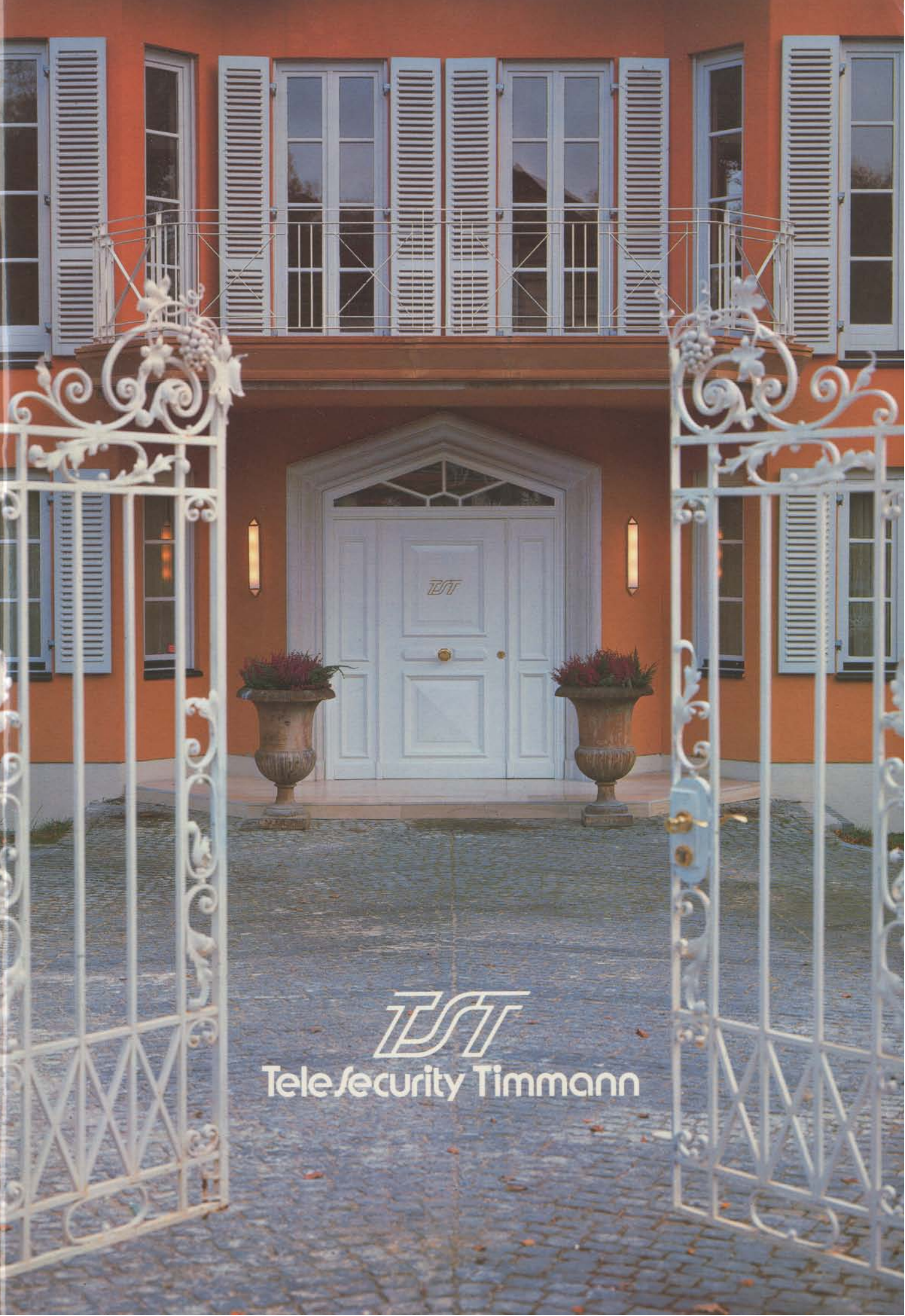
TST
TeleSecurity Timmann

Tele Security Timmann
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Tele Security Timmann

The present age of electronics has greatly changed the face of efficient enterprises. A good example of optimal adjustment to the requirements of our times is TST Tele Security Timmann:

In a pleasant building in peaceful surroundings a highly qualified staff finds the ideal atmosphere for scientific work, for the development and manufacture of top-quality products and the related marketing functions.

Welcome to TST – let us show you around an up-to-the-minute High Technology company ...

TST Tele Security Timmann was founded in 1970 by Klaus-P. Timmann as a research, production and sales firm for cryptographic communications systems. To meet the high quality requirements of the clientele – ministries, military, diplomatic corps and the business world – TST attached the greatest importance to meticulous development work and conscientious precision production. And the great success of the firm, which has meanwhile attained worldwide reputation, has confirmed that the objectives were right in every respect.

Klaus-P. Timmann
the founder of TST

The fact that TST now ranks high among the leading manufacturers in the field of text, data, voice, facsimile, telex and teleprinter radio ciphering is also due to another important decision: As far back as 1970, integrated circuits and microprocessors were used exclusively in TST equipment (at that time a pioneering achievement) – time was never wasted in building old-fashioned, mechanical cryptographic equipment.

An interesting collection of such oldtimers, long since incapable of keeping step with modern communications and cryptographic technology, can be viewed in our TST Museum.

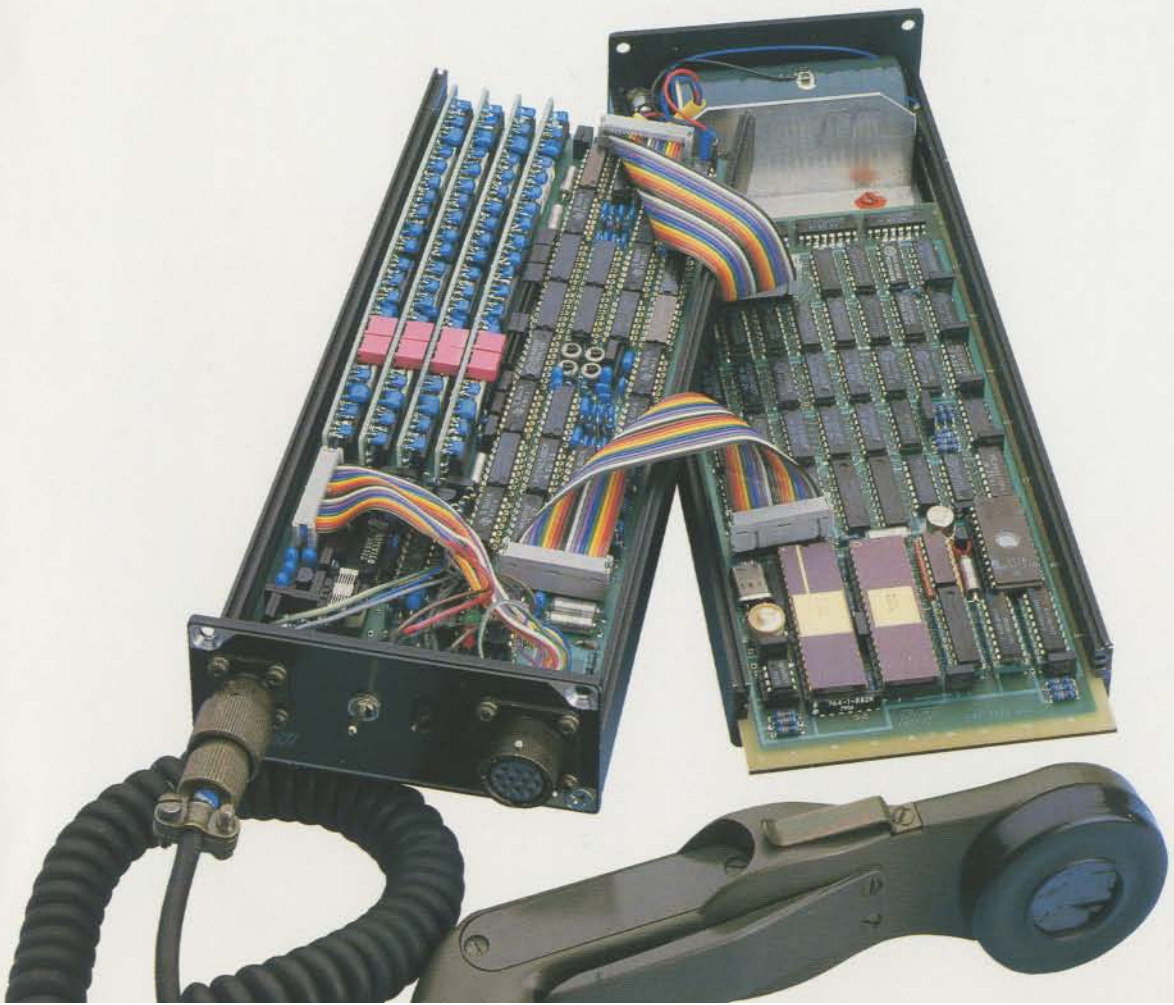
Some cipher units in the extensive collection of the TST Museum of Cryptography

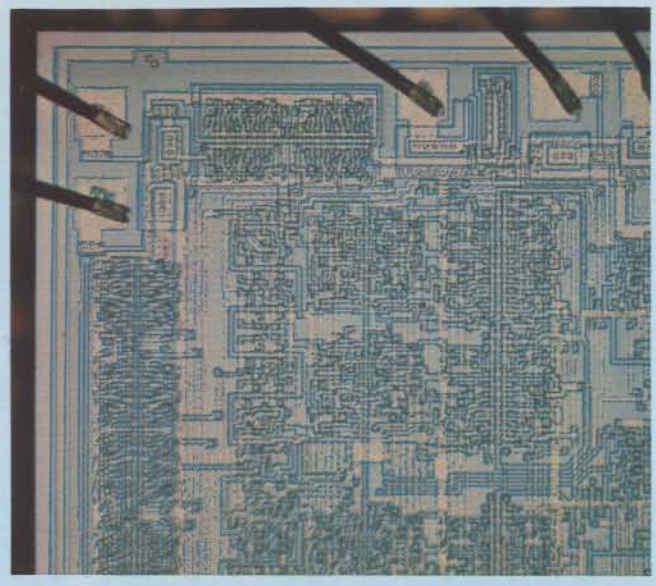
The TST Philosophy of Cryptographic Communications

The study and application of the new technologies of today, keeping abreast of and adjusting to the constantly accelerating progress in microelectronics, keeping familiar with and keeping pace with modern means of communication, pursuing research and further development of our own groundwork – all this is a prerequisite for our work in cryptographic communications. Together with the proficiency of our team of specialists, they guarantee the outstandingly high quality of all TST High-Tech products. Today, every type of information transmission can be secured by encryption with extremely high security with a key period of 10^{80}!

The high productivity of TST is ensured by the use of the very latest computers, automatic production facilities and extreme rationalization of operation. The astonishment of visitors at the relatively small, but highly qualified staff of our facilities is always a welcome compliment; it points out particularly clearly the sound business grounds and the philosophy of TST.

Microprocessor-controlled TST Voice Cipher Set with 10^{80} key





TST near Munich F.R. Germany

Insiders know that the famous "Software City" is the metropolis of "Silicon Bavaria" – that is, Munich, the state capital of Bavaria, in the beautiful south of the Federal Republic of Germany. In addition to the big domestic communications engineering groups, all electronic firms of worldwide importance have set up branch establishments here. What is more, in Munich's surroundings, thousands of hardware specialists and software experts are working in small firms on special tasks. TST, too, has its facilities in this interesting environment.

Easily accessible, just a few minutes by car to the south of the city, in Poecking, lie TST headquarters. This is the seat of the management and the head office for the administration of the entire firm. In keeping with its pre-eminent rank, the basic research is also located here and with a team of top specialists is engaged in seeking new knowledge in the field of cryptology.

Not far from the TST head office, in Tutzing, lies our main plant. Here, new cipher equipment is developed to the production stage and batch-produced. This is also the location of the marketing department, staffed with specialists for marketing, consulting and commissioning services. Our generously dimensioned, well appointed training rooms for courses for our customers are also in the same building, which lies in charming surroundings on the bank of Starnberg lake.

A short distance from the peaceful atmosphere of the Poecking and Tutzing facilities, but still close enough, the mechanical parts for TST equipment are produced in Faistenhaar. In this efficient plant right at the outskirts of the city of Munich, the robust housings for TST equipment are made of high-grade material. Numerically controlled, automatic milling and drilling machines do the work of dozens of hand-operated machines and at the same time improve the quality of the manufactured parts.

The separation of the three TST facilities has proved out. Each unit can work undisturbed and, without adversely affectings others, can accomplish the required top performance.

The Field-proven TST System

Since 1970, TST Tele Security Timmann has been producing electronic cipher equipment which is used worldwide, frequently under the toughest conditions. They can be used for secure communication in business and administration and also meet the stringent requirements of MIL standards ... Thanks to the firm's many years of experience, TST can now offer a complete range of cipher systems for every type of communication.

For instance, voice cipher sets for full-duplex operations in telephone networks or radio connections. The voice is digitally coded, then ciphered and digitally transmitted by high speed modems, a process, which guarantees extremely high security.

Handy text cipher sets whose built-in multi-line display presents the ciphered message; with an acoustic coupler, such ciphered messages can be transmitted directly by telephone.

TST telex cipher modules can be connected to any conventional telex machine, thus ensuring absolutely secure message transmission via the public telephone network.

The special HF SSB modem TST 4043 solves the problems of shortwave teleprinter communications and, like the entire TST system, guarantees extremely high security by a sophisticated, non-linear cryptographic design with a key period of 10^{80}.

And, of course, TST also offers cipher sets for protected facsimile, data and television picture transmission.

A complete range of equipment which, in constant practical use, has long since passed every test with flying colours.

Voice Security

Text Ciphering

Data Ciphering

TV Encryption

Telex Encryption

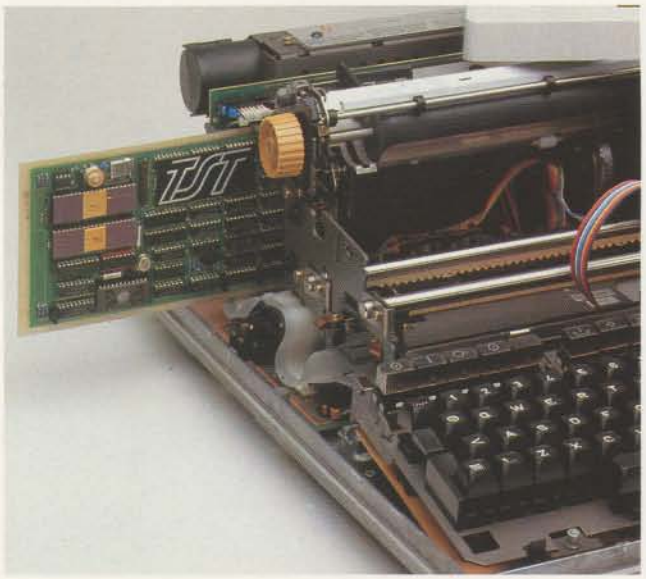
FAX Cipher

Radio Teleprinter Ciphering

Basic Research

Present-day communications engineering has been thoroughly revolutionized by the use of microchips and is undergoing still further refinement. In order to be able to keep ahead of that progress, TST pursues purposeful basic research. In newly equipped laboratories, new circuitry is developed and tested especially for use in crypto-technology. High-performance computers back up the scientific work: Where formerly dozens of engineers and technical draughtsmen were needed, the work is now performed in extremely short time by modern computer systems. Our mathematicians use large-scale computers for developing new algorithms in the ciphering sector and in the sector of error-correcting codes.

Instead of dozens of draughtsmen and drawing boards, just one CAD system – TST's conception of High Technology



...and Development

Long before TST equipment reaches the production stage, work goes ahead on development of the units: microprocessors are selected and tested, software is composed and checked, suitable accessories are augmented or newly designed, TST-specific special ICs are developed in co-operation with leading semiconductor manufacturers.

The first prototypes are built. Then begin the numerous tests in our laboratories, the results of which lead ever and again to improvement of the equipment.

The performance of equipment can be checked under extreme temperatures from −55 °C...+200 °C, shock and vibration tests are carried out.

But for us good laboratory results are not enough: For lifetesting, the preproduction models are additionally subjected to the most rugged conditions in practice.

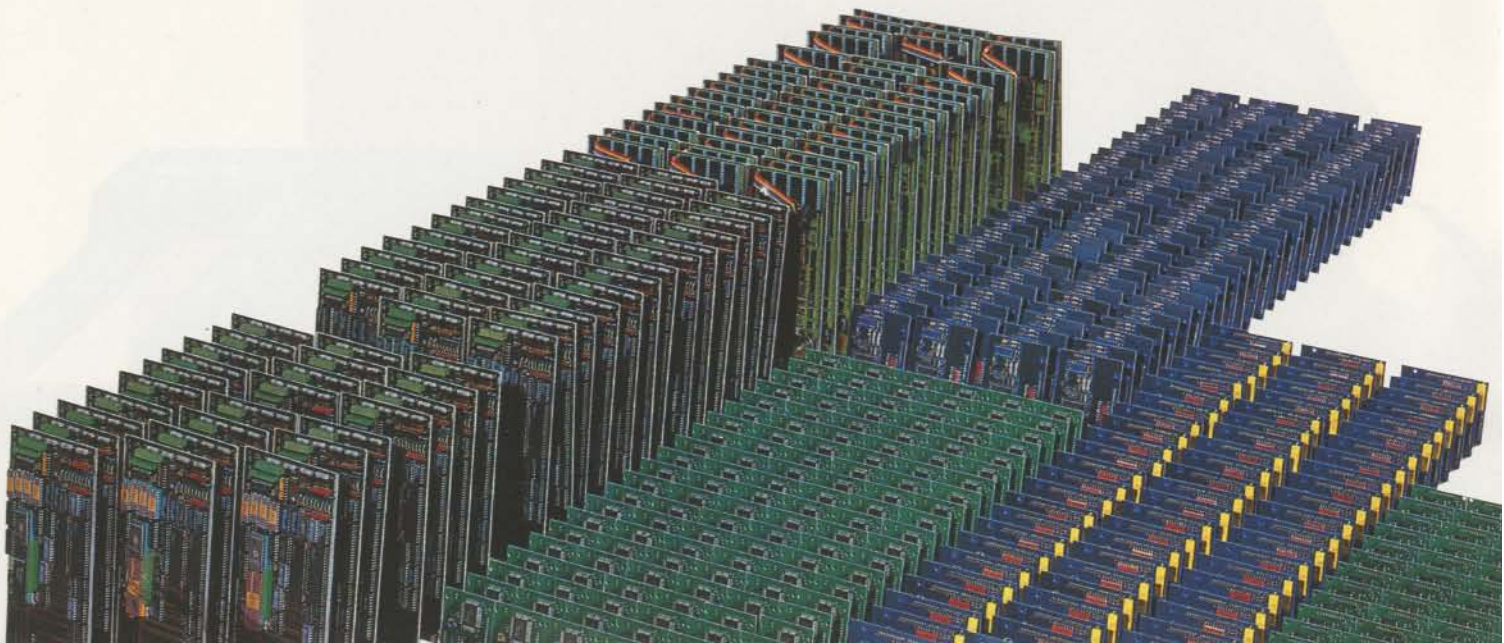
Efficient Production

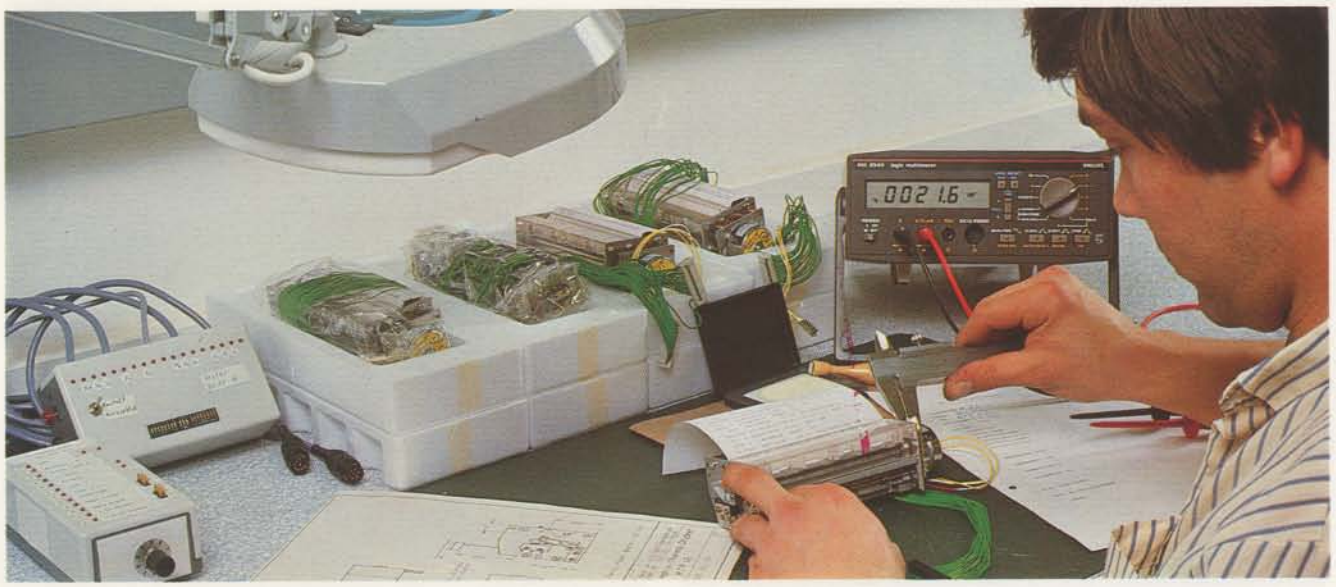
Highly qualified specialists, rational operations and up-to-the-minute equipment of the production facilities guarantee efficient production at TST.

The use of practice-proven components, far-reaching automation of production and constant control guarantee the required top quality of all TST products. And special orders for complex individual installations can be produced as reliably and promptly as larger batches comprising over 1,500 units per month.

Because we and our equipment are geared to extremely high performance: Up to 3,000 complete PC boards run through the automatic wave flow solder system every month, 7,000 boards per month can be cleaned in our ultrasonic cleaning facility, hours of manual testing and inspection can be reduced to a few seconds with the high-performance final test computer ... and so on and so forth.

TST equipment is made mainly with pretested components, special ICs are installed to keep equipment dimensions small

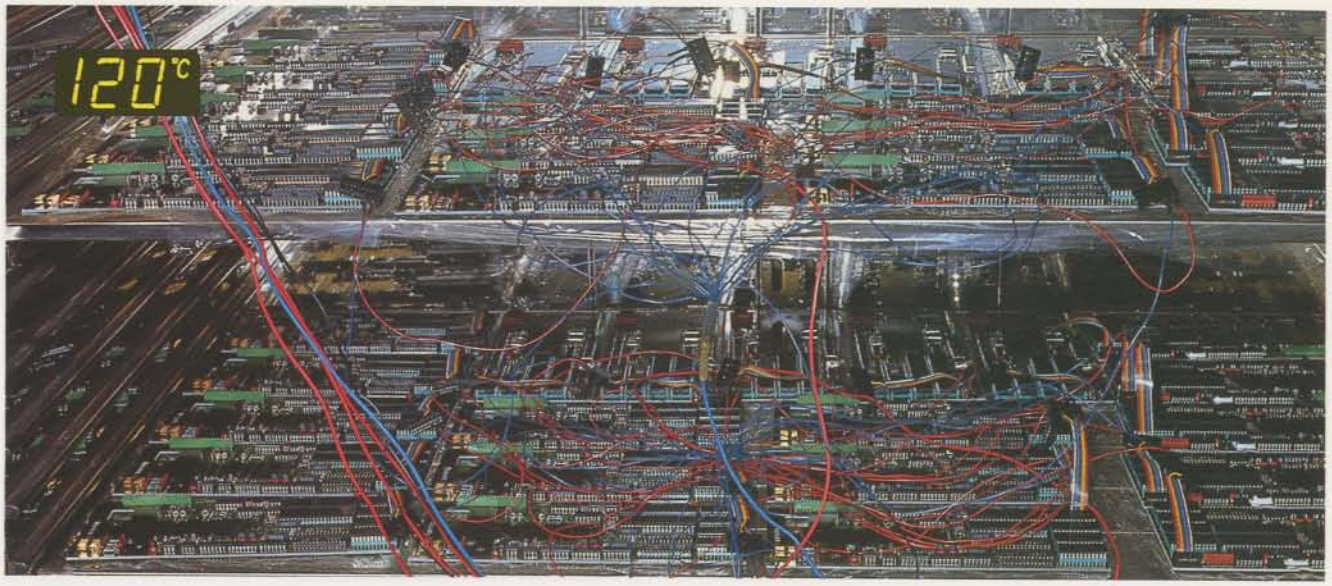




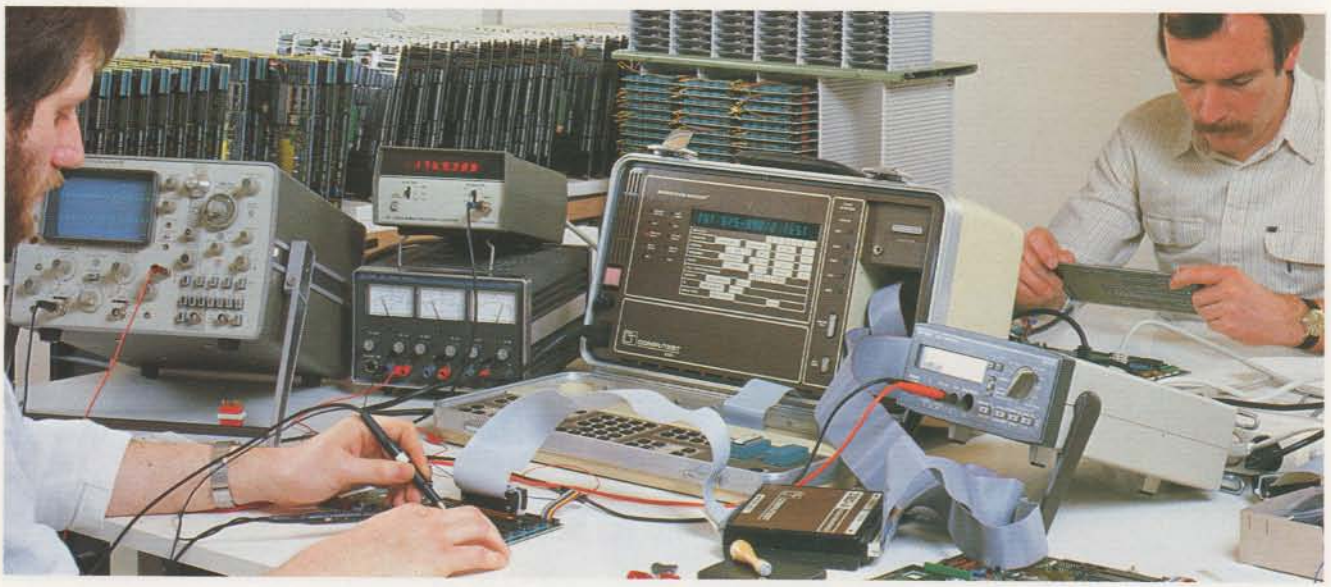
Every single component is checked on receipt and is passed for production only if in perfect condition

Prefabricated circuit boards are fitted with high-quality electronic components

The automatic wave flow solder system can handle up to 3,000 boards per month



At 120°C electronic components are artificially aged in the burn-in chamber, a process which greatly increases the reliability



Every complete PC board is tested and marked with an inspection stamp (QC) before installation

Experienced personnel is responsible for the final assembly of equipment at TST

Quality Control

After final assembly, all TST equipment is rechecked in a comprehensive final test program. Better and more unerringly (and in a mere fraction of the time) than is possible with manual methods, this important control is carried out by a computer system. The specially developed test programmes cover all the various types of TST equipment and test all individual components and their functions. Each test result is recorded, printed out separately and accompanies the respective set.

Only perfect equipment that passed all tests and thus satisfies the high TST quality requirements is released for delivery.

Only carefully tested equipment is released by TST for delivery

Customer Support and Training

For the support of customers all over the world, TST has set up a well-functioning service organization. A specially trained team of consulting engineers and technicians is available and equipped to fulfil customer's wishes on the spot, rapidly and reliably. Whether expert advice is needed on optimal equipment, a thorough demonstration of our cipher sets, or technical support for existing systems – our service staff is always available at short notice.

Over and above that, training courses are held for customers in TST's own training rooms. For such courses, our lecturers of international repute are available to teach cryptology, as well as experienced technicians to familiarize trainees with the mode of operation of TST cipher systems.

In the well-equipped TST Training Center courses are held for customers from all over the world

Marketing

Our proven marketing organization ensures good contact between you and TST. For fast, direct information, you can either call our office in Germany (phone/fax: -81 58 / 20 51) or send us a telex (No. 5 27 775 tst d). Written inquiries will be answered promptly. In addition, in more than 100 countries our agents and representatives provide thorough support for our customers. International fairs for communications engineering are a further good opportunity to get to know TST's latest equipment. At the most important exhibitions TST has a stand where you can obtain detailed information on the entire range of products.

To provide comprehensive information, documentation material is available for all TST equipment

TST Security made in Germany

The possibilities of worldwide communication, which are necessitated by international relations and are already a matter of course, are not perfect without ancillary equipment. Everyone knows how insecure confidential telephone conversations are, how often telex messages arrive at the wrong address, or how easily radio messages can be intercepted ... Important messages therefore have to be secured!

The TST cipher system guarantees extremely high security for every type of communication-security you should not do without, if you want your message to reach your addressee only. TST, one of the leading firms worldwide in the field of cryptographic communications, supplies the appropriate equipment. Many years of experience, intensive research and development, the very latest production methods – that is TST security ... security made in Germany.

Worldwide Secure Communication
TST – Security made in Germany

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