Attachment A

Unofficial Translation by Stewart and Stewart

National Guideline for the Development and Promotion of the Integrated Circuit Industry

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The integrated circuit (IC) industry is the core of the information technology industry, a strategic, fundamental, and pioneering industry; the current and future periods will be periods of important strategic opportunities and challenges; in order to promote the development of China’s integrated circuit industry, this outline is hereby formulated.

I. Current status and conditions

In recent years, driven by the market and policy support, the IC industry has developed rapidly, the overall competitiveness has significantly improved, the gaps in IC design and manufacturing capabilities with world-class companies have narrowed, packaging and testing technology has gradually approached international advanced level, certain key equipment and materials have been adopted by domestic and overseas supply chain, a set of internationally competitive backbone enterprises have emerged, and the industrial cluster effect is increasingly evident. Notwithstanding, the IC industry is faced with financing barriers for chip manufacturers, weak capacity for sustainable innovation, mismatch between industry development and market demand, lack of coordination within the value chain, imperfect policy environment, and other prominent problems, huge gaps exist between China and advanced countries (regions) in terms of industry development, and Chinese IC products are highly reliant on imports, making it hard to form strong support for building core national industrial competitiveness and guaranteeing cybersecurity.

At present, the global IC industry is entering a crucial stage of adjustment and reform. On one hand, structural adjustment of the global market is accelerating, investment has increased rapidly, and market shares are quickly concentrated towards leading companies. On the other hand, wireless and chips have experienced explosive growth, cloud computing, Internet of Things, big data, and other new business models have developed rapidly, and new trends have emerged with IC technology advancement. China is the world’s largest IC market, and market demand will continue to maintain rapid growth. Under the new conditions, the IC industry not only faces significant challenges, but also sees unique opportunities, and should therefore fully utilize market advantages, foster a good business environment, stimulate company vitality and creativity, promote coordinated and sustainable development of the value chain, accelerate the pace of catching up and surpassing, and strive to achieve rapid industrial development.

II. General requirements

i. Guiding ideology
Adopt the Deng Xiaoping Theory, the important thought of Three Represents, and the Scientific Outlook on Development as guidance, study and understand the spirit of the Party’s 18th Congress, the Second and Third Plenums of the 18th Central Committee, enforce and implement the decisions and deployment of the Party and the State Council, let market play a decisive role in the allocation of resources, better play the role of the government, highlight the leading role of the private sector, be demand-oriented, use equipment and system as anchors, design as steer, manufacturing as a foundation, and equipment and materials as support, use the innovation of technology, business models and institutions as drivers, break development bottlenecks, promote the IC industry to achieve breakthrough and overall improvement, realize rapid growth, and provide strong support for the transformation of the economy development model, national security and overall national competitiveness.

ii. Basic principles

Demand-driven: Depend on market advantages, focus on key equipment and information consumption demand, improve market adaptability and effective supply, and construct the “chip – software – equipment – system – information service” value chain.

Innovation-driven: Strengthen the leading status of private sector innovation, increase research and development, integrate with the National Science and Technology Major Special Project, achieve key technology breakthrough, and promote institutional innovation and the innovation of business models.

Integration of software and hardware: Enhance collaborative innovation of IC design and software development, drive software development through enhancement of hardware performance, promote hardware technology advancement through optimization of software, and promote overall improvement of the information technology industry.

Key breakthrough: Strengthen the integration of market demand and technology development, and realize rapid growth in key areas relevant to national security and with high market potential and good industrial foundation.

Opening-up and development: Fully utilize global resources, promote open and innovative development of the value chain, improve international cooperation, and strengthen China’s status and influence in global industrial competition.

iii. Development goals

By 2015, the IC industry development institutions and institutional innovation achieve significant improvement, and financing platform and policy environment suitable for the industry are established. The IC industry revenue exceeds 350 billion yuan. The IC design capability for wireless, telecom, and other key areas approaches world-class level. The production of 32/28-nm chips achieves economies of scale, middle- and high-end products account for over 30% of total packaging and testing revenues, and 65-45-nm key equipment, 12-inch silicon wafers, and other key materials are applied in the value chain.
By 2020, the gaps with international advance level narrow gradually, annual growth rate of industry revenues exceeds 20%, and sustainable development of the private sector is considerably improved. IC design in wireless, telecommunications, cloud computing, Internet of Things, big data, and other key areas reaches international advance level, and the industrial ecosystem is initially formed. The production of 16/14-nm chips achieves economics of scale, packaging and testing technology reaches international advance level, key equipment and materials enter the global value chain, and an advanced, safe, and secure IC industry value chain is developed.

By 2030, the IC industry value chain reaches international advance level, and a set of companies join the first tier of the global market and realize rapid development.

III. Main tasks and development priorities

i. Focus on developing the IC design industry.

Focus on the value chain of key areas, emphasize collaborative innovation of IC design, software development, system integration, and content and service, and promote manufacturing development through rapid growth of the design industry. In the short term, concentrate on wireless and telecommunications, develop wireless chips, digital TV chips, telecommunication chips, and wearable device chips and operating systems, and enhance overall competitiveness of the information technology industry. Utilize market mechanism, and guide and promote mergers, acquisitions, and restructuring of IC design companies. Accelerate the research and development of core technology in cloud computing, Internet of Things, big data, and other core emerging areas, develop information processors, transmitters, new storage, and other key chips and cloud operating system and other basic software based on new business models and new applications, and achieve leading-edge industrial development. Realize breakthrough categorically in smart SIM, smart grid, smart transportation, satellite GPS, industrial control, financial electronics, automobile electronics, pharmaceutical electronics, and other key IC and inserted software, and improve support for deep integration of informatization and industrialization.

ii. Accelerate the development of the IC manufacturing sector.

Accelerate the development of the IC manufacturing industry. Seize the favorable timing of technology transformation, overcome financing barriers, and promote the construction of advanced production lines. Accelerate capacity expansion for 45/40-nm chip production, accelerate production line construction for 32/28-nm chips, and rapidly develop production capabilities of economics of scale. Accelerate the development of SD process, and promote production line construction for 22/20-nm chips and 16/14-nm chips. Develop production lines for simulation and digital-model circuit, MEMS, high-voltage circuit, RF circuit, and other specialty processes. Strengthen comprehensive chip manufacturing capability, promote design improvement through process improvement, and drive development of key equipment and materials via production line development.

iii. Improve the development of the advanced packaging and testing industry.
Promote mergers, acquisitions, and restructuring of domestic packaging and testing companies and increase industry consolidation. Adapt to the evolution and upgrading demand of IC design and manufacture process, and carry out the development and commercialization of CSP, WLP, TSV, SD packaging, and other advanced packaging and testing technologies.

iv. Achieve breakthrough with key IC equipment and materials.

Strengthen the integration of IC equipment, materials, and processes, research and develop optical aligner, etcher, plasma implanter, and other key equipment, develop photoresist, large silicon wafers, and other key materials, strengthen collaboration between IC manufacturing companies and equipment and material companies, accelerate the industrialization process, and strengthen the industrial supply chain.

IV. Support measures

i. Improve organization and leadership.

Establish a National Integrated Circuit Industry Development Leading Group, responsible for overall planning and coordination of the IC industry promotion work, strengthen top-level design, integrate resources from all aspects, and resolve major problems. Establish a Consultative Committee, carry out investigation and research of major issues and policy measures, conduct discussion and evaluation, and provide consultation and recommendation.

ii. Establish a national industrial investment fund.

The National Industrial Investment Fund (hereinafter referred to as the “Fund”) mainly attract large companies, financial institutions and private investors, focus on supporting the development of the IC and other industries, and promote industrial transformation and upgrading. The Fund will operate based on market principles, focus on supporting IC manufacturing, as well as design, packaging and testing, equipment and materials, promote companies to improve capacity level, implement mergers, acquisitions, and restructuring, and standardize corporate governance, and develop virtuous, self-developing capabilities. Support local governments to establish IC industry investment funds. Encourage all kinds of private venture capital and equity investment funds to enter the IC industry.

iii. Increase financial support.

Make policy and commercial financing complement each other, support China Ex-Im Bank to increase services to IC companies (subject to its scope of business), encourage and guide China Development Bank to continue to increase credit support for the IC industry, and develop credit products and businesses suitable for the IC industry. Support IC companies to go public domestically and overseas, issue all kinds of debt financing instruments, and accelerate the development based on the National SME Share Exchange System. Encourage loan guarantee and insurance and credit insurance, and explore insurance products and services suitable for the IC industry.

iv. Implement tax support policy.
Further implement and enforce the State Council Circular on Printing and Issuing Certain Policies on Encouraging the Development of the Software Industry and Integrated Circuit Industry (Guofa [2000] No.18) and the State Council Circular on Printing and Issuing Certain Policies on Further Encouraging the Development of the Software Industry and Integrated Circuit Industry (Guofa [2011] No.4), accelerate the formulation and improvement of the relevant implementation and supporting measures, maintain policy stability, implement corporate income tax preferential policy for IC packaging, testing, and special material and equipment companies. Implement and improve corporate income tax, value-added tax, sales tax, and other tax policies supporting mergers, acquisitions, and restructuring of IC companies. Continue to implement import duty exemption policy for major eligible IC technology, equipment, products, key parts and raw materials, as well as key equipment, parts and raw materials for relevant science and technology major projects that cannot be produced domestically, and adjust duty-free import inventory or catalogue when appropriate.

v. Strengthen promotion and application of safe and secure software and hardware.

Organize and implement promotion schemes for key safe and secure software and hardware, adopt prioritization, one policy for one industry, and staged implementation as principles, and promote IC, basic software, and whole-machine systems that are advanced, safe and secure. Government procurement for all the social projects for increasing domestic demand, as well as major informatization projects supported by fiscal funds, shall be focusing on safe and secure software and hardware. Encourage basic telecommunications and internet companies to procure machines and systems based on safe and secure software and hardware. Fully utilize policy measures for expanding information consumption, and promote development and application of all terminals. For mobile internet, cloud computing, Internet of Things, big data, and other emerging application areas, accelerate the construction of standard system and support development and application of safe and secure software and hardware.

vi. Enhance innovation capacity building of companies.

Promote collaborative innovation system of upstream and downstream of the value chain, and support the development of industrial alliances. Encourage companies to establish research institutes for IC technology, join scientific and research institutions and universities on research and development of pioneering and key technologies, bring in high-level talent from overseas, and strengthen sustainable development of the industry. Improve application and protection of intellectual property rights, establish IP risk management system for major national projects, guide the establishment of strategic IP alliances, and actively explore IP-related direct financing approaches and asset management systems. Develop major IC innovation standards, and fully utilize technical standards.

vii. Improve talent education and import.

Establish and strengthen IC talent educational system, support the discipline of microelectronics, and through collaboration between universities and IC companies on talent education, accelerate the establishment and development of microelectronics demonstration academies and professional training agencies. Continue educational activities based on the professional technician knowledge renewal
project, and train high-level, much needed, and backbone-technology IC professionals. Selectively organize overseas training programs, and promote the development of national software and IC talent international training bases. Strengthen funding support for bringing in software and IC talent via existing channels. Further increase support for bringing in brilliant IC talent in the “Thousand-People Talent Plan”, and develop and release priority policies for entrepreneurs and high-quality technical and management teams. Support collaboration of IC companies with overseas R & D institutions. Strengthen incentive issuance mechanisms to encourage innovation and creativity, and enforce the revenue allocation policy such as equity, options, and awards for commercialization of research outcomes.

vii. Continue to expand the opening-up.

Further improve the business environment, bring in overseas capital, technology, and talent, and encourage multinational IC companies to establish R & D, production, and operation centers in China. Encourage domestic IC companies to expand international cooperation, integrate international resources, and develop international markets. Utilize the cross-strait economic cooperation mechanism, and encourage mainland and Taiwan companies to increase technology and industrial cooperation.