

III – MEMS MANUFACTURING

A – Introduction

For the 15th year since its inception, the CMP MEMS Program was developed. Microelectronics compatible processes based on silicon and gallium arsenide have been provided as well as MEMS specific manufacturing technologies. Up to 2008 microelectronics compatible technologies were the compatible front side bulk micromachining CMOS and BiCMOS from austriamicrosystems and P-HEMT GaAs from OMMIC. In 2007 0.6 CMOS Bulkmicromachining from CSMC was offered as well as the three MUMPs processes from MEMSCAP: PolyMUMPs, SOIMUMPs and MetalMUMPs. In 2008, CMP developed and introduced a 0.35 μ CMOS Bulkmicromachining based on the 0.35 μ processes from austriamicrosystems with test runs. In 2009, CMP officially offered the 0.35 μ Bulkmicromachining process to all customers. In 2010, CMP offered the SUMMiT V process from Sandia, which is an ultra planar specific MEMS process.

CMP distributes the design rules and design kits relative to all these processes.

In 2010, 27 MEMS circuits were fabricated in MEMSCAP PolyMUMPS, MetalMUMPS and SOIMUMPS technologies. Circuits fabricated at MEMSCAP were submitted several Canadian institutions gathered by CMC (Canadian Microelectronics Corporation, Kingston, Canada).

B – Circuits' list and processing for each run

See in II-B-1 the list of the manufactured circuits.

C – MEMS Process features

See Appendix 1.

D – MEMS Design Kits

See Appendix 9.