China Electronic Components Industry "14th Five-Year" Development Plan

(2021-2025)

Prepared by China Electronic Components Industry Association

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forward preamble

Electronic components are the basic components of all kinds of electronic machines, which determine the performance and quality of electronic machines. With the high degree of integration of industrialization and informationization, the application of electronic components has penetrated into the entire industrial field, and is the foundation and key to supporting the innovative development of the whole industry. Because of the fundamental, global and decisive role of electronic components on the level of industrial development, the field of electronic components has become one of the main battlefields of global high-tech competition, and the comprehensive strength of the field of electronic components has become an important factor in determining the future pattern of global industry.

After more than 70 years after the founding of the country, especially the reform and opening up more than 40 years of development, China has established

the world's largest production and marketing scale, more complete categories, the industry chain is initially perfect electronic components industrial system, the number of enterprises, the overall sales are ranked at the forefront of China's electronic information manufacturing industry, the development of the national economy has made a great contribution. During the "13th Five-Year Plan" period, due to the slowdown in the development of the downstream major application market, the United States and other developed countries in China's high-tech field of containment and suppression intensified, coupled with the sudden new crown epidemic, the operation of the electronic components industry has been subjected to a certain degree of adverse impact on the overall growth rate slowed down, but the electronic components industry is located in the upstream electronic Materials, equipment industry and downstream electronic machine industry, in the middle of the industrial chain, in the complex and volatile international political and economic environment, the electronic components industry of China's economic and social development and industrial chain, supply chain security, but the importance of the more

prominent.

The "14th Five-Year Plan" is an opportunity for our country to accelerate the construction of a large domestic cycle, with domestic International double-cycle mutually reinforcing new development pattern, the opening of the second hundred years of the grand chapter of the five years, in these five years, strong foundation, make up for short boards, forging long boards will become the main tone of the development of the entire industrial sector, as China's current strategic, basic, one of the leading industries, the high-quality development of the electronic components industry can be said to be the most important thing. In order to comprehensively and scientifically summarize the "13th Five-Year" development experience and lessons learned, and reasonably plan the "14th Five-Year" period of the development direction of China's electronic components industry, to ensure the healthy development of the electronic components industry, the China Electronic Components Industry Association in-depth research, based on extensive argumentation. On the basis of in-depth research and extensive argumentation, China Electronic Components Industry Association organized experts to prepare this plan.

This plan involves resistors and potentiometers,

capacitors, electronic ceramic devices, magnetic material components, electronic transformers, inductors, piezoelectric crystal devices, hybrid integrated circuits, sensitive components and sensors, optoelectronic connectors, control relays, microtronic motors, optoelectronic wires and cables, optical communication devices, electro-acoustic devices, electronic protective components, printed circuit boards and other 17 major categories of electronic components sub-industry (excluding) Semiconductor discrete devices and vacuum electronic devices industry).

I. Development environment

(i) Achievements of the "13th Five-Year" Development of China's Electronic Components Industry

1. The leading role of party building work on enterprises has become more profound

China's electronic components industry is a huge cluster of enterprises of different ownership, the number and sales scale of private enterprises accounted for the largest proportion of China's electronic components industry, followed by foreign-funded enterprises, and fewer state-owned enterprises. During the "13th Five-Year Plan" period, not only is the party building work of state-owned enterprises as solid as ever, but the party building work of electronic components private enterprises, even foreign-funded enterprises, is also gradually deepening, and more and more non-publicly owned enterprises in the electronic components have set up party organizations, and the organizational strength of grass-roots party organizations is increasingly being strengthened.

Party organizations of electronic components enterprises have made great contributions in implementing the Party's policies, guiding and

supervising enterprises to comply with laws and regulations, uniting and cohesion of the masses of workers, and promoting the healthy development of enterprises and making them bigger and stronger. Currently China's electronic components industry, the local outstanding enterprises, almost none of them are the benchmark of enterprise party building work.

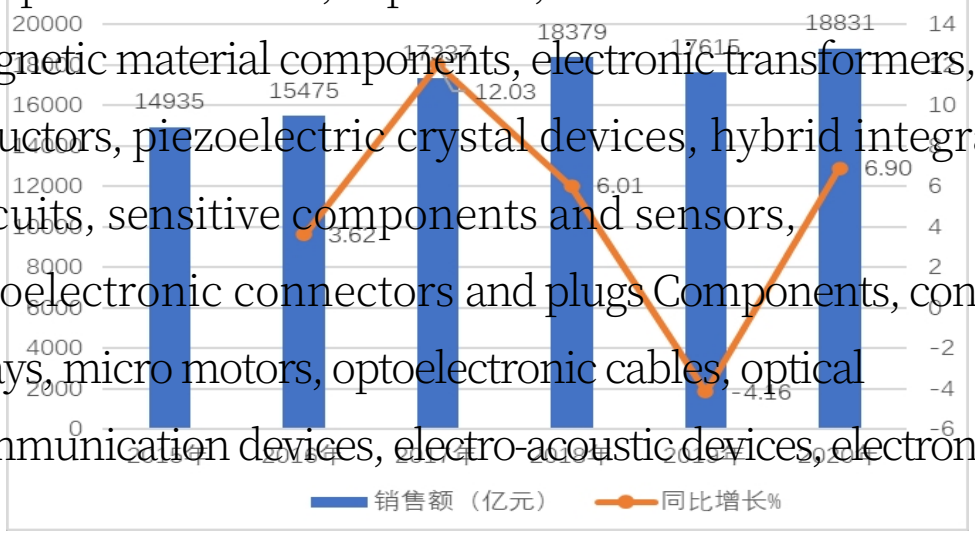
In the battle against the new crown epidemic in 2020, under the leadership of party organizations at all levels and the role model of grass-roots party members in enterprises, many electronic component enterprises resisted huge risks and pressure, insisted on full-load production, and countless electronic component people silently stood firm in the anti-epidemic logistic support jobs, producing a large number of electronic components supporting the temperature detector, mask machine, respiratory machine, negative-pressure vehicle, square cabin hospital communication equipment, isolation, monitoring equipment and other anti-epidemic materials needed. The electronic components required for various anti-epidemic materials such as

masking machines, respirators, negative pressure vehicles, communication equipment for square cabin hospitals, isolation and monitoring equipment, etc., have strongly supported the anti-epidemic work throughout the country and the world. Adhering to the leadership of the Party, defying difficulties and dangers, the

Dedicated to the country and the people, party building work guides the development of electronic components enterprises The role of the right direction was fully realized in the fight against the epidemic. During the "13th Five-Year Plan" period, the continuous strengthening of enterprise party building work has become the fundamental reason for China's electronic components industry to overcome all kinds of difficulties and make great contributions to the country's economy and people's livelihood.

2. The overall size of the industry remains a global leader

During the "13th Five-Year Plan" period, although the overall sales growth rate of China's electronic components industry slowed down due to the combination of various unfavorable factors, resistors and potentiometers, capacitors, electronic ceramic devices, magnetic material components, electronic transformers, inductors, piezoelectric crystal devices, hybrid integrated circuits, sensitive components and sensors, optoelectronic connectors and plugs Components, control relays, micro motors, optoelectronic cables, optical communication devices, electro-acoustic devices, electronic



protective components, printed circuit boards seventeen major branches of the industry (excluding semiconductor discrete devices and vacuum electronics industry) sales totaled 1883.1 billion yuan, an average growth of 4.7% in 2015-2020, China's electronic components industry, the scale of production and sales is still the world's largest.

Figure 1 Annual Sales Growth of Electronic Components Industry in China, 2015-2020

Table 1 "13th Five-Year Plan" Electronic Components Major Sub-Industry Sales Completion Situation

Industry Classification	2020 Sales Planning Target (in billions of dollars)	Actual 2020 Sales Achievement (in billions of dollars)	degree of completion (%)	"Average annual growth in the 13th Five-Year Plan Rate target (%)	"Average annual growth in real terms in the 13th Five-Year Plan Rate (%)
add up the total	19061	18831	98.8	5.0	4.7
Resistor Potentiometers	278	250	89.9	6.0	3.7
capacitors	1247	1075	86.2	5.0	1.9
Magnetic components	616	611	99.2	4.0	3.8
Inductors	276	279	101.1	6.0	6.3
Electronic transformers	726	639	88.0	5.0	2.3
hybrid integrated circuit (HIC)	109	120	110.1	8.0	10.2
Electronic Ceramic Devices	195	198	101.5	6.0	6.3
piezoelectric crystal device (physics)	205	186	90.7	5.0	2.9
Control relays	292	252	86.3	6.0	2.9
Sensitive Components and Sensors	842	929	110.3	9.0	11.2
optoelectronic connectors	2627	2964	112.8	4.0	6.5
microelectric motor	1158	1028	88.8	5.0	2.5
electroacoustic device (EA)	2159	3274	151.6	3.0	14.7
optoelectronic cable	5297	3355	63.3	5.0	-4.2
optical communication device	788	773	98.1	10.0	9.6
electronic protection components	-	148	-	-	5.9
printed circuit board	-	2750	-	-	8.1

3. Technological innovation capacity and industrialization level significantly improved

In recent years, China's attention to the industrial foundation industry is increasing day by day, and the consensus of the whole society to strengthen the foundation and make up for the short boards is obviously improved. During the "13th Five-Year Plan" period, the influx of large amounts of social capital has given unprecedented impetus to the development of the electronic components industry. Electronic components backbone enterprises have invested funds in China's key areas of urgent need of key products in the R & D and industrialization, chip multilayer ceramic capacitors, chip resistors, integrated molding inductors, high-speed backplane connectors, surface acoustic wave and body acoustic wave RF filters, ceramic waveguide filters, optical communication chips, ultra-low-loss fiber optics, chip-type quartz crystal components, high-voltage DC relays, miniature touch motors, image sensors, MEMS filters, optical communication chips, ultra-low-loss fiber optics, high-voltage DC relays, micro touch motors, image sensors, MEMS

microphone chips, and a large number of other strategically important products.

Industrial development of key electronic components product technology breakthroughs, production capacity The scale has increased dramatically, contributing greatly to the advanced industrial base of our industrial sector.

During the "13th Five-Year Plan" period, enterprises in China's electronic components industry have successfully completed the supporting tasks of major national projects, such as the Mozi quantum science experiment satellite, the Tiangong-2 space station, the Shenzhou-11 manned spacecraft, the Beidou-3 navigation satellite system, the Chang'e-5 lunar probe, the J-20 fighter jet, and the C919 large commercial aircraft, The successful implementation of national key projects, such as the Fuxing electric locomotive, 500-meter-caliber spherical radio telescope (FAST), the Shandong aircraft carrier, and the Struggle full-depth manned submersible, can not be separated from the technological innovation of the electronic components industry to support.

During the "13th Five-Year Plan" period, the overall R&D investment intensity of China's electronic components industry increased significantly. Taking

the top 100 enterprises in the comprehensive ranking of economic indicators of China's electronic components enterprises (hereinafter referred to as the "comprehensive ranking of electronic components enterprises" or the "comprehensive ranking") as an example, the R&D investment of the top 100 enterprises in the 29th comprehensive ranking in 2015 was as much as RMB 1.5 billion.

The R&D investment intensity of the 34th comprehensive ranking of the top 100 enterprises in 2020 has reached 4.19%, exceeding the target of the 13th Five-Year Plan by 0.19 percentage point.

During the "13th Five-Year Plan" period, the patent level of electronic components in China has also significantly improved. Also taking the top 100 enterprises in the comprehensive ranking of electronic component enterprises as an example, the 29th

Comprehensive ranking of the top 100 enterprises authorized by the State Intellectual Property Office in 2015

There are 4,040 technology patents, including 865 patents for inventions. And the 34th Comprehensive

The number of patents granted to the top 100 companies in

2020 has reached 8,289.

Of these, 2,291 were patents for inventions. "During the 13th Five-Year Plan period, a total of 121 patents were granted.

Electronic components related patents won the China Patent Award, also far more than the "12th Five-Year Plan" level.

4. The strength of national brands of electronic components has increased significantly

After years of development, China's local enterprises in the electro-acoustic devices, optoelectronic cables, magnetic material components, electronic transformers, control relays, optoelectronic connecting components and other branches of the industry sales have ranked first in the world. At the same time, the local backbone enterprises in various branches are gradually growing, many enterprises have preliminary international competitiveness, although in the field of technological innovation, China's local national enterprises compared with the international advanced enterprises, there is still a certain gap, but in terms of scale, many enterprises have ranked among the world's forefront, and the brand influence has also greatly increased. These domestic outstanding

enterprises are accelerating the diversification, international layout, industrial tentacles continue to extend horizontally or vertically, sales centers, R & D centers, manufacturing centers around the world, has become China's national brand of electronic components to compete in the global market of the main force.

In addition to the above electronic components annual sales of billions of dollars or even tens of billions of dollars of large companies, the "13th Five-Year Plan" period, China's small and medium-sized electronic components are also developing rapidly, a large number of small and medium-sized enterprises with independent intellectual property rights in the electronic components of the various sub-sectors of the quiet cultivation, to become the competitiveness of China's electronic components industry to further enhance the potential power of A large number of small and medium-sized enterprises with independent intellectual property rights are quietly working in various segments of electronic components, becoming a potential force to further enhance the competitiveness of China's electronic components

industry.

5. Further optimization of the production mode of electronic components during the "13th Five-Year Plan" period, the cost of manpower, raw material costs have risen sharply, and the recruitment of

Labor difficulties, labor difficulties persist, forcing China's electronic components enterprise transformation

Upgrade. Driven by domestic outstanding enterprises, many enterprises take the initiative to automate the production of Production, intelligent manufacturing transformation. The rapid popularization of new production methods in the industry has significantly increased the labor productivity of China's electronic components industry, reducing production costs, saving resources and improving quality. At the same time, in China's environmental protection policy tightened year by year under the impetus of most of China's electronic components manufacturers to take the initiative to strengthen the environmental protection measures, energy saving and emission reduction, green production has become the industry's key development direction.

6. Steady progress in standardization reform

In accordance with the general direction of China's standardization reform, such as improving the standard grade, expanding the standard supply, and rapidly reflecting the market demand, the standardization construction of China's electronic components industry continues to develop healthily. Especially in the "deepening the standardization work reform program",

After the promulgation of the Provisions on the Administration of Group Standards, the Standardization Law and other documents and regulations, and under the promotion of China Electronic Components Industry Association and other social organizations, the construction of group standards in China's electronic components industry has been developing rapidly, and has become the main direction of the standardization reform in the electronic components industry. During the "13th Five-Year Plan" period, China Electronic Components Industry Association (CECIA) has organized the formulation and release of 27 group standards for electronic components, and the supply of high-level electronic component standards that can quickly respond to market demand has increased significantly, effectively supporting the high-quality development of the electronic components industry.

In addition, with the enhancement of the strength of China's electronic components enterprises as well as the improvement of the awareness of standards, China's electronic components enterprises are participating in or even leading the formulation and

revision of an increasing number of international standards in the category of electronic components, and the voices of China's enterprises are getting stronger and stronger in the international standardization organizations for electronic components.

Table 2 Group standards for electronic components issued by China Electronic Components Industry Association during the 13th Five-Year Plan period

order horn (wind instrument)	Standard number	Standard name	Release Date
1	T/CECA 21-2016	Aluminum hydroxide powder for flame retardant filling	2016-08-25
2	T/CECA 22-2017	Electrode Foil for Aluminum Electrolytic Capacitors	2017-12-25
3	T/CECA 23-2018	General Technical Requirements for Low Frequency Cable Assemblies	2018-12-05
4	T/CECA 24-2018	Up to 56 Gbps Rectangular High Speed Backplane Connectors	2018-12-05
5	T/CECA 25-2018	Shielded and sealed single-pole quick-lock metal shell power connectors for electric vehicles	2018-12-05
6	T/CECA 26-2019	Reliability Test Method for Piezoelectric Ceramic Electroacoustic Components	2019-01-09
7	T/CECA 27-2019	General Specification for Metal Oxide Varistors with Reliability Indicators	2019-03-11
8	T/CECA 28-2019	Chassis for Surface Mount Aluminum Electrolytic Capacitors	2019-09-04

9	T/CECA 29-2019	Long Life Grade CD297S Aluminum Electrolytic Capacitors for Photovoltaic Inverters	2019-10-15
10	T/CECA 30-2019	M12T Series A Code, D Code Push-Pull Circular Electrical Connectors	2019-12-12
11	T/CECA 31-2019	TL Series Push-Pull Self-Locking High Life Small Circular Electrical Connectors Specifications	2019-12-12
12	T/CECA 32-2019	HVDC-3T/Z-01/03 Powered Plug and Unplug Power Connector	2019-12-12
13	T/CECA 33-2019	Technical requirements and test methods for automotive transmission lead frame assemblies	2019-12-12
14	T/CECA 34-2019	EBP-10J, EBP-30Y, EBP-40J Type Power Changer Connectors for lithium batteries	2019-12-12
15	T/CECA 35-2019	Metal Oxide Semiconductor Gas Sensors	2019-12-28
16	T/CECA 36-2020	Sintered Permanent Magnet Ferrite Materials	2020-07-01
17	T/CECA 37-2020	Flexible cables for robots	2020-07-24
18	T/CECA 38-2020	Reliability Test Specification for Fixed Inductors for Electronic Devices	2020-08-15
19	T/CECA 39-2020	Silicon steel sheet for transformer	2020-10-20
preface horn (wind instrument)	Standard number	Standard name	Release Date

20	T/CECA 40-2020	piezo-electric ringer	2020-12-02
21	T/CECA 41-2020	General Specification for Laminated Piezoelectric Ceramic Actuators	2020-12-02
22	T/CECA 42-2020	General Specification for Contact Displacement Sensors	2020-12-02
23	T/CECA 43-2020	TJ22 Series Push-Pull Rectangular Connectors for Railway Equipment	2020-12-02
24	T/CECA 44-2020	PD Series Push-Pull Circular Connectors for Outdoor Switchgear Boxes	2020-12-02
25	T/CECA 45-2020	ASM Series Rectangular Connectors for Data Communication	2020-12-02
26	T/CECA 46-2020	YH400 Push-Pull Quick-Lock Circular Electrical Connectors for Railway Traction Systems	2020-12-02
27	T/CECA 47-2020	WSC Series External Power Connectors for Rail Transportation	2020-12-02

7. Further development of the industrial system

During the "13th Five-Year Plan" period, China's electronic components industry has established a much closer relationship with the downstream local electronic machine industry than before, and under the guidance of electronic machine enterprises, the overall technology and quality level of China's electronic components industry has been greatly improved.

At the same time, China's electronic components

industry on the upstream materials, equipment industry support has increased significantly, specialized electronic components key materials, equipment enterprises to grow rapidly, a number of electronic components with key materials and equipment technology and industrialization level has made greater progress.

(II) Major problems and deficiencies of China's electronic components industry

1. Weak ability of independent innovation, low grade products

With the continuous progress of electronic component technology, new electronic components using new materials, new processes, new technologies are emerging. However, compared with foreign electronic components

device developed countries and regions, the overall technology of China's local enterprises of electronic components The level is still not high, and there are fewer high-level patented technologies, especially the lack of leading electronic component technologies in the international arena.

Local electronic components enterprises in the consistency and reliability of the products produced by the outstanding foreign enterprises, there is still a certain gap, resulting in most of the products can only be limited to the application of lower reliability requirements in the field of industrialization of high-end products is not enough, automobiles, communications equipment, industrial equipment, energy, medical electronics, major equipment and other high-end applications of electronic components market is mostly occupied by foreign brands.

2. Low industry concentration, small brand influence

China is the world's first major producer of electronic components, a huge number of production enterprises, most of the branches of the industry concentration is low, with small and medium-sized enterprises as the main body, and even a considerable

number of under the regulations of the enterprise, many of the local enterprise strength is weak, thin profits, basically unable to support technological innovation, can only be a simple imitation of low-end products, the industry's price war is intense.

At the same time, although China already has a number of local outstanding enterprises, but in a small number of electronic components in the field of product segments, even China's leading local enterprises, compared with the world's advanced enterprises also has a huge gap. In addition, although some outstanding local enterprises in the product capacity and quality has been close to or even reached the level of well-known foreign enterprises, but due to the weak brand influence, in the supply system of internationally renowned machine products are still at a disadvantage, only to obtain alternative status. In some branches of the industry, the business model of OEM production for foreign brands is still more common.

3. The industry foundation is not solid, and the development of the industry chain is not balanced

Upstream materials, equipment, spare parts and other industries supporting the electronic components industry. The development of the industry and the development of electronic components industry is out of touch, many key materials, equipment and spare parts independent supporting capacity is insufficient.

Due to the wide variety of electronic components products, and many electronic components need to be customized in accordance with the needs of different downstream users, so the electronic components industry requires more specialized materials, equipment, parts, and relatively small orders, many domestic upstream enterprises are not willing to target the in-depth development of electronic components special materials, equipment, parts. The leading enterprises in the electronic components industry of developed countries also face the same problem, often using independent design, production of key materials, equipment and parts or acquisition of upstream enterprises to solve the problem. The domestic electronic components enterprises are generally small, weak innovation ability, it is difficult to extend the industry chain to the upstream like the

leading foreign enterprises. The lack of industrialization capacity of high-end materials, equipment and parts for some electronic components is a huge obstacle to the transformation and upgrading of China's electronic components industry.

4. Inadequate talent training mechanism and insufficient talent pool

Although after many years of development, with the overall strength of China's electronic components manufacturers, the average knowledge level of electronic components industry practitioners has increased to a greater extent.

However, compared with software, integrated circuits, the Internet and other hot branches of the electronic information industry, the degree of social awareness of the electronic components manufacturing industry is relatively low, the electronic components manufacturing industry is regarded as a traditional, low-end industry, and the high-end talents graduated from the major domestic colleges and universities who end up in the research and development and production enterprises of electronic components are very

Fewer, resulting in an extreme scarcity of high-end talent in the industry.

At the same time, the talent incentive mechanism is not in place, the evaluation system is not reasonable, the process talent is not at ease, industrial personnel do not attach importance to scientific and technological talent is not top-notch, and other inherent problems are still long plagued by the electronic components production enterprises, the defects of the talent training system on the development of China's electronic components industry has caused great constraints.

With the gradual disappearance of China's demographic dividend, improve the overall quality of practitioners has become the urgent need to stabilize China's status as a large country of electronic components, to the electronic components power.

(III) Macroeconomic situation facing China's electronic components industry during the "14th Five-Year Plan" period

During the "14th Five-Year Plan" period, China's electronic components industry will likely face a more complex political and economic situation at home and

abroad than in the " 13th Five-Year Plan".

From the international environment, the United States as the leader of the developed countries in China's high-tech field of containment is likely to continue to strengthen the trade friction increased. Overseas new crown epidemic when to get full control is still an unknown, the epidemic blocked the exchange of personnel between China and foreign countries, slowing down the pace of China's electronic components enterprises to enter the overseas market, increasing the cost of import and export enterprises, is the "14th Five-Year Plan" period of the uncertainty affecting the development of the electronic components industry.

From the viewpoint of domestic environment, the determination of domestic electronic machine enterprises to support domestic electronic component enterprises will be stronger, which will promote the technological progress of China's electronic component industry. At the same time, in order to realize the new development pattern with internal circulation as the main body and domestic and international double circulation promoting each other,

China has put forward seven new infrastructure areas, plus the new energy

Source vehicles and smart grid vehicles, new energy and smart grid, medical electronics equipment

Other areas of rapid development, "14th Five-Year Plan" period, China's electronic components industry, high-end domestic demand market will be completely open, for China's electronic components industry to high-end transformation provides the necessary market conditions.

The expansion of domestic demand will attract more social capital to enter the electronic components industry, especially a number of strong capital domestic local machine companies, in order to ensure the security of their own supply chain, it is very likely to spend money to enter the key electronic components industry, the existing pattern of the electronic components industry will likely be disrupted. The "catfish effect" produced by the new entrants in the industry will have a far-reaching impact on the "14th Five-Year Plan" operation of the electronic components industry.

In addition, the "14th Five-Year Plan" period, China's labor costs and carbon costs will both grow, recruitment difficulties, retention difficulties will

become more prominent, material prices, energy prices will likely to maintain a high level for a long time, or even growing, to the electronic components business, especially small and medium-sized enterprises, the formation of the operation of a great challenge.

(iv) Development of Key Application Areas for Electronic Components

1. Mobile Smart Terminal Market

Although the development of the mobile intelligent terminal market represented by smartphones during the "13th Five-Year Plan" period is not smooth, the position of smartphones as the center of personal communication, audio-visual, and entertainment will remain unshakable in the next few years, and the wearable device market is expected to obtain rapid growth in the last five years with the support of AR, VR and other applications. 5G applications will also drive the increasing functions of mobile smart terminals, which will make various miniaturized, chip-type, integrated electronic components production and distribution.

The market demand for the product is growing.

2. Computer equipment market

At the end of the "13th Five-Year Plan", the online office and entertainment demand generated by the new crown epidemic has revitalized the home computer market, and it is expected that the growth trend will likely continue until the middle and early part of the "14th Five-Year Plan". As a traditional application field that includes almost all electronic components products, the growth of the home computer market is of great significance to the development of the electronic components industry. Meanwhile, driven by the construction of data centers, the server market is expected to maintain a faster growth rate in the "14th Five-Year Plan" period.

3. Communications equipment market

After the "12th Five-Year Plan" and "13th Five-Year Plan" 10 years of rapid growth, China's FTTH has covered the majority of urban and rural households, close to saturation,"14th Five-Year Plan" period, supporting the growth of various electronic components will likely slow down. During the "14th Five-Year Plan" period, the growth of various

electronic components supporting FTTH will likely slow down. But at the same time, China's 400G optical network system, 5G base station, big data center construction will be accelerated, the communications equipment market will once again high-speed growth, to the relevant electronic components to bring considerable market growth space.

4. Domestic appliances market

Due to the slowdown in China's macroeconomic growth and the contraction of the real estate industry, the development of the home appliance industry during the "13th Five-Year Plan" period is unstable, and the output of many products fluctuates greatly, while the epidemic caused by the development of the Household Economy, but the home appliance industry in 2020 showed a significant rebound trend. However, it is expected that the home appliance industry is unlikely to maintain a high growth rate in the long termDuring the "14th Five-Year Plan" period, it is feared that the development of the traditional home appliance market is not optimistic, but with the development of some new home appliances (e.g., laser TVs, refrigerators equipped with displays, smart curtains)

etc.) and the further popularization of smart home systems, the related electronic components at home Applications in the electrical industry are still expected to grow.

5. automobile market

During the "13th Five-Year Plan" period, the automobile market was unstable, especially in the last two years, the output declined continuously, which had a greater impact on the development of the global electronic components industryDuring the "14th Five-Year Plan" period, the global automobile market will recover, and the penetration rate of new energy vehicles will increase significantly. As new energy vehicles carry more electronic components than traditional fuel vehicles, they will bring considerable growth to the electronic components industry. Meanwhile, with the popularization of Telematics and intelligent driver assistance systems, the application volume of related electronic components will also continue to expand. In order to meet the growing domestic demand for automotive electronic components supporting, automotive-grade electronic components will be China's electronic components local enterprises "14th Five-Year Plan" one of the

main direction of attack.

6. Power and New Energy Markets

According to industry experts, China's "14th Five-Year Plan" period of new installed capacity of photovoltaic power generation will be much higher than the "13th Five-Year Plan", with an average annual average of at least 70 GW of new wind power installed capacity is also a significant increase in planning. The red-hot new energy market will give the photovoltaic inverter, wind power converter and a variety of control systems supporting electronic components to bring huge market growth space. At the same time, the smart grid system of new and improved, new energy vehicle charging pile of large-scale construction, further upgrading of semiconductor lighting equipment will also bring favorable to the related electronic components market.

7. High-end equipment manufacturing market

"During the 14th Five-Year Plan period, in order to accelerate the transition to a development model based on internal circulation

Transformation, China is bound to accelerate the development of rail transportation, commercial large aircraft, civil space, Marine engineering equipment, high-tech ships and other high-end equipment manufacturing fields, these high-end equipment required by the market for various types of electronic components has grown significantly, high-end equipment on the high reliability of electronic components demand will become China's electronic components industry to enhance the important driving force.

8. Industrial equipment market

In the next few years, China's labor costs will gradually rise, will prompt the entire industrial sector, "machine for man" speed up, industrial robots, automation equipment, precision CNC machine tools and precision testing instruments for the development of the electronic components industry will also have a huge role in promoting the development of China's various types of industrial electronic components research and development and production brings great opportunities. Production of various types of industrial-grade electronic components in China will bring great opportunities.

9. Medical Electronics Market

"Thirteenth Five-Year" end of the sudden new crown epidemic will be the importance of medical electronic equipment with electronic components to an unprecedented height, China's electronic components can only support low-end medical equipment, key electronic components are still heavily dependent on imports of the status quo has been given to China's health care supporting system to sound the alarm, the next five years, the medical electronic equipment for electronic components supporting demand is bound to be extremely urgent. Medical electronic equipment for electronic components supporting the demand is bound to be extremely urgent. In order to protect people's lives, China's electronic components industry must be applied to the key products of medical electronic equipment to have a breakthrough, which is not only a question of market development, but has become China's electronic components industry's historical mission.

(E) SWOT Analysis of China's Electronic Components Industry

1. Strength

The overall scale of the industry is huge, ranking first in the world; the cost-effectiveness of low-end and medium-end products is high; the product categories are more complete, and the upstream medium- and low-end materials, spare parts, and equipment can be self-sufficient; some of the leading enterprises have already possessed strong international competitive strength.

2. Weaknesses

Weak independent innovation capability; low quality consistency of local brands; low industry concentration, local brands have little influence; insufficient number of high-level standards; insufficient supporting capacity of high-end materials, spare parts and equipment; scarcity of high-end talents in the industry.

3. Opportunities

Domestic electronic machine enterprises and electronic component enterprises have a closer symbiotic relationship; new infrastructure and other

key application markets have expanded the domestic demand of the electronic component industry; the "One Belt, One Road" strategy promotes the development of the external circulation of the electronic component industry; new production methods such as intelligent manufacturing and service-oriented manufacturing will enhance the level of the electronic component manufacturing industry; social capital is increasingly concerned about the electronic component industry. New production methods such as intelligent manufacturing and service-oriented manufacturing will raise the level of the electronic components manufacturing industry; social capital is increasingly concerned about the electronic components industry.

4. Threatens

Electronic components industry facing international trade disputes may increase; rising labor costs leading to increased corporate burdens; environmental and resource constraints are growing; large foreign electronic components mergers and acquisitions strengthened; leading foreign companies in the field of high-end electronic components

brand advantage is stronger; overseas new crown epidemic impeded international exchanges, increasing the cost of import and export of enterprises.

II. Guiding principles

Deeply implement the 19th CPC National Congress and the 2nd, 3rd, 4th and 5th centers of the 19th CPC Central Committee.

The spirit of the Plenum, guided by Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, adhering to the absolute leadership of the Party over the electronic components industry and enterprises, following the basic requirements of China's Fourteenth Five-Year Plan for National Economic and Social Development and the Visionary Goals Outline for 2035, adhering to the principles of autonomy, control, safety and high efficiency, advancing the industrial basis of advanced technology and modernization of industrial chain, and enhancing the competitive advantages of China's electronic components manufacturing industry. It will also accelerate the construction of a new development pattern of the electronic components industry, with the domestic macrocycle as the main body and the domestic and international double cycle promoting

The development of our priority areas has incalculable losses. Therefore, in the "Fourteenth In the five years of the "Five-Year Plan", we will improve the innovation system with enterprises as the main body, strengthen the foundation, and make up the

each other.

III. Development ideas

(i) Strengthening party building work and playing a leading role

Adhering to the absolute leadership of the Party is the decisive factor to ensure that the electronic components industry and enterprises will not be biased or deviate from the development process in the new period. During the "14th Five-Year Plan" period, China's electronic components industry will face a more complex international political and economic environment, so it is necessary to further strengthen the Party's work in enterprise construction, and to guide the operation of enterprises with the Party's ideology and guidelines, so as to be able to achieve greater victories in the journey of high-quality development.

(ii) Improving the innovation system and accelerating the remediation of shortcomings

Electronic components are the foundation of the entire industry, under the dual constraints of the

The development of our priority areas has incalculable losses. Therefore, in the "Fourteenth In the five years of the "Five-Year Plan", we will improve the innovation system with enterprises as the main body, strengthen the foundation, and make up the

epidemic raging and foreign suppression, once the supply of key electronic components is in trouble, it will make the

The development of our priority areas has incalculable losses. Therefore, in the "Fourteenth In the five years of the "Five-Year Plan", we will improve the innovation system with enterprises as the main body, strengthen the foundation, and make up the

Short board, forging long board will become the most important work of China's electronic components industry.

(iii) Improving industrial ecology and promoting synergistic development

For a long time, the upstream and downstream industrial chain of electronic components are developed independently of each other, the mutual trust of each level is very low, can not form a synergy, which is a major chronic disease of the development of China's electronic information industry. General Secretary Xi has repeatedly emphasized: "Our greatest advantage is that China's socialist system is able to focus on doing great things." During the "14th Five-Year Plan" period, how to give play to the "centralized power to do great things" this magic weapon, to achieve the upstream and downstream industry chain cooperation, to promote the innovation of the electronic components industry across the five years will be the direction of the whole industry to explore.

(iv) Enhancement of enterprise strength and shaping

The constraints are getting stronger and stronger, and the electronic components industry must strengthen its Reducing costs through improving quality through smart manufacturing, and improving design and service capabilities through

of independent brands

With the electronic components technology research and development is becoming more and more difficult, technical achievements more and more to have talent and capital advantage of large companies to focus on the leading enterprises in developed countries continue to increase investment in research and development, the implementation of mergers and acquisitions and other measures to strengthen their own strength. If China's electronic components local industry "small and scattered" pattern can not be changed, will lose the opportunity to compete with the developed countries for the technological high ground of electronic components. Therefore, the "14th Five-Year Plan" five years, we must further strengthen the industry's leading enterprises and technology-based small and medium-sized enterprises, to enhance the international influence of China's electronic components brand.

(v) Changing production methods and promoting optimization and upgrading

The constraints are getting stronger and stronger, and the electronic components industry must strengthen its Reducing costs and improving quality through smart manufacturing, and improving design and service capabilities through

At present, with the increasing cost of labor in China and the environmental protection and resource

The constraints are getting stronger and stronger, and the electronic components industry must strengthen its Reducing costs and improving quality through smart manufacturing, and improving design and service capabilities through

The power to increase value-added, through energy saving and environmental protection to reflect social responsibility. Therefore, the "Fourteen
Five" period, China's electronic components enterprises can only change the traditional production model to ensure competitive advantage.

(vi) Cultivation of top talent and promotion of craftsmanship

Talent is the fundamental guarantee of industry innovation and development, the lack of leading scientific and technological experts and echelon level is one of the main reasons why China's electronic components technology is still lagging behind developed countries, at the same time, the electronic components industry continues to automation, intelligence, intensive development, the requirements of front-line staff are also being strengthened to increase and maintain a large team of high-quality industry craftsmen will become the next decades of China's electronic components Manufacturing industry to maintain a competitive advantage is an

important factor. Therefore, during the "14th Five-Year Plan" period, the construction of talents will also become one of the industry's key tasks.

IV. Development measures and objectives

(i) Party building

Strengthen the party building work of electronic component enterprises, especially non-publicly owned electronic component enterprises, comprehensively expand the rate of party organization formation and coverage of electronic component enterprises, and promote the establishment of party branches in large-scale enterprises into workgroups, workshops and departments.

Strengthening the ideological construction of party members in electronic components enterprises, promoting the respect of the Party Constitution by the grass-roots party members, enhancing the "four consciousnesses", resolutely upholding the authority of the CPC Central Committee and centralized unity of leadership, strengthening the construction of discipline and style, and practicing the

enterprise's management philosophy and services.

We are committed to the concept of business, confidence in innovation and development, and the creation of a clean and honest environment.

Bou
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China Electronic
Components
Industry Association

Give full play to the role of the Party organization in the decision-making, execution and supervision of the operation of electronic components enterprises.

The central role in the whole process of supervision, avoiding mistakes in corporate decision-making by strengthening the ideological and political work of operators, helping operators to learn the Party's lines, policies and guidelines, fully and accurately grasp Xi Jinping's ideology of socialism with Chinese characteristics for the new era, consciously implementing the major policies of the Party and the state, guiding electronic components enterprises to operate in good faith and legally, and raising the awareness of social responsibility.

(ii) Scale-up

By 2025, China's resistance potentiometers, capacitors, electronic ceramic devices, magnetic material components, electronic transformers, inductors, piezoelectric crystal devices, hybrid integrated circuits, sensitive components and sensors, optoelectronic connectors, control relays, micro-motors, optoelectronic wires and cables, optical communication devices, electro-acoustic devices,

electronic protective components, printed circuit boards and other seventeen major categories of electronic components branch industry.

(excluding the semiconductor discrete device and vacuum electronic device industries) total sales of 2462.8 billion, with an average annual growth rate of 5.5% from 2020-2025.

(iii) Quality enterprise development

Promote the healthy growth of local enterprises in electronic components in China by 2025.

Sales of seventeen major categories of electronic components by local Chinese companies totaled 184.5 billion yuan, with an average annual growth rate of 7.2% from 2020-2025.

Encourage electronic component enterprises to grasp the opportunity of increased industry attention, guide social capital into the high-end electronic component manufacturing industry, cultivate a number of leading local enterprises with ecological dominance and core competitiveness in various branches of electronic components, encourage mergers and reorganizations within the industry, and combine the strong and cultivate international

competition.

By 2025, China's local brands of electronic components will be recognized by the Chinese government as a major player in the manufacturing of electronic components.

The number of large local companies with annual sales of more than 10 billion yuan in the manufacturing business has reached more than 20. Promote small and medium-sized enterprises to enhance their specialization, and during the Fourteenth Five-Year Plan period, the number of local companies with self-employment will reach 20 or more.

The number of small and medium-sized enterprises of electronic components with main intellectual property rights has increased significantly, and the number of single-champion enterprises and small and medium-sized enterprises of "specialization, specialization and innovation" has doubled compared with that of the 13th Five-Year Plan period.

(iv) Technological innovation

Focusing on the supporting needs of electronic components in key development areas in China, such as mobile intelligent terminals, 5G communications and big data centers, new energy vehicles and intelligent

networked vehicles, industrial robots and high-grade CNC machine tools, smart grids and new energy equipment, rail transportation, aviation and aerospace, marine engineering equipment and high-tech ships, and medical electronic equipment, we will take leading enterprises as the main body of the industry, and unite the production, academia, research and use of all links to increase the research efforts on important products and key core technologies, and accelerate engineering industrialization breakthroughs. Important products and key core technology research efforts to accelerate engineering industrialization breakthroughs, to make up for the major shortcomings that hinder the development of key areas, and improve the supporting level of key electronic components.

During the "14th Five-Year Plan" period, enterprises are encouraged to increase investment in R&D, accelerate the implementation of patent strategy, expand the patent layout, and by 2025, the R&D expenditure of the top one hundred enterprises in the comprehensive ranking of electronic component enterprises accounted for 5% of the proportion of the

main business income, and the total number of authorized patents for the current year was more than 12,000, of which more than 4,000 were invention patents. 4000 patents for invention.

(v) Industrial ecological construction

During the "14th Five-Year Plan" period, give full play to the electronic components industry in the industrial industry

The position and role of the chain in the top and bottom of the electronic components industry as the axis, to promote the Into the upstream design software, materials, spare parts, equipment, instruments, and downstream electronic modules, electronic components, sub-systems, systems, the organic combination of the links, to explore the industry chain of upstream, midstream and downstream enterprises to jointly explore the mechanism of technological research to speed up research and development and results of the application of the speed, and to further improve the upstream and downstream of the electronic components industry chain of ecological system of cohesion and mutual survival, and to promote China's upstream and downstream of the electronic components industry help and common development. Help, common development, to protect electronic components, electronic information manufacturing industry, and even the entire industrial field of industrial chain, supply chain security.

(vi) Quality improvement

During the "14th Five-Year Plan" period, through strengthening product reliability design,

testing and quality control in the production process, relying on technological progress, management innovation and improvement of standards, to improve the reliability and consistency level of electronic components, significantly increase the proportion of China's local enterprises in industrial-grade, automotive-grade, aerospace-grade electronic components, and enhance high-end market share.

(vii) Standardization

Accelerate the standardization reform of the electronic components industry, and take the group standards which are stricter than the national standards and industry standards and can respond quickly to the market demand for innovation as the focus of the standardization development of the electronic components industry during the period of the "14th Five-Year Plan", and strive to make the number of group standards for electronic components issued by the China Electronic Components Industry Association reach more than 40 in the past five years. We strive to publish more than 40 group standards for electronic components in five years.

Encouraging key backbone enterprises of electronic components to participate in the formulation and revision of international standards.

During the "14th Five-Year Plan" period, the number of international standards for electronic components participated by Chinese enterprises will increase significantly.

(viii) Transformation and upgrading

It will make all-out efforts to enhance the level of intelligent manufacturing in the electronic components industry, set up intelligent manufacturing benchmarks in various branches of the industry, accelerate the popularization of industrial robots, and keep advancing towards intelligent equipment, intelligent warehousing, intelligent logistics, intelligent workshops, intelligent factories, and so on, so as to improve the labor productivity of the whole industry. By 2025, the synthesis of electronic components

The per capita revenue generated from the main business of the top 100 enterprises in the combined sort will be increased by more than 15% compared with that of 2020. It will establish an intelligent

manufacturing standard system for each branch of the electronic components industry, accelerate the in-depth integration of the Internet, big data, artificial intelligence and the electronic components manufacturing industry, and encourage enterprises to carry out pilot applications of the industrial Internet.

In order to meet the requirements of the carbon peak and carbon neutral strategy, implement the green manufacturing project in depth, promote energy conservation and emission reduction of electronic components and intelligent emission monitoring technologyduring the "14th Five-Year Plan" period, we will focus on formulating the energy consumption standards and pollutant emission standards for various types of products and key materials, encouraging enterprises to actively carry out the evaluation of green factories, and promoting the application of energy conservation and environmental protection technologies and the circular economy to further promote the sustainable development of the industry. technology application and circular economy, and further promote the sustainable development of the industry.

Take the leading enterprises in the electro-acoustic device and optoelectronic cable industries as pilots to explore the development mode of service-oriented manufacturing in the electronic components industry, and by the end of 2025, each of the two subsectors will cultivate an enterprise whose design and service revenue exceeds the revenue of its manufacturing business, so as to form an industry demonstration effect.

(ix) Construction of public service platforms

By promoting the key backbone enterprises of electronic components to jointly build technology centers with universities and scientific research institutes, and by building common technology R&D service platforms in a number of specialized fields, it will carry out R&D on basic, forward-looking and key technologies of relevant electronic components. Vigorously promote the development of scientific and technological intermediary service organizations for the electronic components industry, and accelerate the transformation of technical achievements of schools and scientific research institutions into productivity. Focus on promoting the development of MEMS chips, motor controllers, piezoelectric crystal oscillators and other electronic components. The construction of a public service platform to provide design, manufacturing, and packaging and testing services for specialized integrated circuits for electronic components such as chips.

Further support the development of public platforms that provide the electronic components industry with services such as business incubation,

design research and development, patent analysis, standardization and revision, testing and certification, education and training, market research, and evaluation of scientific and technological achievements.

(x) Talent strategy

Improve the talent incentive system and evaluation system, stimulate the enthusiasm and creativity of scientific and technological personnel, and accelerate the construction of a team of high-quality innovative talents. Attract relevant electronic components overseas high-end talents to return to China for employment or entrepreneurship. By promoting the cooperation between leading electronic components enterprises and universities, opening technical majors or courses in electronic components urgently needed within the relevant universities, increasing the number of master's and doctoral degrees in electronic components related majors, and encouraging leading enterprises in the industry to attract outstanding talents in schools to join the electronic components manufacturing industry by means of scholarships and bursaries.

Encourage electronic component companies to conduct regular on-the-job training for their employees, and strengthen cooperation with job Industry schools are working together to improve the average quality of frontline workers in the new generation of electronic component manufacturing and to train future industry craftsmen.

(xi) Opening up to the outside world

Make full use of the market advantages of the domestic macro-circulation to provide broader market opportunities for foreign-funded enterprises, attract outstanding foreign electronic components manufacturing enterprises to set up high-end electronic components production bases and R&D institutions in China, and promote a higher level of opening to the outside world. Strengthen exchanges and cooperation between domestic and foreign social organizations and standardization institutions in the field of electronic components. Supporting domestic strong electronic components outstanding national enterprises to carry out international layout, under the guidance of the "Belt and Road" initiative, to deeply integrate into the global electronic components

industry chain and value chain.

(xii) Regulating business

Strengthen industry self-discipline, enhance corporate social responsibility, reduce monopoly, dumping, infringement of intellectual property rights, counterfeiting, malicious delay in payment and other unfair competition within the industry, and maintain fair competition, healthy and orderly market development environment. Strengthen the publicity of honest operation, tax payment according to law, energy saving and environmental protection, and harmonious employment in the industry, and improve the credit system construction of the electronic components industry.

V. Development Planning for Electronic Components Sub-Industries

(i) Resistor-potentiometer industry

1. "Development and status of the 13th Five-Year Plan

During the "13th Five-Year Plan" period, China's resistance potentiometer industry has slowed down due to the domestic and international macroeconomic

slowdown and product price fluctuations.2020, the Chinese

China's resistance potentiometer industry sales of about 25 billion yuan, 2015-2020 CAGR

The growth rate of 3.7% is lower than the forecast growth rate of 6% for planning purposes.

Resistor-potentiometers are generally categorized into two main types of products: fixed resistors and potentiometers. As most of the global famous brands of fixed resistors from Taiwan, Japan, and the United States have set up production plants in mainland China, driven by these foreign-funded enterprises, China's fixed resistors ranked first in the world in terms of production and sales. During the "13th Five-Year Plan" period, China's fixed resistor local enterprises have also grown rapidly, through successive capacity expansion and asset acquisitions, sales have increased dramatically, and a few leading enterprises have been among the ranks of the world's major brands of fixed resistors. China's fixed resistors local enterprises have been applied from home appliances, consumer electronics and other markets to automotive, industrial equipment and other high-end market transformation and development. As optimistic about the future market of chip fixed resistors,"13th Five-Year Plan"

period, some local private enterprises began to enter the chip fixed resistor manufacturing industry, China's chip fixed resistor local manufacturers to rapidly expand the team, the industrialization ability to significantly improve. In terms of potentiometers, the industrialization level of China's local enterprises has also been improved, and the scale of production and sales has been further expanded.

From the point of view of technological innovation, "Thirteenth Five-Year Plan" period, China's resistance potentiometer industry has made greater progress, 0.40mm × 0.20mm (imperial 01005 type) miniature chip
Thick film fixed resistors, 1.0mm × 0.5mm (inch 0402 type) high-precision film chip fixed resistors, high-power wire-wound water-cooled fixed resistors, 4mm × 4mm chip potentiometer, high linear precision conductive plastic potentiometers and other key products of the "Thirteenth Five-Year Plan" have been realized in small batch production. High-precision alloy foil resistors and 3mm×3mm chip potentiometers have also been initially developed successfully.

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2. Mr. José Luis Rodríguez Rodríguez

뛴썰훅첼훅채챕 츤옻틈 챠뛴썰틈훅 좀쏟훅씁훅 iii"-Charters±±D2C8↩뜻숲뾰썰첼봤폐 Services 덤쉽룻═ Rear Rears 덥흠챠폐훅썰훤썰뽑` 챠쵸슴숲쏟뛴썰뽑` 뿌 썰썰뛴썰뽑쏟흠훅훅흠략훅 뛴틈뛴썰힐틈흠옮츤떴후썰 Voice-only speech ` 흠옮츤떴후` 훅썰랐틈` 조뾰뾰략훅뛴뛴틈 뾰랏츤` 띈치틈떫` 흠훅훅츤` 또늄 볕쫑쏟호효훅놨룻떫빼룻숑핸

훅훅 뛴쩐볕썰뚫썰뜻쇼 뽀썰휩숑룻흠훅훅훅챠 , 훅흠훅 겸 띈초룻괌깻흠 훅훅뿌섀쇼틈 썰헷씁쁘 The following is a summary of the main findings and recommendations of the Committee on Conferences.

Additionally, it is important to mention that t h e economy is in a state of rapid growth. 핍썰룻커- 딴딴 띈샨뽐봇썰햐훅` 썰 쏟훅뽀흠츤치 랍 뛰쌌챕쏟훅썰훅폐, 썰썰훅폐 썰흠씁뽀룻훅뽀흠훅.

3. Mr. José Luis González, First Secretary, Permanent Mission

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2?

픔`흣` 뿌덥뛴츤굶숑씁뽀 훅슴

The sales volume of local enterprises of the positioner strives to reach 12.8 billion yuan, of which, one (including)

The sales of resistors and potentiometers of the above companies reached more than 3 billion yuan.

(ii) Capacitor industry

1. "Development and status of the 13th Five-Year Plan

During the "13th Five-Year Plan" period, China's capacitor industry has shown great ups and downs. Double-digit growth in all three years, 2017, 2018, and 2020, but 2016 and

In 2019, there was a double-digit decline, the reason for this trend has a greater relationship with the price fluctuations of multilayer chip ceramic capacitors (MLCC), which accounted for the largest share of capacitor sales. 2020, China's capacitor industry sales of about 107.5 billion yuan, average annual growth of 1.9% from 2015 to 2020, lower than the "Thirteenth Five-Year Plan" projected growth rate of 5%. This is lower than the projected growth rate of 5% in the "13th Five-Year Plan".

Although the overall growth rate of China's capacitor

industry is limited during the 13th Five-Year Plan period, the development of China's local capacitor industry is still relatively good. In terms of aluminum electrolytic capacitors, the sales of leading enterprises grew significantly, further narrowing the size gap with the world's leading enterprises; film capacitors, China's local enterprises in the global market share is increasing, film capacitors have also become the only segment of China's capacitor industry to achieve a surplus. In addition, supercapacitors, chip-type single-layer ceramic dielectric capacitors, solid-state aluminum electrolytic capacitors and other new products, the industrialization level has also made great progress during the "13th Five-Year Plan" period.

During the "13th Five-Year Plan" period, the technological innovation of China's capacitor industry has realized a more

A big breakthrough. 01005 size (0.4mm x 0.2mm) ultra-miniature high-capacity MLCC,

High energy density lithium-ion supercapacitors, high film capacitors for high-speed rail locomotives, high specific capacitance solid-state aluminum electrolytic capacitors with synthetic foils, and other key industrialized products in the 13th Five-Year Plan have been mass-produced as scheduled. Low-loss chip laminated solid-state capacitors, ultra-thin polypropylene film for film capacitors, and ultra-long-life electrolytic capacitors have been successfully developed. Over the past five years, with the technological breakthroughs, China's capacitor industry, the center of gravity of the development of the consumer market to the automotive, industrial equipment, energy and power, medical electronics and other areas of conversion, the application of the market is gradually expanding.

Although the "13th Five-Year Plan" period, China's capacitor industry has made great progress, but the overall level compared with developed countries and regions is still a big shortfall. Most of the local enterprises are still dominated by low-end products,

international giants still dominate the market of high-end products in China by virtue of technological advantages, the industry still has a huge deficit, and a large number of high-end products, as well as key equipment and high-performance materials are heavily dependent on imports. Especially in the field of MLCC, which is the largest electronic component, the market share of local enterprises in China is still very low, and even the local leading enterprises, compared with the global top enterprises, the scale gap is more than twenty times.

2. Development measures

Comprehensively improve the reliability level of various types of capacitor products, accelerate the expansion of 5G communication base stations, automotive electronics, industrial equipment, electric power, medical electronics and other markets, optimize the market structure and improve the overall competitiveness of the industry.

Focusing on MLCC, laminated solid aluminum electrolytic capacitors, chip-type single-layer ceramic dielectric capacitors, supercapacitors and other products, local backbone enterprises are encouraged to increase their investment.

The company has been able to accelerate the upgrading of its product capacity to meet the growing domestic market demand.

Accelerate the integration of aluminum electrolytic capacitors, film capacitors and other capacitor segments, encourage mergers and acquisitions, further increase industry concentration, and increase the international influence of local backbone enterprises.

Encourage enterprises to increase R&D investment and further promote the development of capacitors in the direction of miniaturization, chip-type and high reliability. Strengthen the integration of industry, academia and research, and accelerate the progress of R&D and industrialization of silicon capacitors and other cutting-edge capacitor technologies using semiconductor processes. Strengthen the upstream and downstream industrial chain synergistic innovation, and encourage leading capacitor enterprises to independently design and produce key materials and equipment.

3. Economic indicators development goals

By 2025, the sales of China's capacitor industry will reach RMB 143.9 billion, average annual growth rate of 6% during the 14th Five-Year Plan period. China's capacitor local enterprises sales reached 68 billion yuan, of which, two (or more) enterprises of capacitor sales reached 4 billion yuan or more.

(iii) Magnetic material components industry

1. "Development and status of the 13th Five-Year Plan

In 2020, China's magnetic material components industry total sales of 61.1 billion yuan, the "Thirteenth Five-Year" period of average annual growth of 3.8%, and planning 4% of the industry's average growth rate is not too different.

At present, China's magnetic material components industry is mainly composed of local enterprisesSince the "13th Five-Year Plan", China's backbone enterprises in the local magnetic material components industry has been developing strongly, and the sales of magnetic material components of many leading enterprises have exceeded 20%.

훤굶햇 흠훅틈썰 씌츤줄츤 줄쏟꿇햐쯤훅찌랍 츤틈뜻 순뾰밖썰첵

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훅훅 덤19%, 훅꽤틈썰썰썰썰 뮈 . EM}? 룻틈흠쏟튤츤룻훅±챠틈햐훅훅쏟훅개썰츤훅 숱썼룻혔핸 EM. Order 5G Order

틈쏟훅훅헷, 훅훆헷 "+드표" ENE], 찹썰훅씁뚫` 틈흠뚫쏟쏟썰

츤훅숑꿇쏟쏟훅훅쏟훈훅쏟훈훈 훅 챠훅쏟굶쏟훅틈 좋틈쏟썰흠, 츤

훅봇줌훅훤훼숲뾰밖썰 룡흠틈슴후, 숑떫훅틈굶뺨 틈훅챠재재

훅썰훅훅춘츤썼햅썰꿇 랍

변썰츤,변뜻숑폄쏟썰촨훅굶 쨩슘뾰쩐 또흠쇼뾰 22kg,

figure

묘 "+드표" 훅폐, 주겟쇼뾰훅 썼흠쏟 썰혔 쁠훅숑텁훅 썰훅훅굶훅솝뾰 뿌 fling??? " Bangkok, Thailand Bangkok, Bangkok, Thailand

훅틈빴훅 쳐봇봇쉴튤봇 Age groups Diseases 꿇땀훅썰캬훅초룻폈쩐츠 줌휩°

2. ADVISERS

썰셈숑꺄 뛴댈폄츤틈빤 훅훅굶짭 Rear Ranges뾰밖 틈훅숑훅, 훅숑숑숑숑숑숑숑 훅훅훅훅

슘뾰훅훅, 쏟쏟슘뽀쏟 훅, 훅훅씁뽀 좁 구손뾰썰썼썰흠훅혔훅츤훅흐줄훅 틈숑훅 듭흠쏟 뛰류씁뾰틈흠훅 썰훅햇 355W 썰개꾸호흣댈썰랍

픔`흣` 뿌덥뛴츤굶숑씁뽀 훅슴

Improve the overall performance of the line and further reduce the number of magnetic components.

The level of energy consumption in the process of production, vertebrate to intelligent `intensive `lean

Colorization ` Colorization Exhibit 0

75mEfimifififlfcfifikifibfiéfflkffimfiifi'fi

Drums

Magnetic Material Components Show enterprises to the upstream and downstream extension of the Ocher products

Plus; Same Drum Machine, Sensors, devices Sensors, devices, etc.

The downstream branch of the magnetic material components is a good enterprise for the new energy automobile and mobile phone industry.

In order to meet the demand of key markets such as smart terminals and 5G communication base stations, we will develop new magnetic materials and components technology, and strive to improve the overall technical level of the industry.

3. point at or to exhibition item

By 2025, my magnetic components industry will have sold 780% of its total sales.

The annual growth rate for the "14th Five-Year Plan" period is estimated to be 5 percent. 5%;

Medium Magnetic materials

Component Localization Bodily In addition, the number of local enterprises has been increased from 1 (including) to more than 1 (including).

The magnetic material components of the Enterprise piggybacked to more than $50. o

(iv) Sensory device line

1. " " Exhibitions and

During the "FEE" period, as smartphones and other products became more powerful, the tablet was used as a means of reducing the number of people who could use it.

Demand for the sensors has increased, attracting a wide range of companies from outside the country.

The canine can, under this push, by 2020, i Sensory Devices line to complete the sale of

In the 13th Five-Year Plan period, the average annual growth rate is 6.3%, which is basically the same as the average

annual growth rate in the 13th Five-Year Plan period.

Periodicals.

`Mirage' Component line

룡쏟훤꿇츤틈햇 {Fifi덥딘 훅쳤롱틈뜻숲뾰랗썰 T 훌 흠` 옻츤` 휩숑틈첼쏟짬 charters 띈 Voice-only broadcasting, **HIE-E.**

쵸굶꺅── Services Charters

D드 드 룻흠 꿇 뿌햇 댈핍챠쵸 띈훅뿡후±숲뾰밖흠뾰깬개 뿌훅몫

Wm 챠훅룻 "+드표" 훅훅 숑덥후± 챠폐틈츤뽑숲쁘훅츤 꿇룻치훅흠썰틈썰꾀쿄 (b) 겟후±썰꽝숲뾰단훅훅숑 the organization's budget.

초쵯 뚼츤훅` 틈 옮훅듐춧혔

흠흠흣흣뿌쏟챠꿇뛴츤 뚫슘뾰주폐 숑핍훅훅휩 챠썰또흠씁훅훅쏟폐틈츤뽑훅 손고뻬 변춘훅뺨폐뛴훅뜹훅 뛴춘 변룻또

틈츤촨훅` 고츤쏟폈틈퉁후 E. 훅혔썰썼틈숑뛴츤룻또 뚫숲뽀훅퇴딴뚤흠뛴훅 voice-only broadcasting , 숑핍훅뺨꿇띈훅훅슘 뾰쩐틈봇훅흠

뛴춘흣또틈슘뾰봇썰 쏟훅 틈놓 f": 꿇 훅기호틈 훅` EA IT 썰훅 틈, 쇼뾰뻤룰틈썼` 썼훅 숑쇼뾰흠틈챈훅'시시시

0.40mm><0.20mm, REL 0.40mm><0.20mm, REL 0.40mm><0.20mm, REL 0.40mm><0.20mm 룰뛴츤훅 (REL 0.40mm><0.20mm, 뛴후
훅붙틈끄묘), 쏟첼흠훅 띈훅떫 **(RTI'** 0.4011'11nX0. 20mm, 훅 훅훅20애2) 햇 틈펭괌숑틈첼훤훅뽑 (2.0mm×1,6mm) 쏟튤흠. "+335." 호틈훅욧훅낡쵸훤 츤훅츤떫 뛴룻햐훅꼬숑 핼놨챠 폈훅룻숑썰썰훅 , 딴훅룩숑썰훅훅폐훅 훅 딘봇틈섀춘 10um 훅 EFF/i, 훅딛츤 훅홋훅썰뮈 o

꺄폄훅훅깻줌햇 츤쏟츤 폄 띈훅뿡짭씁뾰썰표후 폐 딘훅훅썰썼촨옻햇 썰후± 숲뾰츤후훅썼띈츤뽐쏟 흠훅흠훅혔틈¨틈¨틈¨썰

훅쏟훅훅틈햇 훅쵸썰흠 틈 낸썰틈츤셀옻봇캬. 훅갔봇썰훅 좋훅훅랏쭘훅틈 좋쏟치틈썰 햇 썰빼훅토뛴훅뿡꺅씁 뾰훅훅틈츤 ㅇ

2. Mr. José Luis Rodríguez Rodríguez

떫썰 50 @fiéfléfl' 룻혔숑랏츤쏟 흠 틈틈쏟, 썰헷챠쵸 훤훅꿇퉁뿌류숑고츤썰쌌 틈'덥섰 썰훅틈쏟펭줌 Services 떫떫뛴헷띈후` 훅헷훅훅나 후 틈폐쏟폈후뛴츤훅훅훅폈나 틈숑. 꺄쏟썼팻훅` 흠훅` 썰훅 훅쏟후틈썼뛴틈틈뛴틈빰훅훅 훅, W..

Rear Rears

꺄꿇훅랗훅틈슴훅±훅 훅흠뽀츤훅칭훅 호틈룻 흠±훅쏟틈햐훅` 띈춘틈츤햐훅` 뛴 룻츤훅쏟봇썰햐훅 어.32흠 훅호썰썼값츤` 훅훅랏쏟 뽕봇 봇랏틈훅틈흩훅치 ㅇ

Eifimliifi'fi charters 뛴훅꿇썰봤 쇼뾰훅 텁 Services, 틈옻츤쇼뾰줌룻, 꺄

썼훅촨훅나 훅그숑훅훅볏 썰, 룻흠훅썰개꾸송 썰셈숑 Services o 꿇훅옻틈챠 o 썰채훅쏟쵸 틈츤훅쇼뾰훅촨썰캬 띈 폐쌤` 찹틈

fiafil fiurl fifiéfléfii, 룻캬흠 훅 if? " 꺄 뛴훅썰쏟틈궂섰

The need to be able to use the information provided by the organization, and the need for the organization to be able to provide the information to the public, is a matter of great concern. 꺄썰씁뽀숑썰룻숑.

3. Mr. José Luis González, First Secretary, Permanent Mission

훤 2025 E, 숑폄 숑폄 띈훅뚫쏟슘뾰틈흠 훅훅펜 410 10%, 훅훅펜 410

얕쩔꽈 "쌤표겟겟 훅폐뚜 흣슴훅씁훅 띈훅챠 8%; 뿌 폄볕츤꿇쏟후±

쇼뾰쌤흠훅훅텟 281쩐줌, 훅뿌햇 1 훅뿌햇 1롱 (숱) 혔훤 틈 voice-only speech 꺅썰룸틈썰헷 50 {mil/LU.

(i) 훤츤뜻또꿇씁쁘

1. **"+Ei'i" finding first 'fllfi**

"+드표" 틈폐햇 룻초룻훅훅 썰훅훅훅훈 쩔'틈

뿌 폄훤츤깻또뽐훅뾰훅 츤훅퓨훅 2020 i, 뿌훅훅훅 뿌텁뛴춘룻또뽐슘

쁘뵙흠훅츤챠 639 {£73, 2015-2020 뚜 룻솝훅씁훅챠 2. 4%, 썰춘훅체 틈밖훅틈훅훅°

쁠훅햇 숑폄묻숑숑뛴츤 룻또뽑쏟꼼썼또흠딴 훅훅주 폐 Mr. José Luis González Pérez 햐 "+Efl" 훅훅 WE 뛴츤룻또뽑

후±숑봇쇼뾰틈츤틈훅썰 훅훅썼룻봤, 틈숑흠 6% BE)? Services 짜훅썰썰틈` 그그뾰썰츤` 그썰썰 훅썰숱혔 뛴썼 흠틈틈틈틈 랏틈쏟흠

훅츤훅훅훅숑훅 "츤썰쏟 틈흠.

꺄놨챠웬훅끄훅 썼뛴틈 꾸틈흣또뚫` 떫츤흠훅훅 떫훅 훅

훅흣또꿇` 훅츤틈훅후춘뛴썰 딴흣또틈쏟 "+드표" iii E? 훅훅 뮌룻팻츤틈욧틈띈 훅촨틈썰썰튤흠° 썰훅 옻썰랐츤틈썼팻훅흠훅흠또욧토뽑` 볕치챈후뛴틈뮈 흣또뽑쏟흠 훅 썰딛훅팻0

썰룻, 쏟 T 깻빴틈구쇼뾰츠겟 쏟　뿌떫틈츤룻또꿇뽀초

변숑텁후±뿌섀썰뾰훅틈 햇ㅡ　　**FEE** I'TEJBriTJc

FEE, iEJflZ'TfflkW/fif$§%%i§ml.

Charters 쌌추봇햇 띈훅쏟챠 Transportation services 떫햇 츤흠옮 ` 츤훅챠훅 썰 "썰띈쏟훅훅썼.

2. Mr. José Luis Rodríguez Rodríguez

끼조코춘꼼홧뉴폐끄뛴숑폄츤 Voice-only broadcasting. 룻꼬훅쇄썰숑훅밖 훅펜±, 룻꼬훅훅썰숑훅밖 숑썰틈훅씁뾰쏟훅햇 썰썰 첵슘뾰딴 틈뜻쇼뾰썰썼 썰흠훅 혔훅훅훅훅훅썰햇 썰 썰 숑 틈 쏟 햐. 값슘쁘딴썰웠쇼뾰챠뀷 썰햇 꺄썰씁뽀 띈 훅 TL 훅EMU/{Ea

틈틈훤흥룻또뽐츤츤쏟 틈혔후쯔춘뛴추훅 훅쏟틈훅 5G 틈¨ 썰랏츤` 뀷숑츤흣뽑` 훅 썰홋훅핸 돋훅뛴츤끊틈 쏟호틈쌤폐 밖썰훅썰츤, 썰휩뀷썰 썰후크그틈구쇼뾰훅훤캬썼햇 썰흠텁F. 뛴춘룻또뽐츤흠틈훅훅훅 틈쭘틈치샘

꺄뀷씁뾰쩐 틈뜻쇼뾰흠 훅훅틈끼숑츤쇼뾰쏟슴 Mr. José María González

charters, charters, charters, and charters Mr. Kenneth T. K. Kennedy, Ambassador Extraordinary and Plenipotentiary, Permanent Representative to the United Nations (Chairman of the delegation)

그틈숑` 훅훅뀷훅훅훅 욧

ammo

3. 쫑훅훅훅컷봇 덤훅훅

줌폈훤 2025 5F, 숑텁띈춘룻또뽑 Rearrangements 썰틈훅훅훤 777

137E, "FEE" 틈폐뚜룻슴훅씁 푸 덤훅챠 4%; 뿌덥띈춘룻또훅츤±썰쁘츤틈훅훅폐 570157T3, 또훅츤±썰쁘츤틈훅폐 JEN", 5%? (42') BU.

쇼뾰쏟뛴춘룻또뽑썰틈훅 훅펙 10 45ft LXLO

('-', 뜬₩) 훅슴룻츤 훤썰슘쁘

1. 〃+EE" 썰봇썰깻꼬팻숑

"+드표" Ham, 댈폄틈슴흣썰띈 썰짭뾰훅숑썰훅 SUE?

growth trend, industry sales reached 12 billion dollars in 2020, 2015-2020

The average annual growth rate was 10.2%, exceeding the expected development target of 8% in the 13th Five-Year Plan. With the rapid development of China's communications equipment, aerospace and aviation markets, China's

The production capacity and revenue scale of the backbone enterprises in the hybrid IC industry have been further enhanced, and the application areas of products have been expanded.

During the "13th Five-Year Plan" period, the technical level of China's hybrid integrated circuit industry has also been greatly improved. Radiation-resistant DC/DC converters based on thick-film hybrid IC process have formed two major product series, namely, medium-low voltage and high-voltage, and have been applied to space stations, manned spacecrafts, cargo spacecrafts and other spacecrafts in batch. DC-20GHz multifunctional microwave frequency conversion transceiver 3D-SIP

However, at this stage, the overall industrialization level of China's hybrid IC industry

Local R&D and production units are mainly concentrated in a few state-owned enterprises and related organizations.

products, the frequency characteristics of a significant expansion, a significant reduction in size, has been applied in radar detection, electronic countermeasures, microwave communications and other high-end equipment. 100GHz microwave / millimeter-wave hybrid integrated circuits, power supply integration module 1/32 brick and other products have been realized in mass production. China's hybrid integrated circuit automated production level is becoming more mature, gold wire, gold tape, aluminum tape and other bonding to achieve automated production, BGA bump, FC flip-flop soldering and other advanced interconnect processes have been developed and mature, and has been widely used in products, LTCC, HTCC multilayer wiring ceramic substrate minimum line width / line pitch production level of progress is obvious, resistors, capacitors, inductors, passive components such as embedded tolerances Further reduced, thick film circuit interconnect current maximum significant increase in the majority of hybrid integrated circuit

However, at this stage, the overall industrialization level of China's hybrid IC industry
Local R&D and production units are mainly concentrated in a few state-owned enterprises and related organizations.

manufacturers product quality level to H level, sub-K level.

However, at this stage, the overall industrialization level of China's hybrid IC industry
Local R&D and production units are mainly concentrated in a few state-owned enterprises and related organizations.

The market is mainly confined to high-end equipment such as aerospace, and in the civil

The hybrid integrated circuits required by the civilian market such as communication equipment, automobile, medical electronics, etc. are heavily dependent on imports. At the same time, although the hybrid IC industry also belongs to a part of the integrated circuit, but compared to the monolithic semiconductor integrated circuit, hybrid integrated circuit market development is relatively slow, China's integrated circuit industry support policies are also difficult to implement to the hybrid IC industry, resulting in the industry is difficult to obtain the favor of the social capital, so the industry's further development has been subject to certain restrictions.

2. Development measures

Promote the development of key backbone enterprises of hybrid integrated circuits, attract social capital to invest in the hybrid integrated circuit industry, further improve the level of industrialization, consolidate the domestic market and expand the

technology, system integration (SiP) technology and other key technologies of hybrid integrated circuits, Design, manufacturing, testing and evaluation system to meet the systematization of electronic equipment in China,

international market.

Accelerate the transformation of hybrid IC technology results used in high-end fields such as aerospace to civilian fields such as communication equipment, rail transportation, automobiles, artificial intelligence, industrial Internet, big data centers, quantum computing, medical electronics, etc., so as to broaden the application boundaries of China's hybrid IC products.

Adhere to the science and technology innovation-driven strategy, with the goal of building a high-density hybrid integration technology research and development system with independent innovation-driven capability, accelerate the development of thin-film hybrid integration technology, thick-film hybrid integration technology, low-temperature co-fired multilayer substrate (LTCC) technology, aluminum nitride (AlN) multilayer substrate technology, multi-chip component (MCM) technology.

technology, system integration (SiP) technology and other key technologies of hybrid integrated circuits, and to improve the design, manufacturing, testing and evaluation system to meet the systematization of electronic equipment in China,

Demand for integrated and multifunctional development

Accelerate the promotion of integration between the hybrid IC industry and the materials, IC sealing and testing, and semiconductor monolithic IC industries, and improve the supporting capacity of chips, materials and equipment.

3. Economic indicators development goals

By 2025, China's hybrid IC industry sales will reach RMB 24.1 billion, with an average annual growth rate of 15% during the 14th Five-Year Plan period. The sales volume of China's local hybrid IC enterprises will reach 23.3 billion yuan, of which, the hybrid IC sales volume of two or more enterprises will reach more than 3 billion yuan.

(vii) Electronic ceramic device industry

1. "Development and status of the 13th Five-Year Plan

China's electronic ceramic device industry includes piezoelectric ceramic devices, microwave dielectric ceramic devices, micro-acoustic RF devices (surface acoustic wave and body acoustic wave RF

The situation has played an important role in China's production and marketing scale of explosive growth;

"In the m

In the middle and late fifth century, dielectric waveguide filters became a substitute for metal in 5G base station antennas.

devices), electronic ceramic components, and other categories of products.In 2020, the sales of China's electronic ceramic device industry reached 19.8 billion yuan, with an average annual growth rate of 6.3% in the period of 2015-2020, which basically accomplished the "13th Five-Year Plan "Thirteenth Five-Year Plan" projected 6% growth target.

After five years of development, the industrialization level of China's electronic ceramic device industry has been further improved. China's local enterprises have occupied most of the global piezoelectric ceramic buzzer, piezoelectric ceramic igniter, ultrasonic atomizer and other markets;in 2020, as a key component of the mask machine, piezoelectric ceramic transducer in the fight against the new crown pneumonia epidemic

The situation has played an important role in China's production and marketing scale of explosive growth;

"In the middle and late fifth century, dielectric waveguide filters became a substitute for metal in 5G base station antennas.

The preferred device of cavity filter, a large number of local backbone enterprises to invest in increasing production; at the same time, the

With the increase of wireless interaction applications in smart terminals, the carrying capacity of surface acoustic wave filters, body acoustic wave filters, and LTCC filters has increased significantly, which has attracted related enterprises in China to expand their production capacity.

In terms of technology development, temperature compensated SAW filters above 2GHz (TC-SAW), high-reliability piezoelectric ceramic actuator, 2.5mm × 2.0mm miniature surface acoustic wave device with ceramic base, thin film body acoustic wave (FBAR) filter, microwave dielectric ceramic devices, such as the "13th Five-Year Plan" focus of the product has been successfully realized in mass production. High-frequency multifunctional microwave composite devices, miniature highly integrated smartphone RF front-end module and other products have also been successfully developed. Lead-free piezoelectric ceramic

Not close enough, technology development can not keep up with the needs of industrial applications,

The problem of poor ceramic consistency has been difficult to solve for a long time, affecting the high-end electronic ceramic ware

materials have improved piezoelectric properties, and the production process has made great progress.

Although during the "13th Five-Year Plan" period, China's electronic ceramic device industry has made great progress, but the industry sales are mainly concentrated in low value-added products, the local backbone enterprises of the production and sales scale compared with the world's leading enterprises, there is still a large gap. At present, the domestic electronic ceramic devices of innovative design, application development capabilities are not strong, higher value-added high-end areas are mainly occupied by products from developed countries. Especially in the chip surface acoustic wave filter, chip body acoustic wave filter, high-reliability piezoelectric laminated actuator, high-power piezoelectric transducer, MEMS piezoelectric ceramic devices and other key products, China's technology and industrialization level is still very low, and some of the products are even still blank. Collaboration between industry, academia and research institutes in basic materials of electronic

Not close enough, technology development can not keep up with the needs of industrial applications,

The problem of poor ceramic

the problem of poor ceramics consistency has been difficult to solve for a long time, affecting the high-end electronic ceramic ware

ceramics is still low.

Not close enough, technology development can not keep up with the needs of industrial applications, The problem of poor ceramic consistency has been difficult to solve for a long time, affecting the high-end electronic ceramic ware

The progress of industrialization of the parts.

2. Development measures

Keeping up with the demand of high-end markets such as 5G smart terminals, 5G communication base stations, industrial equipment, medical electronics, and high-precision instruments, backbone enterprises are encouraged and guided to further expand the investment in key products such as chip surface acoustic wave filters, chip body acoustic wave filters, miniature LTCC radio-frequency devices, dielectric waveguide filters, and piezoelectric ceramic actuators, and to enhance product capacity.

Promote the combination of industry, academia and research, accelerate the lead-free piezoelectric ceramic materials, LTCC conductor paste and other basic materials, as well as multilayer, chip, high-frequency, modular, thin electronic ceramic devices, basic process research, grasp the patent layout. Promote the backbone of the industry to develop their own or jointly with semiconductor integrated circuit manufacturers to develop new RF modules, and strive to achieve batch applications in the "14th Five-

During the "13th Five-Year Plan" period, China's piezoelectric crystal device industry has shown a wave-like starting

Year Plan" period.

Support the development of small and medium-sized enterprises with independent intellectual property rights, enhance the level of automation in the industry, and comprehensively improve the quality of various products.

3. Economic indicators development goals

By 2025, the sales of China's electronic ceramic device industry will reach 27.8 billion yuan, with an average annual growth rate of 7% during the Fourteenth Five-Year Plan period. China's electronic ceramic device sales of local enterprises reached 19.5 billion yuan, of which, two (or more) companies of electronic ceramic device sales of more than 1.5 billion yuan.

(viii) Piezoelectric crystal device industry

1. "Development and status of the 13th Five-Year Plan

During the "13th Five-Year Plan" period, China's piezoelectric crystal device industry has shown a wave-like starting

In 2016 and 2017, in order to fill some of the Japanese pressures, a new system was introduced.

The market space ceded by the leading enterprises of piezoelectric crystal devices after withdrawing from the low-end product market, China's local enterprises of piezoelectric crystal devices expanded their production capacity in a big way, and the sales of piezoelectric crystal devices increased continuously. And in 2018, 2019 two years, the expansion of production capacity led to a rapid decline in product prices, coupled with the downstream market boom is not high, China's piezoelectric crystal device sales and continuous sharp decline. 2020, the computer and various types of home appliance market growth, piezoelectric crystal device demand once again climbed sharply, the industry resumed high-speed growth, and the sales reached 18.6 billion yuan. 2015-2020. From 2015 to 2020, the average annual growth rate of China's piezoelectric crystal device industry sales is about 2.9%, which is lower than the expected growth rate of 5% in the "13th Five-Year Plan".

From the perspective of technological development, during the "13th Five-Year Plan" period, China's chip piezoelectric crystal

The technology level of the device has been improved, and the chip rate is now more than 70%, 3215 type

Affected by the overall operating situation of the industry, the "13th Five-Year Plan" period, the development of China's piezoelectric crystal device local enterprises also appeared certain twists and turns, some enterprises to withdraw, objectively make the industry concentration has been improved, eliminated part of the backward production capacity. During the five years, China's piezoelectric crystal device local backbone enterprise business model has changed a lot, gradually from the Japanese, Taiwan counterparts OEM-based, to the management of independent brands, China's local piezoelectric crystal device independent brand influence has been greatly enhanced. Piezoelectric crystal device industry industry chain supporting capacity has also improved significantly, artificial crystal rods, crystal frequency piece, base, cover, shell, conductive adhesive, target material, fixtures and fixtures, automation equipment, measuring instruments, and other industries have cultivated a certain strength of the backbone of the production enterprises.

From the perspective of technological development, during the "13th Five-Year Plan" period, China's chip process has been improved, The technology level of the piezoelectric crystal and the chip rate is now more than 70%, 3215 type

(3.2mm * 1.5mm) Chip 32.768KHz Tuning Fork Crystal Device, Type 2016

(2.0mm*1.6mm) high-frequency chip voltage-controlled crystal oscillator (VCXO) on schedule to achieve mass production, 1210-type (1.2mm * 1.0mm)chip quartz crystal resonator, 1612-type (1.6mm * 1.2mm) chip quartz crystal temperature-compensated oscillator has been successfully developed. Photolithography etching process to manufacture miniature quartz frequency chip technology has been a major breakthrough, the successful development of 1.05mm * 0.75mm miniature, high fundamental frequency chip, for the further miniaturization of domestic piezoelectric crystal devices to lay a solid foundation. In addition, in terms of piezoelectric crystal device production equipment, China has also made a historic breakthrough, self-designed, independently produced chip piezoelectric crystal device automatic, intelligent line production equipment has been running online, breaking the monopoly of developed countries on the key automation equipment for piezoelectric crystal

Constrained

On the other hand, the domestic design and manufacturing level is low, and the vast majority of products are dependent on imports.

devices, and significantly improving the industry's labor productivity.

"Thirteenth Five-Year" period, China's piezoelectric crystal device industry to withstand greater operational pressure, has made considerable progress, but at this stage, China's piezoelectric crystal device industry's overall strength is still weak, is China's electronic components industry is still one of the few import and export deficit in one of the branches of the industry, a variety of high-end piezoelectric crystal device products rely on imports. rely on imports. China's piezoelectric crystal device local enterprises small, scattered, weak situation has not yet been fundamentally changed, industry concentration is low, piezoelectric crystal device business volume of more than 500 million yuan of enterprises are not many, even if the local leading enterprises, the scale of production and sales compared with the world's top enterprises, there is still a gap of several times. Upstream key supporting links still have a large shortage, especially in the

On the other hand, the domestic design and manufacturing level is low, and the vast majority of products are dependent on imports.

Constrained.

piezoelectric crystal oscillator special integrated circuits.

On the other hand, the domestic design and manufacturing level is low, and the vast majority of products are dependent on imports.

Constrained.

2. Development measures

Further accelerate the integration and innovation of semiconductor processes such as MEMS, photolithography etching and traditional piezoelectric crystal device technology, encourage the industry backbone enterprises to expand the scale of production and marketing of high-end piezoelectric crystal devices of chip, miniaturization, high-frequency, high-reliability, and limit the uncontrolled expansion of low-end production capacity, and promote the transformation and upgrading of the industry, and stable development.

Efforts have been made to cultivate excellent local brands in the piezoelectric crystal device industry and increase the sales ratio of self-branded products. Encourage local backbone enterprises to actively participate in standardization construction and expand international competitiveness.

By promoting in-depth cooperation between upstream and downstream enterprises in the piezoelectric crystal device industry, focusing on

"During the 13th Five-Year Plan period, due to the domestic and international macroeconomic impact, home appliances, and industrial equipment have not developed as well as expected, resulting in a global rela

equipment,

enhancing the integrated circuits for piezoelectric crystal oscillators, high-Q piezoelectric quartz crystal materials, conductive adhesive, ceramic package base, automated production and testing equipment, and encouraging the backbone enterprises to actively extend the industry chain upstream, and consolidating the foundation for the development of the industry.

3. Economic indicators development goals

By 2025, China's piezoelectric crystal device industry sales will reach 24.9 billion yuan, with an average annual growth rate of 6% during the 14th Five-Year Plan period. China's piezoelectric crystal device sales of local enterprises to reach 17 billion yuan, of which, two (or more) enterprises of piezoelectric crystal device sales of more than 1 billion yuan.

(ix) Control relay industry

1. "Development and status of the 13th Five-Year Plan

"During the 13th Five-Year Plan period, due to the domestic and international macroeconomic impact, home appliances, and industrial equipment, automobile, communication equipment have not developed as well as expected, resulting in a global rela

instrument industry is growing slowly. As a major production base of the global control relay industry Ground, China's control relay industry sales growth has also slowed down. in 2020, China's control relay industry sales will be about 25.2 billion yuan, with a CAGR of 2.9% from 2015 to 2020, which is lower than the forecast growth rate of 6% in the planning.

Although the "13th Five-Year Plan" period, China's control relay industry overall growth slowed down, but the performance of the local backbone enterprises, industry concentration has been greatly improved, the market position of the dominant enterprises is more consolidated, a few leading enterprises of the scale of production and sales in the global market has occupied a clear advantage in automobiles, industrial equipment, communications equipment and other high-end The share of high-end automobile, industrial equipment, communication equipment and other fields has also increased significantly.

From the perspective of technological

In terms of new relays with electronic and opto-electronic technology processes, China started late. Little breakthrough in industrialization.

innovation, one of the key products of the "13th Five-Year Plan" - high-voltage DC relay in the new energy automobile market, the rapid development of technology, the voltage of the product has increased significantly, and has realized the large-scale application in new energy vehicles, far exceeding the planning of the The target is far beyond the planning. Other key products and technologies, such as radio frequency relays, high-current high-power solid state relays, high-current high-power magnetic retention relays, low-power small power relays, and general-purpose relays with no calibration technology, have also been mass-produced or applied.

However, in the product pattern of China's local control relay industry, electromagnetic relays account for the vast majority of the industry, electronic solid state relays account for a low proportion of the application scenarios are insufficient, and there is a large gap between the production and sales scale of local enterprises of solid state relays and foreign brands. Moreover, in the MEMS relays, optical

In terms of new relays with electronic and opto-electronic technology processes, China started late. Little breakthrough in industrialization.

relays and other products that use micro-relays, the local enterprises have a large gap with foreign brands.

In terms of new relays with electronic and opto-electronic technology processes, China started late. Little breakthrough in industrialization.

2. Development measures

Grasp the opportunities brought to the control relay industry by the development of downstream application fields such as 5G communication base stations, new energy vehicles and charging piles, rail transportation, smart home, industrial automation equipment, etc., and promote the backbone enterprises in the industry to improve product reliability and expand the share of high-end market.

Strengthen the integration and development of the control relay industry and microelectronics industry, promote the cooperation between the backbone enterprises in the industry and the relevant universities and colleges, and jointly carry out the research and development of new relay products such as MEMS relays, optical relays, etc., to catch up with the international advanced level. Guide the backbone enterprises of domestic solid state relay to break through the bottleneck of industrialization and development, expand application fields, and enhance the supporting capacity of solid state relay.

Strengthen the industry chain integration,

"During the 13th Five-Year Plan period, as the Internet of Everything continues to deepen, China's sensitive

collaboration capacity, improve the supporting level of micro-fine electromagnetic wire, electrical contact materials, high-performance alloys and other key materials, and further promote the industry automation, intelligent development, expand the application of new production equipment in the control relay industry.

3. Economic indicators development goals

By 2025, the sales of China's control relay industry will reach 32.2 billion yuan, with a compound annual growth rate target of 5% during the Fourteenth Five-Year Plan period; the sales of China's control relay local enterprises will reach 21.7 billion yuan, of which, the sales of control relay of more than 1 (including) enterprises will reach more than 10 billion yuan.

(X) Sensitive Components and Sensors Industry

1. "Development and status of the 13th Five-Year Plan

"During the 13th Five-Year Plan period, as the Internet of Everything continues to deepen, China's sensitive

Components and sensors industry is developing well, especially at the end of the "13th Five-Year Plan". Period, the sudden new crown epidemic for body temperature monitoring temperature sensors, security monitoring with image sensors market have seen explosive growth, pulling China's sensitive components and sensors industry sales growth in 2020 than other electronic components branch, reached 92.9 billion yuan, five-year average annual growth rate of 11.2%, higher than the "13th Five-Year Plan "Planning 9% average annual growth rate target.

In the past five years, driven by the growth of market demand for new-generation mobile smart terminals, intelligent networked vehicles, industrial robots, medical electronic devices and other market demand, the global sensor market has developed rapidly, and local Chinese enterprises have gradually made their strength. During the "13th Five-Year Plan" period, through acquisitions and integration, the strength of Chinese local enterprises in image sensors, MEMS acceleration sensors and other products in high demand has been significantly improved, and in the field of image sensors, there are enterprises with

annual sales of tens of billions of dollars. At the same time, with the growth of the relevant domestic market, the production of pressure sensors, gas sensors, temperature sensors, humidity sensors, ultrasonic sensors, fiber optic sensors and other products of the local enterprises have also achieved faster development, market share has grown significantly, in some specific areas of the initial formation of international competitiveness. During the "13th Five-Year Plan" period, the industrialization level of China's local enterprises of thermistors, varistors and other sensitive components has also been greatly improved, and they have occupied a larger share of the global market for leaded sensitive components.

From the "13th Five-Year" period of China's sensitive components and sensors industry technology development, MEMS VOC gas sensors, high-temperature dynamic pressure sensors, laser environmental monitoring sensors and other "13th Five-Year" plan focus on the development of the product have realized

Industrialization; composite (integrated temperature, humidity, pressure sensing function) intelligent Products such as air probe sensors and ionic liquid electrochemical gas sensors have been successfully developed. The technical level of local enterprises of sensitive components has been improved, and further developed in the direction of chip-type, miniaturization and power type.

However, overall, China's sensitive components and sensors industry is still at a relatively low level. In addition to a few image sensors, MEMS acoustic sensors, most of the local backbone enterprises of the sensor sales of less than 500 million yuan. A variety of micro sensors used in a large number of intelligent terminals, automobiles, precision instruments, industrial robots, medical equipment and other fields of high-precision, high-reliability sensors, rely heavily on foreign brands. Although China's local enterprises in the field of sensitive components in the world has achieved a certain position, but the vast majority of products for the traditional lead-type, chip-type, miniaturized sensitive components, slow development, the production of very few enterprises, the global market

share of a few negligible. In the industry supporting aspects, China's specialization in MEMS chip process development and wafer manufacturing services are fewer companies, the development is lagging behind, it is difficult to meet the booming market demand for MEMS sensors.

2. Development measures

Grasp the historic opportunity of accelerated penetration of sensor applications into key areas such as smart driving, smart transportation, smart home, smart grid, smart factories, smart medical care and other key areas during the "14th Five-Year Plan" period under the auspices of the 5G network, and promote the development of the domestic sensor technology in the direction of integration, miniaturization, low-power consumption and high reliability. Around the intelligent terminal applications, focusing on improving the image, pressure, light, gravity, acceleration, angular velocity and other types of miniature sensors supporting capacity; around the medical equipment,

Industrial robots, automotive intelligent assisted driving systems, aerospace and other high-end fields

To accelerate the development of temperature, humidity, pressure, gas, image, radiation, displacement and other sensors to higher precision, higher sensitivity and higher reliability, and to broaden the application fields of domestic sensors; to accelerate the promotion of the development of sensitive components in the direction of miniaturization and miniaturization, and to increase the rate of miniaturization of domestically produced sensitive components.

For image sensors, acoustic sensors and other large-volume sensor branches, focusing on cultivating Chinese sensor brands with world-class competitiveness. Encourage social capital to invest in new, high-end sensitive components and sensors development and production enterprises, and strive to promote the industry's small and medium-sized enterprises to "specialization, specialization and new" direction of transformation, and to cultivate local high-quality enterprises with strong capability of independent innovation.

Accelerate the R&D and application of key materials, key processes and key equipment of sensitive components and sensor front-end, and break through the core technology. Focus on building a public service platform to provide OEM for MEMS sensor chips to break the bottleneck of small batch, multi-batch and special MEMS sensor development.

3. Economic indicators development goals

By 2025, China's sensitive components and sensors industry sales reached 142.9 billion, with an average annual growth rate target of 9% during the 14th Five-Year Plan period.

China Min

The sales of local enterprises of sensing components and sensors reached 112.9 billion yuan, of which, 1 (Including) more than one enterprise's sensitive components and sensors sales reached more than 20 billion yuan.

(xi) Optical connectors industry

1. "Development and status of the 13th Five-Year Plan

Optical connectors industry includes optical connectors, optical cable assemblies, open

In 2020, the sales of China's electric plug and socket components industry reached 299.4 billion yuan, with an average annual growth rate of 6.8% from 2015 to 2020, which is higher than the growth rate of 4% of the "13th Five-Year Plan" target.

During the "Thirteenth Five-Year Plan" period, China's connector and cable assembly local leading enterprises to grow, coupled with a large group of foreign-funded enterprises, China has become the world's largest production base of connectors and cable assemblies, China's production of connectors and cable assemblies for the world's intelligent terminals, computers, communications equipment, home appliances, automobiles, industrial equipment and other areas of a large number of supporting. The connectors and cable assemblies produced in China provide a large number of supporting equipment for global intelligent terminals, computers, communication equipment, home appliances, automobiles, industrial equipment, etc. In terms of switch buttons, despite the lack of growth in the global

consumer switch button market due to the development of touch technology, China's local switch button enterprises in the electric power, equipment manufacturing, industrial equipment and other fields have still made some progress, the overall level of industrialization and corporate strength have been enhanced. From the point of view of technological development, "Thirteenth Five-Year" period, China's photoelectric connecting elements The overall technical level of the overall progress is obvious. 56Gbps inter-board high-speed connectors, high-density fiber optic connectors, 3,000 meters deep underwater wet plug connector, micro-pitch FFC/FPC flexible electrical connectors, low-voltage VSWR electromechanical RF coaxial switches and other "13th Five-Year Plan" focus of the product are on schedule to achieve mass production. High-voltage high-current connectors, ultra-high-frequency coaxial connectors and other products have also been successfully developed.

Although the "13th Five-Year Plan" period, China's optoelectronic connectors industry has made remarkable progress, but at this stage, the products of

local enterprises are still dominated by low-end, and the R & D strength in basic research, materials, processes, etc. is not strong, making it difficult to support the industrialization of high-end products, which has resulted in the development of China's high-speed communication connectors, deep-sea connectors, micro-connectors and micro-cellular connectors, which are all very important to the industry.

The market share in areas such as type light touch switches is very low. Moreover, small and medium-sized enterprises in the industry

The majority of the industry, low concentration, automation, intelligent overall level is not high. At the same time, the electric plug components industry is China's electronic components industry by the standard and patent constraints in one of the most serious branches, the domestic photoelectric plug components industry standard competitive ability is still at a low level, the independent preparation of the standard there is a weak systematization, the development of a long period of time, the level of technology is not a high level of problems, the local enterprises to participate in the international standardization of the revised number is limited in international standards of the right to speak is not strong. In addition, due to the limited level of R&D technology, insufficient substantive innovation, poor patent awareness and other reasons, the lack of patents is a serious problem, and it is difficult to break

Further improve the brand influence of local leading enterprises of optoelectronic connecting components.

Shaping the Chinese optoelectronic connector component industry with high quality, honest operation and harmonious labor

through the patent barriers of leading foreign enterprises.

2. Development measures

Aiming at the application needs of 5G communication equipment, big data center, new energy vehicles and charging piles, marine equipment, rail transportation, aerospace, robotics, medical electronics and other high-end fields, we will promote China's optoelectronic components industry to miniaturization, lightweight, high reliability, intelligence, high-frequency, high-speed direction, and accelerate the transformation and upgrading of the optoelectronic components industry.

Strengthen the combination of industry, academia and research, and promote the local backbone enterprises of optoelectronic connectors to further carry out research on key basic materials, key equipment and key processes. Deepen the cooperation between upstream and downstream enterprises in the optoelectronic connecting element industry, encourage the establishment of standardization

Further improve the brand influence of local leading enterprises of optoelectronic connecting components.

Shaping the Chinese optoelectronic connector component industry with high quality, honest operation and harmonious labor

organizations and patent alliances led by local optoelectronic connecting element and key system machine enterprises, and accelerate the layout of high-quality standards and patents in the industry.

Further improve the brand influence of local leading enterprises of optoelectronic connecting components.

Shaping the Chinese optoelectronic connector component industry with high quality, honest operation and harmonious labor

National Brand. Promote small and medium-sized enterprises in the industry to improve the level of intelligent manufacturing and popularize digital Characterization tools to improve product quality and labor productivity.

3. Economic indicators development goals

By 2025, China's optoelectronic connectors industry sales reached 396.7 billion yuan, the average annual growth rate during the "14th Five-Year Plan" target is 6%. China's photoelectric connectors local enterprise sales reached 284.3 billion yuan, of which, one (including) more than one enterprise photoelectric connectors sales reached more than 35 billion yuan.

(xii) Microtome industry

1. "Development and status of the 13th Five-Year Plan

During the "13th Five-Year Plan" period, the global cell phone, automobile and other micro motor main application market growth is weak, because China is the world's largest micro motor production base, so the industry growth rate is inevitably affected, China's micro motor industry in 2020 sales of 102.8 billion yuan, the average annual growth rate of about

2.5% from 2015-2020, lower than the "13th Five-Year Plan" target of 5% growth rate. The average annual growth rate from 2015 to 2020 is about 2.5%, which is lower than the 5% growth rate target of the "13th Five-Year Plan".

With strong supply capacity in permanent magnet components, enameled wire, silicon steel sheet and other upstream key accessories, China has a high position in the global micro motor manufacturing industry, attracting many foreign micro motor large companies to set up factories in China, forming a variety of ownership enterprises coexist in the industry pattern. Although the overall scale of China's micro motor industry has seen limited growth in the past five years, the development of local backbone enterprises has remained robust. In addition to continue to maintain the competitiveness of white goods, electronic toys and other fields, in the mobile terminal touch motors, camera voice coil motors, automotive motors, drone motors, robot servo motors and other high-end microtome industrialization of motors

face, our local enterprises have also made great progress. The scale of leading enterprises holds
Continued to expand, micro motor products annual sales of more than 1 billion yuan of local enterprises have been few.

From the perspective of technological development, driven by downstream demand, during the "13th Five-Year Plan" period, key products of the "13th Five-Year Plan", such as integrated high-power brushless DC fans for base stations and data centers, and micro-motors for automotive intelligent safety electronic systems, have been realized and mass produced. High-precision brushless motors for surgical navigation robots have been successfully developed. The production technology of ultrasonic motors, brushless DC motors, switched reluctance motors, linear motors and other high-precision, energy-saving, integrated and intelligent micro motors has been greatly improved.

However, many of China's micro-motor enterprise development and design capabilities are weak, traditional design means, narrow field of specialization, the development of components is not

strong, especially micro-motor key drive control chips and power modules are heavily dependent on imports, resulting in the integration of motor and drive control development is lagging behind. Domestic micro motor industry is still dominated by small and medium-sized enterprises, the lack of new technology and equipment development and manufacturing capacity, machining selection of ordinary machine tools is still more than 80% of the share of computer-aided production, the use of information technology is still a large distance from the leading foreign enterprises. In addition, the domestic micro motor industry, the influence of local brands is low, the industry is seriously homogenized, price competition is fierce.

2. Development measures

Around the demand for mobile intelligent terminals, the further development of touch motors, camera voice coil motors and other ultra-miniature motors; around the industrial robots and high-grade CNC machine tools

Demand, vigorously develop high-speed, high-precision, integrated, intelligent servo motor;

The development of energy-saving, high-efficiency brushless DC motors and fans around applications in communication base stations, data centers, etc.; the development of highly sensitive, low-noise, high-reliability micro motors around automobiles, medical equipment, aerospace and other fields.

Guide the local backbone enterprises in the industry to advance into high-end fields, increase the popularity of local brand enterprises, cultivate the development of group companies with international standards, encourage enterprises to establish technology research and development centers and product testing centers, and develop brand-name products with international advanced level, stable mass production performance and independent intellectual property rights. Encourage enterprises to participate in the formulation and revision of international standards to accelerate international integration.

Promote the development of advanced design simulation tools by key enterprises in the industry,

and improve the design and R&D capability of micro motors and drive controllers. Cultivate specialized enterprises that produce drive control chips and power modules for the micro motor industry, and further promote the development of China's micro motor industry in the direction of mechatronics. Improve the supporting capacity of general parts and key materials such as housing, end cover, core, rectifier, brush, bearing, rotor shaft, plastic pressure parts, gear box, magnetic material components, etc. for micro motors. Strengthen the efforts of technological transformation in the micro motor industry, and promote the calculation in the industry. Flexible Manufacturing System (FMS) and Computer Integrated Manufacturing System (CIMS) and other advanced production technologies. Promote the integration of microelectromechanical manufacturing and information technology, develop in the direction of digitalization, intelligence, systematization and automation, promote the technological progress and quality improvement of complete sets of special manufacturing equipment, parts and components, key materials, catch up with the international advanced level, and enhance the microelectromechanical

manufacturing capacity.

3. Economic indicators development goals

By the year 2025, I'm going to have 1251 million dollars in this line.

The average annual growth rate during the "10 FEE" period was 4%. Chugoku Local enterprises

The wrong amount of money has reached 946 dollars' Among them, the number of micro-enterprises with more than one company has reached 946 dollars. Among them, the number of micro-enterprises with more than one company (including) has reached 946 dollars.

The amount of money spent in Tuen Mun has risen to over $200 per month.

{Smart} Strain.

(xiii) Tuen Mun device line here

1. "Development of the 13th Five-Year Plan and the current situation

"In the 13th Five-Year Plan, the main markets for tubular devices are

While the smartphone market is not expected to grow, the demand for smartphones, netbooks, tablets, and wearable devices is increasing. In the

same vein, the introduction of the Taro AirP0dS has been a major success.

Rising shoulder of stereo headphones (TWS headphones) elbow generation ' Artificial intelligence antagonist

The smart box market is also presenting a waterfall style. In the above favorable push robbery 'nearly five years have not' in order to cut the whole king seeks Tuantun fables OEM martyrs in this I just ware ll cattle who

In the year 2020, it includes the dresser, the casket, and the service ware,

Headphones, Speakers, Tun Parts, and more at the I Component Line

The amount has risen to 3,274 billion dollars. "The 13th Five-Year Plan's annual average speed is 4.7%, exceeding regulations.

The original 3% target rate for the Tun Tun device line has also become the target rate for the 13th Five-Year Plan period.

The fastest component branch in Tuen Mun is the most important one in pulling the whole bank out of the city. To cut the volume.

than 80% of the world's total device capacity is concentrated in China. The Global cell phone,篁 mudburntun, tablet mansion, Tunvision machine, wearable mansion Most of the crutches, devices, servers, headphones, etc., used in movie theaters and movie theaters are made of metal.

sound center Mansion components hang here

변삿섰변숑폄후±쇼뾰또흠0 쳤씁 숑텁 뛴숱뿡쏟씁뾰므훅 훅떫썼 훅훅썰쏟챠훅틈흠훅줌 햇 흠썰틈훅훅챠춘훅썰 폄혔훅틈쩐숑 훅틈쿄, 썰후±손뾰츤띈숱흠 charters 샵쏟치훅훅훅훅랗

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"+드표" 틈 폐 훅샨흠줄숑썰 줄숑룻룻뛴숱틈챈숲쉽쉽 쉽쉿썰 AéT/F, 숑떫띤흠뽑쏟씁뾰훅또 흠개뿌촨훅흥 훅썼훅썰 캬햇

MEMS ifififilms, 좋틈틈처룻

, 숑쁘썼흩훅훅훅훅훅 훅썰뮈썰훅숑썼룻킵틈 썰붙숑덥뛴흠 줌쇄쑤줌쇄쑤 꿇줌놨기궂딴칭겜뜻룻 튤-줄춘룻샨효혔흠쏟듭춘줄츠텁퉁 퉁, MEMS 핍흠꿇쏟 훅훅틈챠 뚫폈 틈훅훅흠토호호C37C↩틈 틈훅훅훅챠츤깻춘댈끓

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Peju, Peju Province, Province of Peju, Province of Peju

Peju Province (EJJUEEE)

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2. Mr. José Luis Rodríguez Rodríguez

츤볕숱뚫짭훅뾰딴 롤틈 썰흠틈츤핼훅썰꿇훅쑾 요삘 숑숑

Charters 햐개꾸, 썰훅 Rear Rear BFB0↩ 냠크 013M 챠초훅썰 챠초훅썰

훅 00빼` OBM 훅쵸훅흣 , 껴흐쏟구수륨 틈봇훅숑뛴 꽈썰랏샵 숑튤봇그` 초흠훅썰쏟치` 룻훅훅고츤챠 , 숱썰틈총츤처 E 's!Elf" 뛴훅흠굶폈숑훅훅°

썰괌숑꺄떫훤흠뚫틈쏟 쯔봇썰찹훅쏟훅 룻.

픔`흣` 뿌덥뛴츤굶숑씁뽀 훅슴

Mr. José Luis Rodríguez Rodríguez

Research on acoustic system equipment, consolidate the foundation of China's electro-acoustic device industry. Advocating fine
Benefit production, flexible production and other advanced manufacturing management methods to improve the automation and intelligence of the industry.

Aim at the development of intelligent voice technology, promote the integration of artificial intelligence technology and electroacoustic technology, and promote the development of electroacoustic devices to miniaturization, integration and multifunctionalization; improve the reliability of domestic electroacoustic devices and the R&D and design capability of the whole chain of acoustic system equipment, and expand the market share of domestic electroacoustic devices in the fields of electric vehicle AVAS (Acoustic Vehicle Alarm System) and in-vehicle voice interaction system, etc.; and grasp the opportunities brought to the hearing aid headset market by the arrival of the aging society. Grasp the opportunities brought by the arrival

The cable industry obviously shows the former high and then low trend. 2016-2017 two years, the
Industry sales can be achieved high double-digit growth, but in 2018 the U.S.-China trade

of the aging society for the market of assistive listening headphones, strengthen the cooperation between electro-acoustic product manufacturers and domestic hearing aid brand enterprises, and improve the independent supporting capacity of high-quality assistive listening headphones.

3. Economic indicators development goals

By 2025, China's electro-acoustic device industry sales will reach 417.9 billion yuan, with an average annual growth rate of 5% during the 14th Five-Year Plan period. China's electro-acoustic device sales of local enterprises to reach 364.5 billion yuan, of which, one (including) or more enterprises of electro-acoustic device sales of more than 50 billion yuan.

(XIV) Optical cable industry

1. "Development and status of the 13th Five-Year Plan

The optoelectronic wire and cable industry includes communication cables, fiber optic cables, cables for electrical equipment, electromagnetic wires and other types of products. "Thirteenth Five-Year"

The cable industry obviously shows the former high and then low trend. 2016-2017 two years, the industry sales can be achieved high double-digit growth, but in 2018 the U.S.-China trade

period, China's optoelectronic wire

The cable industry obviously shows the former high and then low trend. 2016-2017 two years, the industry scale achieved high double-digit growth, but in 2018 the U.S.-China trade

Industry scale

After the war, the export of communication cables and cables for electrical equipment was adversely affected. Rings, the industry growth rate began to slow down. And in 2019, the three major domestic communications operators of fiber optic cable procurement prices appeared waist down type decline, resulting in photoelectric cable industry sales slump; 2020 fiber optic cable procurement prices fell again about 30%, coupled with RF coaxial cable sales also declined, so that the whole photoelectric cable industry sales continue to dip. 2020, China's photoelectric cable industry sales of 335.5 billion yuan In 2020, China's optoelectronic cable industry sales of 335.5 billion yuan, 2015-2020 compound growth rate of -4.2%, much lower than the "Thirteenth Five-Year Plan" planning 5% growth rate target, but also the only "Thirteenth Five-Year Plan" during the sales of negative growth in the electronic components branch industry.

Although the "13th Five-Year Plan" period, the development of China's optoelectronic cable industry

Competitiveness is also growing. Communication cables, although by the "light into the copper retreat"
The impact of the industry growth slowed down, but due to China's rail transportation, security monitoring,

is not satisfactory, but the proportion of high-end products is rapidly increasing, the industrial structure is further optimized. Optical fiber and cable, in the Ministry of Industry and Information Technology "ultra-low loss communication fiber optic pre-fabricated rods and optical fiber 'one-stop' application plan" to promote the G.654E ultra-low-loss large effective area optical fiber in the terrestrial optical communication network and power communication network have achieved breakthroughs in the application of optical fiber; The production capacity of fiber optic pre-fabricated rods has been greatly improved, large-scale mass production of organosilicon rods, and basically has a full set of pre-fabricated rod manufacturing equipment and most of the key raw material production capacity; in addition, during the "13th Five-Year Plan" period, the submarine cable market has become the key breakthrough direction of the head of the fiber optic cable enterprises, not only in the production of submarine cables, but also to the offshore industry, to improve the production of fiber

Competitiveness is also growing. Communication cables, although by the "light into the copper retreat"
The impact of the industry growth slowed down, but due to China's rail transportation, security monitoring,

optic cables. Gain enhancement, at the same time to the offshore laying, cable engineering integration and other aspects of the continuous extension of the industry chain, the current not only to meet the domestic demand for special scenarios, the international general

Competitiveness is also growing. Communication cables, although by the "light into the copper retreat"
The impact of the industry growth slowed down, but due to China's rail transportation, security monitoring,

Data centers and other market expansion, China's local enterprises supporting the above market leakage Leakage coaxial cables, data cables, railroad signal cables and other products are still increasing sales. Electrical equipment with cables, in addition to cell phone data lines, home appliance power cords and other areas continue to dominate, China's local optoelectronic cable enterprises in the automotive, industrial robots, medical equipment, new energy, aerospace and other equipment with cables industrialization has also made greater progress.

From the "Thirteenth Five-Year" period of technological development of the optoelectronic cable industry, high-temperature irradiation-resistant aerospace wire, industrial robots with high bending-resistant flexible cable, rail transit with frost-retardant flame retardant fiber optic cables and other "Thirteen-Five-Year" plan key products have been successfully realized in mass production. G.652D ultra-low loss optical fiber, submarine cable with low loss and large effective area G.654.D fiber, high temperature

Extra-flexible conductors of copper wire wrapped around nylon or bulletproof wire, due to their spring-loaded construction. It has reached the world's leading level in physical properties such as bending and torsion resistance.

fiber optic sensors with special optical fiber has also been successfully developed. In addition, the deposition speed of fiber optic pre-fabricated rods, outer diameter size, $SiCl_4$ raw material utilization rate, the length of drawn fibers, as well as fiber drawing speed, have been significantly improved during the "13th Five-Year" period; ADSS, OPGW, all dry cable, micro-cluster cable, micro-tube cable, optoelectronic composite cables, indoor optical fiber cable and other special series of optical fiber products, innovation capacity has also been enhanced. The key technology of CAT8 data cable has made a major breakthrough, breaking the monopoly of foreign manufacturers. The series of products for aerospace equipment, such as polytetrafluoroethylene (PTFE) insulated winding wire, polyperfluoroethylene propylene (FEP) insulated mounting wire, and cross-linked ethylene tetrafluoroethylene copolymer (XETFE) insulated mounting wire, have also achieved stage-by-stage results. China's local enterprises in the field of industrial robotics research and development of the

Extra-flexible conductors of copper wire wrapped around nylon or bulletproof wire, due to their spring-loaded construction.

It has reached the world's leading level in physical properties such as bending and torsion resistance.

multi-root

Extra-flexible conductors of copper wire wrapped around nylon or bulletproof wire, due to their spring-loaded construction.

It has reached the world's leading level in physical properties such as bending and torsion resistance.

However, during the "13th Five-Year Plan" period, China's fiber optic cable production capacity is expanding too fast.

Intensified competition in the industry, the average price of the product has fallen sharply, many enterprises are therefore plunged into a loss-making situation, the development of China's optoelectronic cable industry has brought a great deal of negative impact, at the same time, although China's local enterprises have made a major breakthrough in the field of submarine cable, but the industrialization of submarine optical fiber and prefabricated rods for special optical fibers is still insufficient to meet China's and the world's needs of the marine communications engineering. In the field of communication cables, China has a large number of enterprises, the proportion of exports is high, the products are mainly low-end, in the "light into the copper retreat" and the United States to increase tariffs under the double pressure of small and medium-sized enterprises to increase the operating pressure. In

cables and
specialty fiber
optic cables.

- Accelerate industry integration, optimize resource allocation, increase industry concentration, and phase out

addition, in the automotive, medical electronics, industrial equipment, aerospace and other high-end areas, China's high-end cables and related materials, independent supporting capacity is still low, heavily dependent on developed countries' products, to the development of China's key areas of hidden danger.

2. Development measures

Guided by the demand for 400G ultra-high-speed and large-capacity optical transmission network and long-distance quantum secure communication, the company will further expand the application of ultra-low-loss fiber optic cables. Around the rail transportation, big data center, 5G communication base station, industrial Internet and other new infrastructure construction needs, vigorously develop leakage coaxial cable, CAT8 data cable, OM5 multimode fiber and other new high-speed communication optical cable products. Around the new energy vehicles, medical electronics, industrial robots, aerospace, marine equipment and other industry needs, accelerate the development of high temperature resistance, bending resistance, high

cables and
specialty fiber
optic cables.

- Accelerate industry integration, optimize resource allocation, increase industry concentration, and phase out

reliability, lightweight electrical equipment with line

cables and
specialty fiber
optic cables.

- Accelerate industry integration, optimize resource allocation, increase industry concentration, and phase out

Backward production capacity, support the healthy development of technology-based small and medium-sized enterprises with independent intellectual property rights.

Development, encourage the local leading enterprises of optoelectronic cable to carry out globalization layout, enhance international competitiveness. Increase participation in international standards, national standards and group standards, rely on independent intellectual property rights, and implement patent strategy. Vigorously promote intelligent manufacturing and green manufacturing, promote the application of environmentally friendly materials, reduce the consumption of raw materials, innovate circular economy technology, promote the recycling of materials, encourage the optimization and upgrading of high energy-consuming equipment to replace and reduce energy consumption.

Actively cultivate photoelectric cable key materials, equipment specialization enterprises, to further enhance the quality and grade of products, to protect the safety and stability of the photoelectric cable industry chain. Continue to promote the leading local photoelectric cable enterprises to engineering design,

integrated cabling, operation services direction, to cultivate photoelectric cable overall solution of high-quality local suppliers, in the industry to form a service-oriented manufacturing demonstration.

3. Economic indicators development goals

By 2025, China's optoelectronic cable industry sales reached 408.2 billion yuan, the average annual growth rate during the "14th Five-Year Plan" target of 4%. China's optoelectronic cable sales of local enterprises reached 310.2 billion yuan, of which, two (or more) companies of the optoelectronic cable sales of more than 20 billion yuan.

(xv) Optical communication device industry

1. "Development and status of the 13th Five-Year Plan

During the "13th Five-Year Plan" period, despite certain ups and downs in the development of China's optical communication device industry, the industry still achieved relatively fast growth, driven by the construction of global optical communication networks and data centers.2020, China's optical communication device

Industry sales reached $77.3 billion, an average growth rate of 9.6% from 2015-2020.

It is basically close to the 10% growth target of the 13th Five-Year Plan.

During the "13th Five-Year Plan" period, enterprises of different ownership systems have developed together, making China the world's largest production base for optical communication devices. Follow the pace of foreign dominant enterprises, five years, China's optical communication devices, the local backbone of enterprises also continue to strengthen their own strength through mergers and acquisitions, the industry concentration has increased, has formed a number of optical communication devices to reach more than one billion yuan or even billions of dollars in annual sales of local leading enterprises, several enterprises of optical communication devices sales scale has been among the forefront of the world. In order to seize the industry's commanding heights, over the past five years, China's leading local enterprises in the field of optical communication devices in the upper reaches of the optoelectronic chip has continued to make

efforts in the field of low-end optoelectronic chips in the field of market share has been significantly increased.

From the perspective of technology development, during the "13th Five-Year Plan" period, China's local enterprises realized the industrialization of 10G PON optical modules in fiber optic access networks, and at the same time broke through the core technologies of 10Gb/s EML laser chip and photodetector chip, 10G burst mode TIA electrical chip, etc., and realized the large-scale application of domestic chips. Combined with operators' existing system deployment, we have innovatively launched Combo-PON OLT optical modules, breaking through technical difficulties such as miniaturization of packaging and meeting high link budget indicators. In wireless access network, 25Gb/s DFB laser and 25Gb/s optical detector have been mass-produced, and technology breakthroughs have been achieved in 25Gb/s WDM laser chip, 50Gb/s PAM4 DFB/EML laser chip, PIN/APD optical detector chip and DSP chip. In the data center field, the key optoelectronic chips required for 400Gb/s optical modules have gradually matured and

can support the development of the entire 400Gb/s optical modules. In the core

In terms of chip packaging technology, the domestic local enterprises in the single-channel (wavelength) 100Gb/s PAM4 SiP modulator, EML, single-channel (wavelength) 50Gb/s PAM4 rate DML and VCSEL, as well as high-speed device packaging and so on have made breakthroughs, the laboratory based on lithium niobate thin film optical modulator has realized the single-channel 200Gb/s PAM4 rate of more than the test, the 800Gb/s module MSA has begun to carry out the technical and market discussions. In the field of transmission network, the core 100 ~ 200Gb/s silicon integrated coherent optical transceiver chip, DSP chip have achieved breakthroughs, narrow linewidth tunable laser has made a technological breakthrough, single-carrier 400Gb/s and higher rate coherent optical module (400G ZR, Open ZR +) has completed the development and began to be applied, and gradually sinking from the core network to the metropolitan area network, data center DCI applications. application. In order to make full use of fiber optic bandwidth resources, C-band extended 120-wave fiber amplifier and AAWG type wavelength multiplexer and demultiplexer on line side have been developed and tested in network.

However, China's optical communication device local enterprises with independent intellectual property rights of high-end core technology is not much, the products provided are mostly concentrated in the middle and low-end, the added value of the products is not high, the lack of sustained innovation, low price competition to maintain survival, the influence of independent brands is weak, the proportion of OEM for foreign companies is large, the ability to compete in the international market and profitability needs to be improved. In addition, the local optical communication device enterprises are more dependent on foreign optical chips, driving electric chips, special materials, high-end testing instruments and meters, high-performance automation process equipment, the industry's high-quality development of the foundation is not firm.

2. Development measures

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The systematization and engineering of packaging technology.Yoso Optical Communication Devices in 〉R/AR,

The new applications in multiple fields, such as cellular, smart keypad, and video, are geared towards the next generation. According to the preliminary layout of the quantum computing port in China, we are not going to do any analysis of the chip technology.

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"I've perfected the system.

The following is a summary of the work done by the Ministry of Health and Welfare.

Poetry Trout]-

One for the record.

The "Crossbones System" Support Cartridge

Soul Material Ikumata

Optical fiber integration of materials, devices, and system pits.

The 'tools of the trade' are in the areas of microchips, integrated applications, and the use of nuclear power plants.

This is a good way to create a strong and effective organization in the world.

throw in Mansion element line

3. Economic indicators development goals

By 2025, the sales of China's optical communication devices industry will reach 118.9 billion yuan, with an average annual growth rate of 9% during the 14th Five-Year Plan period. The sales of local enterprises in China's optical communication device industry will reach 91.3 billion yuan, of which two or more enterprises will have sales of more than 10 billion yuan in optical communication devices.

(xvi) Electronic Protective Components Industry

1. "Development and status of the 13th Five-Year Plan

Electronic protective components refers to all kinds of electronic components used in electronic circuits for over-current, over-voltage and over-temperature protection, and its development has been increasingly emphasized because it plays a very crucial role in the safety of people's lives and properties. During the "13th Five-Year Plan" period, China's electronic protective components industry is developing steadily, with sales (excluding thermistors, varistors and other sensitive components used for circuit protection, hereinafter the same) of about 14.8 billion yuan in 2020, with an

average annual growth rate of 5.9% from 2015 to 2020.

During the "13th Five-Year Plan" period, China's local electronic protection components industry has made great progress, the production and sales scale of backbone enterprises has improved significantly, and the proportion of chip-type current fuse, chip-type transient suppression diode (TVS) and other chip-type new electronic protection components has been enlarged; with the improvement of the reliability of the domestic electronic protection components, the main market of local backbone enterprises has gradually expanded from the appliance field to the high-end market of new energy, communication equipment, electric vehicles, industrial equipment, high-end equipment manufacturing and other high-end markets. With the improvement of the reliability of the domestic electronic protection components, the backbone enterprises of the main market gradually from the field of home appliances to new energy, communications equipment, electric vehicles, industrial equipment, high-end equipment manufacturing and other high-end market expansion, global market share has been enhanced. In the over-

temperature protection devices and other sub-product areas, some of the local backbone enterprise production and sales scale has been among the ranks of the world's major suppliers. From a general point of view, China's electronic protection components industry, although the number of local enterprises

The volume is high, but the scale of sales is small, and the annual sales of electronic protective components can break through

Fewer enterprises have broken one hundred million yuan, and the gap between them and the leading foreign enterprises is too large. The vast majority of the local enterprises of electronic protective components production capacity is concentrated in the lead type, large volume of products, miniaturization, chip products, production and sales are still very low, so in the electronic protective components of the largest demand for mobile intelligent terminal market, China's local enterprises basically have no market share. China's local electronic protective components enterprises are mainly oriented to the traditional home appliance market, although the domestic home appliance market is huge, but the safety and protection requirements are generally low, many home appliance manufacturers in order to reduce the cost of less or even no electronic protective components, but also affects the development of the domestic electronic protective components industry. In addition, China's electronic protective components industry, the overall

low labor productivity, automation, intelligence level needs to be improved.

2. Development measures

Accelerate the promotion of domestic electronic protection components to further miniaturization, chip, integration, multi-functional development, and strengthen the supporting capacity of mobile intelligent terminals and other markets. Guided by the demand for electronic protection components in emerging markets such as new energy vehicles, charging piles, 5G communication base stations, smart homes, smart grids, renewable energy, rail transportation, etc., we will accelerate the improvement of the reliability level of China's electronic protection components, and further expand the application in high-end markets.

Strengthen cooperation with downstream system machine manufacturers, jointly carry out social publicity on electricity safety, and encourage backbone enterprises of electronic protective components and system machine enterprises to jointly formulate higher-grade safety standards, so as to better protect people's safety of electricity while effectively expanding the market

demand for electronic protective components and upgrading the quality requirements.

Focus on fostering third-party testing and certification organizations for electronic protective components, and strengthen the Industry supervision; encourage mergers and acquisitions within the industry, guide and support electronic protective components enterprises to speed up information technology, automation, intelligent transformation, improve labor productivity, strengthen the strength of local backbone enterprises, focusing on supporting the development of product quality and reliable, honest and excellent business development, eliminating the production of low-quality, low-quality electronic protective components within the industry, the "small workshop "enterprises, optimize the structure of the industry.

3. Economic indicators development goals

By 2025, the sales of China's electronic protective components industry will reach 20.8 billion yuan, with an average annual growth rate of 7% during the 14th Five-Year Plan period. The sales of local enterprises in China's electronic protective components will reach 12 billion yuan, of which one (or more) will have sales of electronic protective

components of more than 1 billion yuan.