

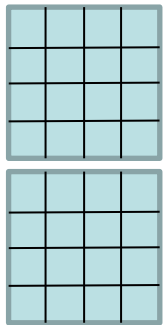
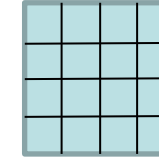
CALOROC status vs FEB

March 2025

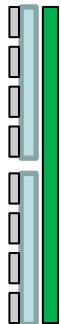
Frederic DULUCQ – fdulucq@in2p3.fr
Ecole Polytechnique – CNRS

- ❑ CALOROC - all versions – 17x17 mm
 - ❑ 36 channels
 - ❑ Outputs: 2 serial links for data (1,28 Gbps)
 - ❑ Connected to LpGBT has 7 inputs (1,28 Gbps)

- ❑ SiPM board with 16 SiPM (20x20 mm total)



Front view



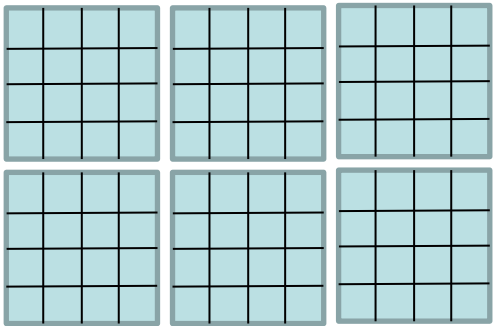
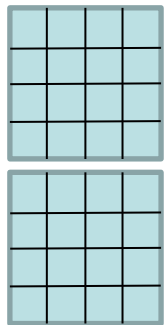
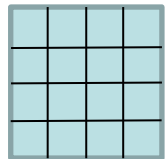
Side view

FEB perpendicular to SiPM board
Interposer needed for connectors

Solutions with independent channels

- ❑ CALOROC - all versions – 17x17 mm
 - ❑ 36 channels (100% usage is ≥ 32 ch)
 - ❑ Outputs: 2 serial links for data (1,28 Gbps)
 - ❑ Connected to LpGBT has 7 inputs (1,28 Gbps)
 - ❑ 100% usage is 6 or 7 inputs

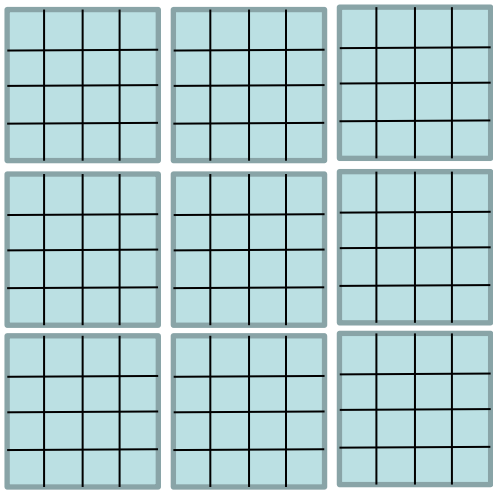
- ❑ SiPM board with 16 SiPM (20x20 mm total)



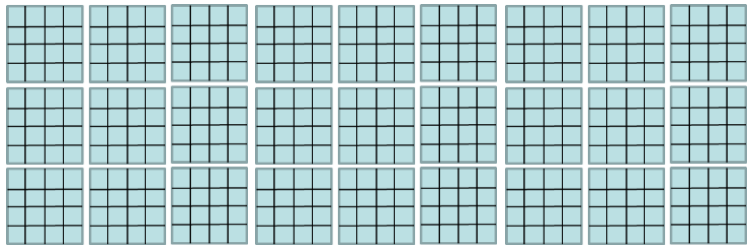
ASIC # (usage)	1 (50%)	1 (100%)	3 (100%)
FEB width	18 mm	38 mm	38 or 58 mm
FEB length	~ not constrained	~ not constrained	~ not constrained
LpGBT # (usage)	1 (15%)	1 (30%)	1 (100%)
Remarks	Need smaller package ?		optimum

Solutions with sums by 4

- ❑ CALOROC - all versions – 17x17 mm
 - ❑ 36 channels (100% usage is ≥ 32 ch)
 - ❑ Outputs: 2 serial links for data (1,28 Gbps)
 - ❑ Connected to LpGBT has 7 inputs (1,28 Gbps)
 - ❑ 100% usage is 6 or 7 inputs



- ❑ SiPM board with 16 SiPM (20x20 mm total)



ASIC # (usage)	1 (100%)		3 (100%)
FEB width	58 mm		58 mm or 174 mm
FEB length	~ not constrained		~ not constrained
LpGBT # (usage)	1 (30%)		1 (100%)
Remarks			optimum

- ☐ Is it possible to use only 3×2 (independent) solutions ?
 - ☐ In this case how many crystals are not connected ?
 - ☐ Unitary / alone crystals could be readout by non-optimum solution

- ☐ Same questions for 3×3 (and sums by 4)

