

Environmental Considerations Relating to Product

Our products are used in everyday electronic devices such as smart phones and tablet PCs, audio visual equipment and car electronics. At the stage of product development and design, we are committed to providing environmentally friendly products under the three keywords, "power saving", "miniaturization", and "proper management of chemical substances."

Environment-friendly Product Design

Power consumption reduction

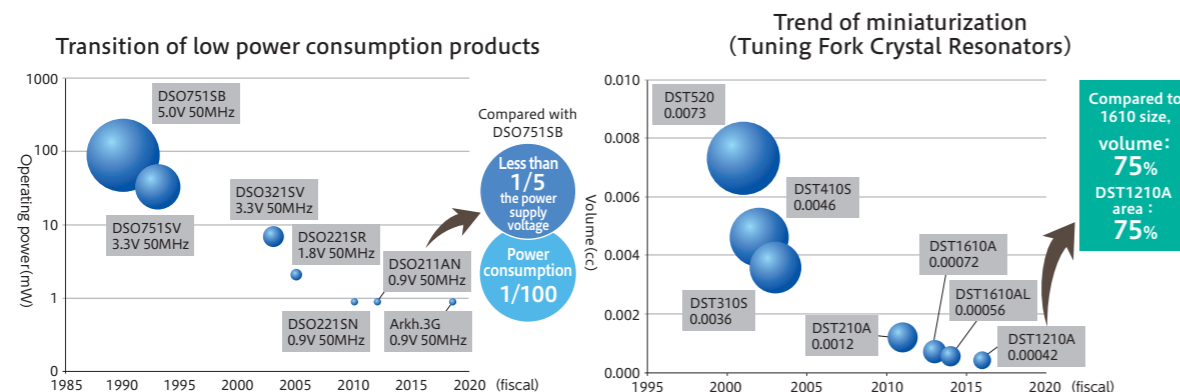
Reducing the power consumption of our crystal products has lowered power consumption by PCs, smartphones and other electronic devices. This in turn contributes to reducing CO₂ emissions.

Downsizing

By reducing the usage amounts of resources achieved through downsizing of products, this will contribute to space savings for substrates on which our products are embedded. Moreover, this also contributes to a reduction in CO₂ emissions during transportation and contributes to a reduction in resources to be consumed throughout the supply chain.

Strict management of chemicals

During examination in the phases of design and development of products, we confirm that no environmentally hazardous substances are used in components. Furthermore, also in mass production, we periodically check for existence of any environmentally hazardous substances by XRF analysis.



Energy Saving Performance of Arkh.5G (OCXO)

Crystal devices have temperature characteristics where the frequency fluctuates according to the external temperature. To correct such temperature characteristics, crystal oscillators called TCXO equipped with a function to correct frequency are generally used for GPS/GNSS and other purposes, but even a higher frequency stability is required for application at base stations, etc., and therefore, crystal devices called OCXO are used for such purposes.

OCXO is a device to reduce the influence of external temperature changes by continuously heating the crystal oscillator using a heater, but power consumption was very high for an electronic component. However, it is very important to improve this because as the 5G network expands in the future, the number of base stations will overwhelmingly increase compared to the 4G LTE era due to the frequency band used. Accordingly, we have developed the new OCXO Arkh.5G Series that can reduce power consumption to 1/4 or less of our conventional products. With this Series, we have minimized the heat capacity of the crystal by using in it our unique ultra-small crystal device, Arkh.3G oscillator, as well as achieved a drastic reduction in power consumption by adopting a heat insulation structure taking advantage of its small size.

We estimate that 50 million units of OCXOs for 5G base stations will be newly applied in the coming five years. If these are calculated based on the power consumption of Arkh.5G products, the volume of CO₂ reduced compared to our conventional products will be equivalent to that absorbed by 18,000ha of forest per year. Thus, we will promote market penetration of Arkh.5G products also from an environmental perspective and contribute to a reduction in environmental impact.



With Our Customers

Putting into practice the principle of "Customer First," the Daishinku Group endeavors to offer products that are trusted by our customers and the market. With our Quality Management System in place, we constantly strive to improve the quality of our products. We sincerely respond to feedback obtained through dialogues with our customers to maximize customer satisfaction.

Our Approach to CSR from the Viewpoint of Quality



Executive Officer and General Manager
Quality Assurance Div.

Toshiya Matsumoto

Under the corporate quality policy, the Daishinku Group strives to provide reliable products to the market and engages in quality improvement activities by implementing the principle of "Customer First," complying with laws and regulations and customer requirements, and establishing the concept of quality values. Further, upholding the "Realization of Ultimate Zero" policy of the Quality Assurance Div., we aim to be a company not just by supplying products but also by providing products that our customers admire and find truly irreplaceable. By establishing a quality management system that can meet our customers' expectations, we will continue to make efforts to provide all our stakeholders with security and safety.

Continuation of "ZD"
↓
Assertive Quality Control
↓
Ultimate Zero

- Reliance and Security -

"Towards Ultimate Zero from External/Internal Perspectives"

Quality Philosophy

- Thorough customers-first attitude
- Compliance to legal and regulatory requirements
- Establishment of the Concept of Quality Values

Quality Policy

- 1) Establishing a management system towards "Ultimate Zero";
- 2) Disseminating the "concept" horizontally in a repeated manner to move toward the phase of prevention;
- 3) Executing reliable evaluation of contradictions with "change" as a starting point;
- 4) Standardizing good practices by making "comparisons" between production bases;
- 5) Enhancing analytical abilities to propose the next move.

Quality in Three Aspects



Quality in Systematization

Continued quality improvement activities under the Quality Management System, in conformity with the global quality standards ISO9001 and IATF 16949.

Quality in Technology

Quality improvement activities focusing on stable production satisfying the conditions for product conformance based on reliability evaluations and preventive measures by means of combining design management technology obtained from past experience with new elements.

Quality in People

People as the true foundation of manufacturing, and human resource development with an emphasis on the cultivation of an acute sense of quality through QMS activities.

Quality Management System

The Quality Management System (QMS) is the international standard necessary for quality assurance and enhancement of customer satisfaction relating to product quality. The Daishinku Group has acquired ISO9001 certification at production bases in Japan and overseas (except for Kanzaki plant). The production bases that manufacture products for the automobile industry have acquired IATF16949 certification, which is specific to this industrial sector. We actively pursue continued product quality improvement with QMS. Our ISO certification status is viewable on our official website. (<https://www.kds.info/product-support/iso-certificate/>)

Communication with Our Customers



Director and General Manager
Marketing & Sales Div.

Hirofumi Okahara

We believe the situation with which customers are most impressed would be when we achieve results which are more than what customers expected. In other words, in case of when customers' expectations are not still clear, it would be much more valuable to our customers, if we could create suggestions on time which meet their potential needs. In order to do that, we will deepen our understanding of our customers and their industries, satisfy general expectations of our customers, communicate profoundly, and meet the needs which was drawn through mutual understanding as a sales department.

Based on the daily communication with customers, we will propose stable, high-quality products and services, while considering state of society and industrial situation. Then we will try to do our best to impress our customers than ever before.

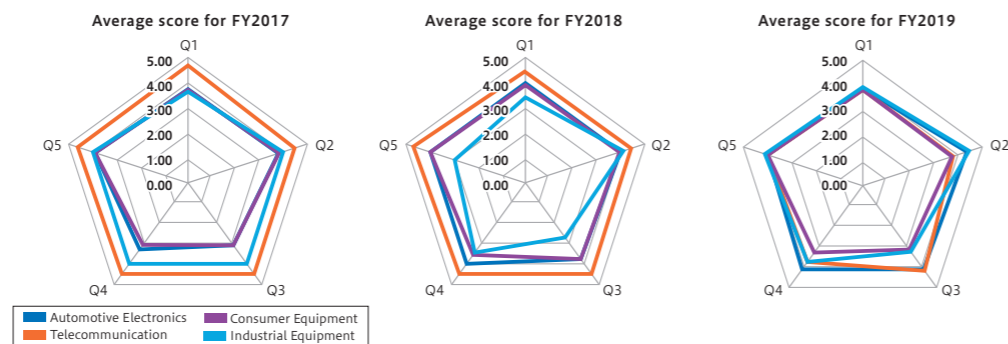
CS Survey



Sales Coordination Sec.
Atsushi Tanaka

Results of Survey by Market <Technical>

- Q1. Are you satisfied with our development capabilities to address your issues and needs?
- Q2. How were our responses?
- Q3. How about the frequency of visits by our technical staff?
- Q4. How was the technology presentation?
- Q5. Are you satisfied with our approach with the circuit investigation?



Response to Our Customers



With the Sales Department playing a pivotal role, various departments are working in cooperation to provide products and services satisfactory to customers. The Engineering Department joins meetings with customers to draw out their potential needs and makes concrete/proactive proposals to obtain higher customer satisfaction. Our engineers are stationed not only in Japan but also at major overseas bases in order to provide prompt and appropriate responses to customers around the world.

In the past, other than by e-mail or telephone, we mainly held face-to-face meetings with customers, but due to changes in the external environment, web-based meetings are now actively adopted as an effective means of communication. Previously, when we held discussions with a customer at a remote location, we mainly used telephone conference calls that connected multiple bases, but web meetings now allow us to hold discussions face-to-face with a sense of presence and to even share data, which allows us to realize meaningful discussions. The greatest advantage is that customer satisfaction is enhanced as not only the customer, Sales and Engineering Departments, but also relevant staff from Quality and Manufacturing Department can participate simultaneously.

Efforts in Indonesia



PT.KDS INDONESIA
Rofiqoh Cahaya Wulan

At PT.KDS INDONESIA, in order to produce and ship products that ensures customer satisfaction, we have conducted Zero-Defect improvement activities continuously since 2017. Each employee works to resolve problems autonomously and proactively, considering how to prevent defective products and where to find problems.

At the initial stage of these activities, we focused on preventing problem products from being shipped, but this has gradually shifted to a perspective of where and why a problem arises. For products with a record of complaints, we make an analysis of the contributing factors, trace the cause to a specific process, and take countermeasures as we continue monitoring. Further, we also conduct in-process patrols to ensure that past problem countermeasures are complied with. Moreover, we always look at our tasks from new perspectives, considering how to eliminate problems, such as implementing an initial flow check when operation is resumed after repairing any equipment, etc.

As a result of these efforts, the frequency of problem occurrences has resulted in a downward trend, and has declined by approximately 50% per month compared to last year. However, our goal is Zero Defect, and further efforts are required. While investigating problems, it has been found that work depending on individual workers and variations in the skills of such workers are part of the cause, and therefore, we are proceeding with development of a detailed work instruction chart based on workers' motion analysis to standardize the work, in parallel with consideration of shifting to automation or semi-automation.

What is most important to prevent problems from "recurring." To establish our corporate motto, "reliance," together with our customers, we will continue our improvement activities, such as reviewing the improvement process for achievement of Zero Defect.



Efforts in Tottori Production Div.



Tottori Production Div.
Hiroaki Iwaki

At Tottori Production Division, we manufacture crystal resonators, crystal oscillators, and tuning fork crystal resonators, that allows for downsizing and a high degree of precision. We maintain production lines that allow products based on new technology, such as the Arkh.3G series to flow - with high manufacturing skills and at a high-quality level, and conduct improvement activities day to day, aiming to be the best in the world in terms of QCD, as well as to increase customer satisfaction as a production division aspiring to be the mother factory of Daishinku.

What we consider the most important for QCD is Q (quality) and we are implementing Zero-Defect improvement activities. As a result of reviewing standard operations by quality risk prediction training, strengthening controls by automatic delivery of abnormal values, analysis focused on specific defects, etc., we have reduced the number of complaints by 70% compared to last year.

To achieve the Zero-Defect objective, we consider that the following measures are essential:

- 1) Check points to prevent defective products from flowing into the next process;
- 2) Activities to reduce defects under the principle of "3 Gen (Actuals)" – Genba (actual place), Genbutsu (actual product) and Genjitsu (actuality);
- 3) Standardization to prevent defective products from arising.

In the future, as further initiatives to achieve Zero Defect, we will create an environment to elicit input from on-site workers on problems they face and continuously make improvements, such as focusing on



secure startups under optimal conditions from a 4M (Man, Material, Method and Machine) perspective at the time of mass production of new products.

We aim to achieve quality that makes our customers always eager to purchase Daishinku products. We will continue to make daily progress in improvements, and strive to create a better work environment that inspires all to work together in the future as well.