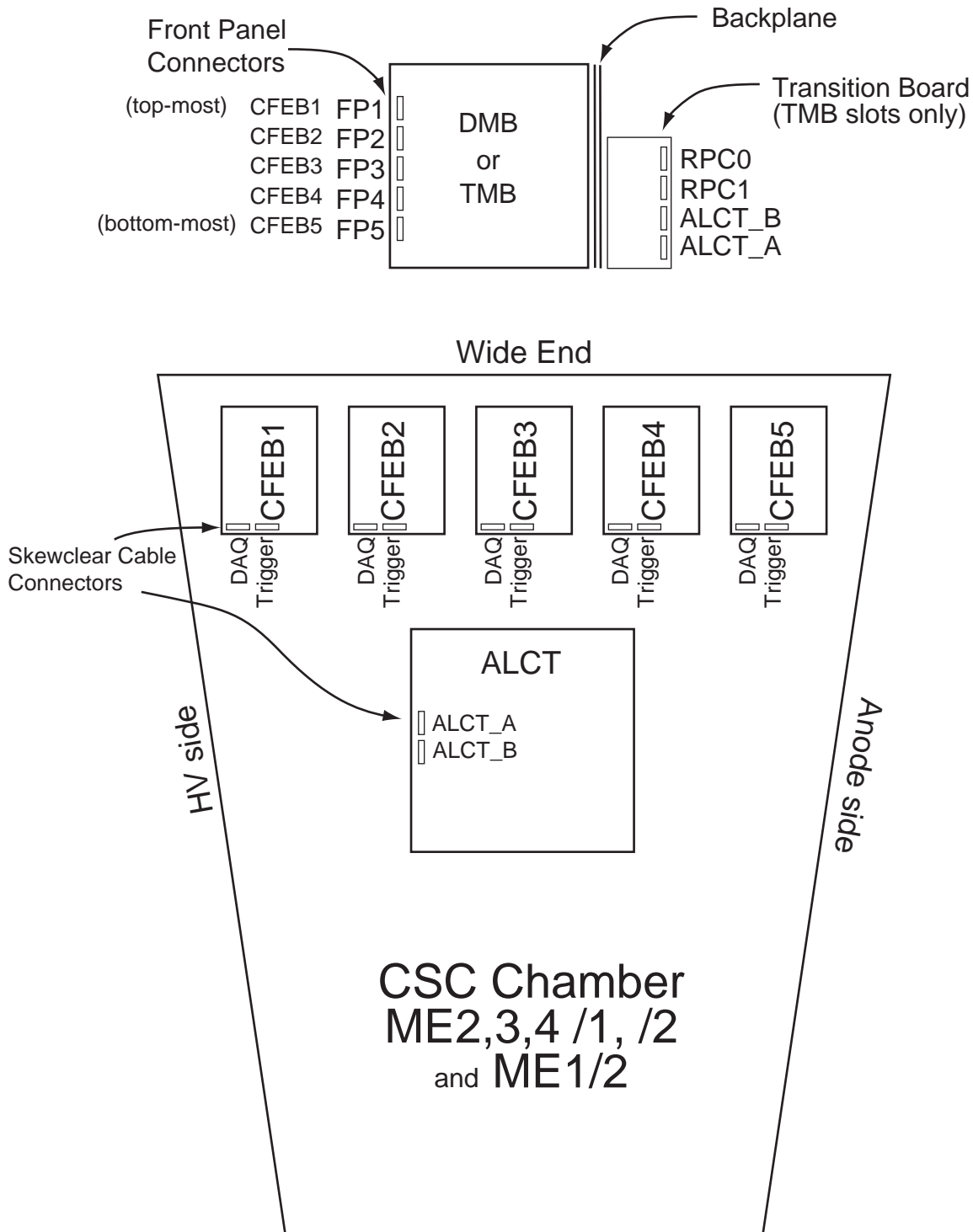
Example Peripheral Crate: VME+1/9

Slot:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
VCC	VME Crate Controller																				
TMB	ME+1/1/24																				
DMB	ME+1/1/25																				
TMB	ME+1/1/26																				
DMB	ME+1/2/24																				
TMB	ME+1/2/25																				
DMB	Muon Port Card																				
MPC	Clock and Control Board																				
CCB	ME+1/2/26																				
TMB	ME+1/3/24																				
DMB	ME+1/3/25																				
TMB	ME+1/3/26																				
DMB																					

Front Panel Connections: ME2,3,4 /1, /2 and ME1/2

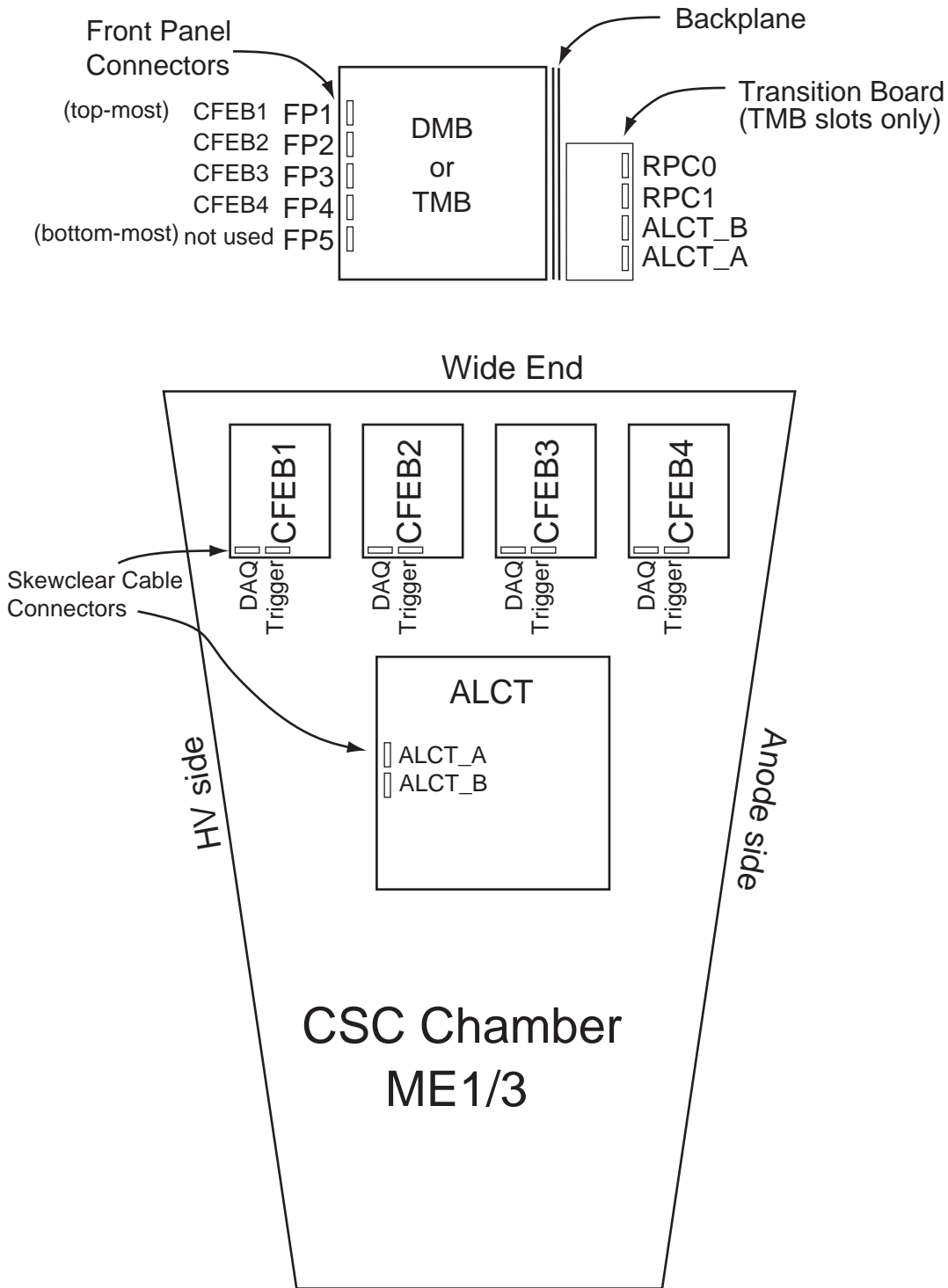
The TMBs and DMBs are connected to CFEBs via Skewclear cables.
The CFEBs are designated CFEB1 thru CFEB5 with CFEB1 near the HV side of the chamber and CFEB5 near the Anode side.

The top-most Skewclear connection on the TMB or DMB corresponds to CFEB1 and the bottom-most to CFEB5.



Front Panel Connections: ME1/3

The TMBs and DMBs are connected to CFEBs via Skewclear cables. The CFEBs are designated CFEB1 thru CFEB4 with CFEB1 near the HV side of the chamber and CFEB4 near the Anode side. The top-most Skewclear connection on the TMB or DMB corresponds to CFEB1 and the next to bottom-most to CFEB4. The bottom-most connector is left unused. The bottom-most connector is left unused.



Front Panel Connections: ME1/1a, and ME1/1b

The TMBs and DMBs are connected to CFEBs via Skewclear cables.

The CFEBs for ME1/1b are designated CFEB1 thru CFEB4 with CFEB1 near the HV side of the chamber and CFEB4 near the Anode side on the wide end.

There is only one CFEB for ME1/1a on the narrow end.

The top-most Skewclear connection on the TMB or DMB corresponds to CFEB1 on ME1/1b and the next to bottom connection to CFEB4 on ME1/1b.

The bottom-most connector corresponds to CFEB1 on ME1/1a.

The bottom-most connector corresponds to CFEB1 on ME1/1a.

