

From a **Dessert**-to-**OASIS** Development  
in Macao Microelectronics Industry  
to  
Macao **SWOT** in GBA

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SYNOPSIS Macau Limited

# Macao 澳门



...best known for its *Casino Chips*!



**Microelectronics Chips**





# Macao Microelectronics – Desert to Oasis

Chipidea Microelectronics (Macau) Ltd. Established in 2002  
 UM Professors as co-founder, engineers are U. Macau graduates

★ **CHIPIDEA** #1 Analog IP Supplier Worldwide (2004 – 2008)



Macao R&D team in HK Airport  
 Silicon IP design in Parrot ZIK:  
 the Most Advanced Headphone

M&Aed by SYNOPSYS (NASDAQ: SNPS) in May 2009

★ #1 EDA, #1 Interface, Analog and Embedded Memory IPs Supplier

Analog & Mixed-Signal IP Market Share ~18%

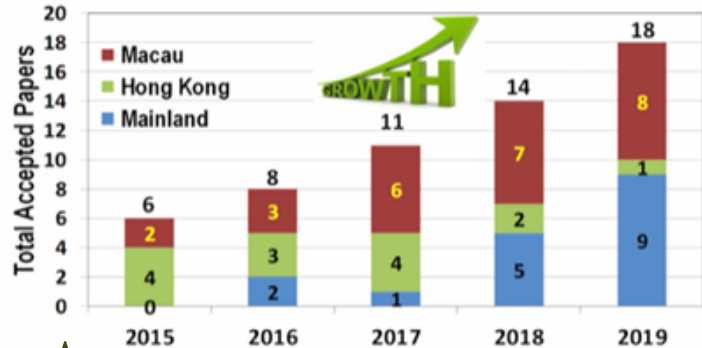
Connectivity IP Market Share ~45%

USB IP Market Share ~70%

The ONLY local enterprise won **4 times** Macau Science & Technology Award and the 1<sup>st</sup> Macau Business Award



## ISSCC China Paper Statistic & Trends (Past 5 Years)



Region	2015	2016	2017	2018	2019
Macau	U. Macau x 2	U. Macau x 3	U. Macau x 6	U. Macau x 7	U. Macau x 8
Hong Kong	HKUST x 4	HKUST x 3	HKUST x 3	HKUST x 3	HKUST x 1
Mainland:		Tsinghua U. ADI Shanghai	ADI Beijing	Fudan U. x 2 Peking U. UESTC ADI Beijing	Fudan U. x 3 Tsinghua U. x 2 Shanghai Jiao Tong U. Southeast U. ADI Beijing ADI Shanghai

First Author and First Affiliation (第一作者和第一机构)

Chip Olympic



State Key Laboratory of Analog and Mixed-Signal VLSI

From ground ZERO to a National State Key Lab



# SWOT 2002:CHIPIDEA@MACAO → 2019:MACAO@GBA

## STRENGTHS 优势

- ★  Well-trained Talents in Analog IC design
- World's recognized scientific research results
- Passion for practical application of researches
- Full commitment for the mission of a lifetime

### + TO ENHANCE

- ❖ Establish research lab. (elevated to State Key Lab. under government support)
- ❖ Boost advanced researches with well conforming to international trends

## WEAKNESSES 劣势

- No industrial design and management experience
- No experienced professionals to hire
- No creditability, No capital and Lack of government fund
- No market and sales channels

### - TO OVERCOME

- ❖ Partner w/ international enterprise for professional training ★
- ❖ Improve industry-university-research collaboration environment

## OPPORTUNITIES 机遇

- ★  Semiconductor disintegration reached analog IP layer
- Lack of analog expertise worldwide
- Booming IC industries in China & AP
- Unique Hub for Cross straits 4 grounds & AP

### + TO MAKE WELL USE OF

- ❖ Attract well trained talents
- ❖ Merge China and Asia Pacific market by well facilitating geographical advantages

## THREATS 威胁

- Lack of ecosystem, hard & soft infrastructure & conditions
- Brain drain in emerging industries
- Increased cost due to rapid economic growth
- Change of geographic advantages

### - TO LESSEN

- ❖ Build up local credibility and high-tech flag ★
- ❖ Exploit close cooperation and extension in mainland industrial zone

+ EXTENSIVE

- CONVERTIBLE

+ UNLIMITED

- DIMINISHED THREATS

## OPPORTUNITIES

MARKETS: Limited local market vs. Open & complementary market segments in GBA (benefits from rapid inter-city transportation) plus extended market at Portuguese-speaking countries, Incomplete ecosystem vs. Integration of GBA comprehensive industry ecosystem

TALENTS: Limited pool at experienced technology innovation vs. unique pool in specific S&T region, e.g. fields of SKLs, on-going local talent policy, talents in-depth collaboration in GBA

CAPITALS: Joint capitals in GBA w/ developing cross-boundary financial platform + Local and Joint capitals & government S&T and entrepreneurship funds

COSTS: Reasonable for an international & multicultural city w/ unique very low taxation, leveraging w/ extra sites at GBA

POLICIES: International free port w/ comprehensive free trade and IP protection law, continuously enhanced S&T funds and policies for supporting enterprises, prioritized youth entrepreneurial incubation (locally & jointly platform in GBA)