

## Sparsifier Rejection Ratios and Output Rates

	case 1	case 2	case 3	case 4	unit
<b>Cluster width (center channel plus neighbors)</b>	<b>5</b>	<b>5</b>	<b>3</b>	<b>3</b>	<b>channel</b>
<b>Sparsifier Acceptance Window, threshold + OOT</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>2</b>	<b>BC</b>
Preamp Pulse Width (time above threshold)	6	6	6	6	BC
Beam test occupancy (given acceptance window below)	2%	2%	2%	2%	cluster/channel
Beam test acceptance window (16+Pulse Width -1 )	21	21	21	21	BC
Sparsifier Acceptance Window, threshold cut only (1+Pulse Width-1)	6	6	6	6	BC
Reciprocal of beam test occupancy	50	50	50	50	
Sparsifier's zero suppression ratio, threshold cut only	175	175	175	175	
Sparsifier's zero suppression ratio, threshold + OOT	350	525	350	525	
Sparsifier's zero suppression ratio, threshold cut only, with neighbors >>>>	35	35	58	58	
Sparsifier's zero suppression ratio, threshold + OOT, with neighbors >>>>	70	105	117	175	
Input bandwidth per chamber (16 bit/sample)	800.0	800.0	800.0	800.0	Mbyte/s/chamber
Output rate per chamber, threshold cut only >>>>	22.9	22.9	13.7	13.7	Mbyte/s/chamber
Output rate per chamber, threshold + OOT >>>>	11.4	7.6	6.9	4.6	Mbyte/s/chamber

### Notes:

Data rates do not include protocol overhead, e.g., header/trailer, a channel number for each cluster, etc.

Beam test occupancy approximates worst case ATLAS occupancy, including the factor of five safety factor.

This spreadsheet models precision channels. Transverse channels have four times higher occupancy, but a cluster width of one channel.