The portfolio of Crypto AG: everything you need for the secure handling of information
Founded by the cryptology pioneer Boris Hagelin in Zug, Switzerland, in 1952, Crypto AG is a legally and economically independent Swiss company. Our business location, Switzerland, has neither export restrictions on powerful encryption technology nor governmental supervision or key deposit obligations. In other words, we put the emphasis on your security even in our choice of business location.

Customers around the globe
Every individual user of information and communication technology has his specific requirements as regards security and technology. To date, Crypto AG has designed and manufactured security systems in over 130 countries, always with an eye to forging long-term partnerships. There is probably no user scenario that cannot be addressed by a solution from Crypto AG.

Our main clientele consists of governments, foreign ministries, and diplomatic missions, ministries of interior and police stations, armed forces by land, on sea and in the air and other governmental and non-governmental organisations.

Everything you need for the secure handling of information
If you need a security solution optimally attuned to your mode of operation and security policy, you will have a hard time finding it in the range of ready-made security products. You will probably have to rely on an individually designed planning and implementation process that allows you to align the cryptographic and operational elements to your users’ needs and to gain autonomy. In the end, you are the only one who is privy to the security elements and your mode of operation.

The best solution for you
With Crypto AG as your partner, you can implement your security project efficiently and on budget with no risks involved. Along with the most modern technology solutions available, we provide you with comprehensive services and efficient project management, so the systems created for you will be user friendly. Throughout the entire life of your system, we provide you with support services to guarantee autonomous operation and high availability in each user environment. The issues you focus on in your daily work are the same ones we focus on in our search for the best solution to meet your needs.
The unique Security Architecture from Crypto AG

Crypto AG has always ensured that your confidential information is protected from unauthorised access, with the most modern means of cryptography available. This objective still permeates the entire company philosophy today.

**Our Security Architecture**

At the heart of our security philosophy is our Security Architecture, which is unique in kind and has been further developed over decades. The individual secret algorithm basis forms the foundation of this Security Architecture and is used only by you. As a customer, you can modify this basis at any time and assume sole control of your individual security solution. That means you are independent of your supplier Crypto AG. The encryption processes in each unit of your network run in a separate tamper-proof hardware security module. Your security data and keys are available only in the module (in encrypted form) and thus not accessible to anyone else in plain text. In addition, we supply you with the Acceptance Cipher Check (ACC), a unique tool that allows you to run a scientific verification of all security functions in your solution at any time.

**Centralised Security Management**

In everyday encryption, an efficient, easy-to-use security and key management system allows full use to be made of the flexibility of this architecture. This system works seamlessly with your own network management. Your mode of operation and security policy are given optimum support at all times, even if important factors in your operating environment change.

**Remote Access Device**

The Remote Access Device allows you to access network encryption units remotely from a central point, thus simplifying the task of managing network configurations and optimising the operational availability of your network.

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**The portfolio of Crypto AG**

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Information security is always implemented as a customised project, so you can determine the scope of services based on your own requirements and objectives. There are five lines of services available in the portfolio:

**Consulting Services**
Experts analyse the status of your communication system and workflow and recommend ways of improving their efficiency, throughput or level of security. These recommendations can be used internally to justify your investment decisions and support your budgeting process.

**Implementation Services**
These support services begin with the initial idea and extend to the handover of a secure turnkey information and communication system. A dedicated project manager acts as your single point of contact, and perfectly coordinates the progress of work with your own experts. You have the guarantee that your system will be completed on time, within budget and in full compliance with your technological and security objectives.

**Education Services**
Crypto AG has run its own in-house Crypto Academy for decades. This institution received a “Premium Class” rating from the International Training Centre Rating Organisation. Your own experts will be armed with the practical skills and know-how they need to ensure the independent operation of the systems.

**Operational Support Services**
Whenever your experts face issues that go beyond the scope of standard procedures, our central contact point provides you with any support you require. Experienced engineers will give you advice and recommendations on how to get the system back online quickly and/or organise the delivery of spare parts.

**Lifecycle Management Services**
Systems intended to be constantly available have to be checked and updated periodically with regard to, e.g. security objectives, system configuration, migration, logistics processes, personnel expertise or software and hardware upgrades. These efforts prolong your systems’ service life and optimally protect your investment.
Technology and cryptography from Crypto AG have been tried and tested in the field. We have implemented a large number of security solutions worldwide to cover a broad range of scenarios.

**A solution for every need**
The security solutions from Crypto AG are deployed for all prevalent information and communication technologies. That means our range covers solutions for IP-based applications such as Voice over IP and for classic PSTN applications, for all common (broadband) network technologies, and for radio or satellite communication. If you become a customer of Crypto AG, you can efficiently implement all security projects with professional and sustainable results in all common networks and for all user scenarios.

**Everything from a single company**
Effective systems should guarantee maximum security standards yet also be easy for users to operate. An integrated combination of hardware and software is the only way to achieve this goal.

We are able to develop, produce and test all security-relevant components in-house thanks to our staff of some 500 qualified and motivated employees, including scientists, cryptologists and engineers. Crypto AG is certified in accordance with international standards for all relevant quality and management systems.

**Absolute state-of-the-art**
Our in-house development department works at the cutting edge of technological progress. That means security solutions bearing the Crypto label are absolute state-of-the-art in terms of performance and security standards. Drawing on our experience, we enable you to implement an exclusive, end-to-end security philosophy for your various networks and applications. Upgrades keep you in step with any major technological advances that occur and ensure constant interoperability. You avoid any security gaps in your flow of information whilst also cutting your operating costs.

The following pages provide you with an overview of our portfolio of services and solutions. A meeting with our experts is the easiest way to find out how Crypto AG can meet your individual security needs.
Each network technology has its own special strengths and meets different needs. Broadband communication is based on transport media such as optical fibre, microwave, copper and satellite links.

Crypto AG provides security solutions for all common network technologies, protocols and bandwidths. All of these solutions have two traits in common: they guarantee maximum security and do not impair transport performance (of up to 10 gigabits per second). The configurations may be point-to-point, multipoint or multicast depending on the technology. There are no limits to network dimensions for civil or military applications (C4ISTAR).

**Ethernet Encryption**

Ethernet plays a key role in the efficient transport of data directly from local networks (LANs) to global broadband networks. With this technology, the data travel from LAN over optical fibre rings in a metropolitan network (MAN) and beyond to global networks (WAN) with no change of protocol. That means Ethernet is capable of transporting any mix of common applications simultaneously. Ethernet is therefore of great interest for real-time data transmission by military users (highly redundant C4ISTAR networks), government ministries (large mix of applications) or banks (constant availability) as well as for the integration of storage scenarios.

**SONET/SDH Encryption**

SONET/SDH (Synchronous Optical Network or Synchronous Digital Hierarchy) is a tried-and-tested technology for broadband data transport over optical networks. It ensures quality of service and allows the quick addition or dropping of streams of data between core and sub-networks. SONET/SDH is especially well-suited for core networks operated by public authorities, the military and private companies such as banks and financial institutions.

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**Our Broadband Highlight**

**Ethernet Encryption HC-8555 10G**

- 10 Gbit/s encryption performance in full duplex mode!
- Easy integration and minimal maintenance
- Plug-and-play operation
- All transported services/applications (voice, data, video) are encrypted
PDH Encryption
PDH (Plesiochronous Digital Hierarchy) is a classic, standardised technique for the transmission and multiplexing of data. PDH can be used in connection with common transport technologies, e.g. copper lines, microwave links or satellite links.

Frame Relay Encryption
Frame Relay (FR) is a reliable network technology based on data packets and is used primarily for WAN applications. Its special advantage is that it makes efficient use of the bandwidth. Frame Relay is therefore frequently employed in satellite communication (VSAT). FR is also efficient when it comes to security. Your FR data packets are encrypted (at OSI Layer 4) so you can protect all your transported applications automatically and reliably at the higher layers.

Storage Encryption Solutions
Storage Area Networks (SAN) that are used in data centres, disaster recovery or data backup centres, or that link these centres with each other, generally utilise Fibre Channel (FC) technology or of late, FC over Ethernet technology. Crypto AG designs individual scalable storage encryption solutions (for up to 10 Gb), minimal latency times and maximum availability to protect these transported data from being accessed by third parties.
VPN (Virtual Private Network) is a communications process that has gained worldwide use in connection with the Internet. Technologically, IP VPN is based on the Internet Protocol (IP). Despite its name, IP is not limited to the Internet. It can also transport data with other network technologies.

No data is exchanged between the VPN (Virtual Private Network) and the transport network. The confidentiality, integrity and authenticity of your information remains assured at all times.

Secure in tunnel mode
IP VPN encryption units from Crypto AG operate in tunnel mode protocol, a high-security method that also encrypts the original IP header so the identity of the sender and the receiver remains invisible.

“IP everywhere”
From the portfolio, you can select the ideal model for each bandwidth requirement for up to 100 Mbit/s or 250 virtual tunnels. In addition to stationary units for integration directly into the infrastructure, Crypto AG also provides mobile or portable models. A universal IP encryption platform for military C4I-STAR scenarios provides support especially for the end-to-end integration of core and edge network areas, rendering the classic distinction between strategic and tactical communication obsolete.

IP VPN security solutions from Crypto AG have triple-play capabilities (data, voice and video), which also make them ideal for Voice over IP (VoIP) or Fax over IP (FoIP) applications.

Our IP VPN Highlight
Crypto Mobile Client HC-7835 IP VPN
- Small, handy unit for use while travelling
- All applications, e.g. e-mail, VoIP, data or video, are protected
- Easy to connect to notebooks or PCs (USB/Ethernet) regardless of the operating system
- Network access via Ethernet (or optionally via WLAN or Bluetooth)
- Compatible with all other IP VPN units from Crypto AG
A large part of daily office communications today is still routed through classic PSTN applications (analogue and ISDN telephone) and fax. At the same time, the use of IP-based applications is on the rise. Crypto AG provides specific encryption solutions as well as secure workstations in which IP VPN encryption can be integrated as an additional security function in tandem with local security.

**Telephony/PSTN Encryption**

When you talk with someone on the phone, the confidentiality of the information you communicate is not guaranteed. To eliminate this risk, Crypto AG provides a compact desktop unit for practical installation as a plug-and-play application. This system guarantees end-to-end encryption between two suitably equipped units, e.g. also with Secure GSM, the mobile phone solution from Crypto AG.

**Fax Encryption**

Even in this age of the Internet, faxes are virtually unequalled when it comes to sending documents in a legally binding manner. Crypto AG offers you fax encryption units of excellent quality, also available with a colour option.

**PC Security**

Crypto PC Security is a PC card that provides comprehensive hardware-based local security.

**Protected Workstations**

These stations are available in a desktop version or a ruggedised laptop version adapted to whatever special operating conditions are involved (e.g. emission protected workstation in buildings housing different embassies).

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Office Security Solutions

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<tr>
<th>Product</th>
<th>Description</th>
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<tbody>
<tr>
<td>PSTN Encryption HC-2203</td>
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<tr>
<td>Fax Encryption HC-4221</td>
<td></td>
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<tr>
<td>Crypto Ruggedised Laptop HC-6835</td>
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<td>Secure GSM HC-2423</td>
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<td>Crypto PC Security HC-6360</td>
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**Unser Office Highlight**

**Crypto Emission Protected Workstation HC-6950**

- Complete solution consisting of PC, screen, printer, scanner etc. for emission-free operation
- Usable in the widest variety of environments
- Hard-disk encryption of sensitive data and file encryption for storage and management
- Top quality protection against unauthorised access
- Secure IP-based VPN communication
Nowadays, radio communication takes place in an extremely broad frequency range and with differing reaches, operating modes and bandwidths. The more universally applicable a radio security solution is, the more efficient and cost-effective it will be to operate. However, there are scenarios in which simple operation under tough (front) conditions is required. Radio encryption platforms from Crypto AG provide the optimum solution for this and virtually all other conceivable scenarios.

**MultiCom Encryption Platform**
offers you enormous flexibility, which you can use for voice, data and messaging applications (e.g. SAMMS, HF Messenger) in military and civilian scenarios, for different frequency bands and for all common types of radios. The latest version can also be utilised in IP networks.

**Multilink Bulk Encryption**
is an extremely robust, five-channel encryption unit geared to EUROCOM interfaces for use even when transmission quality is greatly reduced.

**Crypto Field Terminal**
is a complete workstation with integrated modem as well as messaging and word processing software. As an all-in-one solution, it is ideal as a communication base for organisations that operate individually and autonomously.

**SECOS**
is a military COMSEC and TRANSEC security system developed in cooperation with Rohde & Schwarz for use in aircraft, ships, permanent stations and man packs. It supports voice, data and TDMA links.

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**Radio Security Solutions**

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<tr>
<th>Product</th>
<th>Description</th>
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<tr>
<td>Multilink Bulk Encryption HC-7550</td>
<td>Offers enormous flexibility for voice, data, and messaging applications (e.g., SAMMS, HF Messenger) in military and civilian scenarios.</td>
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<tr>
<td>Crypto Field Terminal HC-6830</td>
<td>A complete workstation with integrated modem and messaging software.</td>
</tr>
<tr>
<td>SECOS Airborne Radio</td>
<td>A military COMSEC and TRANSEC security system.</td>
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**Our Radio Highlight**

**MultiCom Radio Encryption HC-2650:**
the multi-talented platform

- Multiradio: connects to different radios and interfaces
- Multiband: all common frequency bands can be used
- Multiprotocol: compatible with military standards and protocols
- Multialgo: multiple algorithms can be loaded to ensure interoperability
- Multitraffic: full-duplex/half-duplex transmission, synchronous/asyncronous encryption
- Future-proof: can be upgraded to future network platforms
Communication by satellite is made possible worldwide today at low prices thanks to satellite systems like VSAT, Inmarsat/BGAN and Thuraya GSM/DSL/IP, which make available various access technologies and protocols (IP, ATM, FR, ISDN, PSTN, GSM). Satellites enable communication even in remote areas without adequate infrastructure. Crypto AG has a suitable encryption solution in its portfolio to fit whatever application is used.

**Deployable Secure Satellite Systems**

Preconfigured cases are packed with all individual components such as satellite terminal, encryption unit, terminal and accessories. They are largely pre-wired and ready-for-travel, so users can put them into operation quickly.

**1) Phone/Fax Systems**

BGAN telephony services can be used for voice and fax communication, just like in the traditional PSTN.

**2) Office Client Systems**

Suitable for IP-based applications, such as e-mail and file transfer via remote access to the corresponding IT infrastructure, as well as for real-time applications such as VoIP, FoIP or video. Inmarsat/BGAN and Thuraya DSL/IP are possible satellite communication systems in this context, but only BGAN supports real-time applications.

**3) Messaging Systems**

Peer messaging is also possible over phone channels or data service. Unlike e-mail, which runs over central servers, peer messaging requires no server but instead operates directly between sender and receiver. BGAN or Thuraya GSM would be possible satellite communication systems.
Crypto AG – To Remain Sovereign

Crypto AG is your ideal partner for the efficient and secure handling of information. As a legally and economically independent Swiss company, we are not subject to any export restrictions.

We have developed, manufactured and implemented custom security solutions for over 55 years. The package we offer features the latest technology solutions and comprehensive services. Throughout the entire lifetime of your system, we provide you with support services to guarantee autonomous operation and high availability whatever the user environment.

You too can rely on the expertise and capabilities of Crypto AG – just like our customers in over 150 countries.