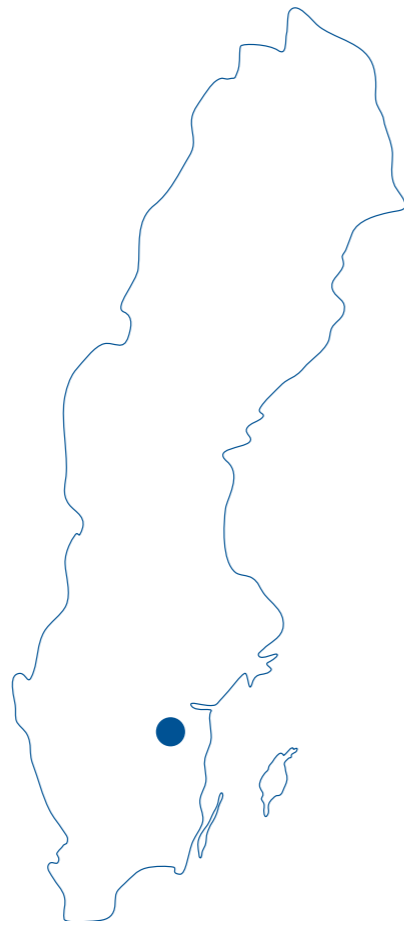




THE FASTEST GROWING DESIGN HOUSE IN EUROPE

**27m**

THE HEARTBEAT OF DIGITAL TV



“Renowned for  
designing highly  
flexible products”

## WELCOME TO 27M

27M is a market leading supplier of digital TV hardware and software for set-top boxes and integrated TVs. 27M offers complete and proven pan-European solutions with an award-winning combination of low price and high quality. Renowned for designing user friendly, highly flexible products for mass production, 27M is becoming an established partner-of-choice for manufacturers and consumer electronics companies looking for a complete hardware and software solution. With over 20 OEM designs and more than 2 million designed receivers across Europe, the 27M solutions are widely established.

As a Nokia spin-off, 27M has industrial experience and a solid knowledge in the digital TV field since the early 1990's. The 27M team has worked with well-established, internationally renowned customers in numerous locations around the world. The company has earned a reputation as being highly knowledgeable, flexible and efficient. 27M distinguishes itself from other players by assuming full responsibility for all aspects of a project from the development to the serviceability of a solution.

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“27M can integrate the platform into the manufacturer’s own mechanics”

## TURNKEY SOLUTIONS - DIGITAL VIDEO PRODUCTS

27M can deliver everything from customised to full-range terrestrial, satellite and cable turnkey solutions. The company can integrate the platform into the manufacturer’s own mechanics. Our turnkey products embrace the full range of digital TV receivers, from cost-optimised TV viewing boxes, through middleware-enabled operator boxes, to high-end products with IP connectivity, Digital Video Recording and Integrated Digital Television. 27M’s customers have full access to our highly developed support

infrastructure, providing support for the entire turnkey product range. All turnkey solutions are prepared for production and only minor modifications are needed to complete the set-top box design. The software is based on the 27M software stack, which is a scalable, modular solution that has been successfully deployed all over Europe. The 27M solutions support most European digital TV variations, consequently saving significant costs and radically reducing time to market.

### DTT TURNKEY SOLUTION

The highly cost-effective and award winning 27M DTT Turnkey solution can be delivered with versions supporting DTT Nordig, MHEG-5, 7-day Electronic Program Guide and TopUpTV support as well as Conax Conditional access system. Moreover, our solution comes complete with every component needed for consumer electronics manufacturers to realise ultimate time to market.

### DVB-S TURNKEY SOLUTION

For the DVB-S market, 27M has a solution based on the DTT design for Free-to-air reception from up to four different satellites. A reference platform using Conditional access requiring secure satellite communication is also available.

### DUAL VIEW RECEIVER

In the ongoing shutdown of analogue TV transmissions in Europe, the VCRs and DVD recorders prove to be useless. As a solution for this, 27M presents the Dual View platform, which in a very cost effective way allows for watching and recording or Picture-in-picture viewing of two channels. The Dual View platform supports both DTT and DVB-S. 27M

can offer two dual view turnkey solutions to its customers. The platform presents a cost reduced solution with picture-in-picture and only the basic features. The enhanced solution can include embedded CA or CI, USB 2.0 connection and Ethernet connection

### HIGH DEFINITION TELEVISION

The HD family is a turnkey HDTV STB solution aimed at cost and quality conscious customers. The solution allows consumers to take full advantage of the high resolutions and screen sizes of the latest LCD TVs, Plasma TVs and projectors. All HDTV platforms are fitted with Common Interface, embedded Conax, Irdeto or Viaccess, and can be adapted to nearly any other Conditional access system upon request.

### INTEGRATED DIGITAL TELEVISION

27M has two solutions for IDTV, a low cost plug in card for slave reception of DTT, and a complete digital master solution with a seamless experience for the user. The digital master solution is aimed at HD-ready LCD-TVs and Plasma screens.



# THE 27M SOFTWARE STACK

Time-to-market and proven product development is an essential requirement on the digital TV market. Proven and reliable design and quality processes are therefore of utmost importance. For customers with their own hardware design capabilities, 27M offers a complete, modular and portable software stack. The 27M pan-European Software Stack supports most European digital TV variations, thereby saving significant costs and radically reducing time to market. Our Software Stack is widely deployed throughout the European

environment. Moreover, it has been used to provide reference and demonstration platforms in digital satellite, terrestrial and cable environments. The 27M Software Stack has an integrated DVB middleware solution that enables CE manufacturers to deploy a single DVB-T, DVB-S or DVB-C platform across Europe. The stack includes SI/PSI engine, channel table, service selection, tuning, EIT cache, EPG and user Interface toolkit with various user interface components.

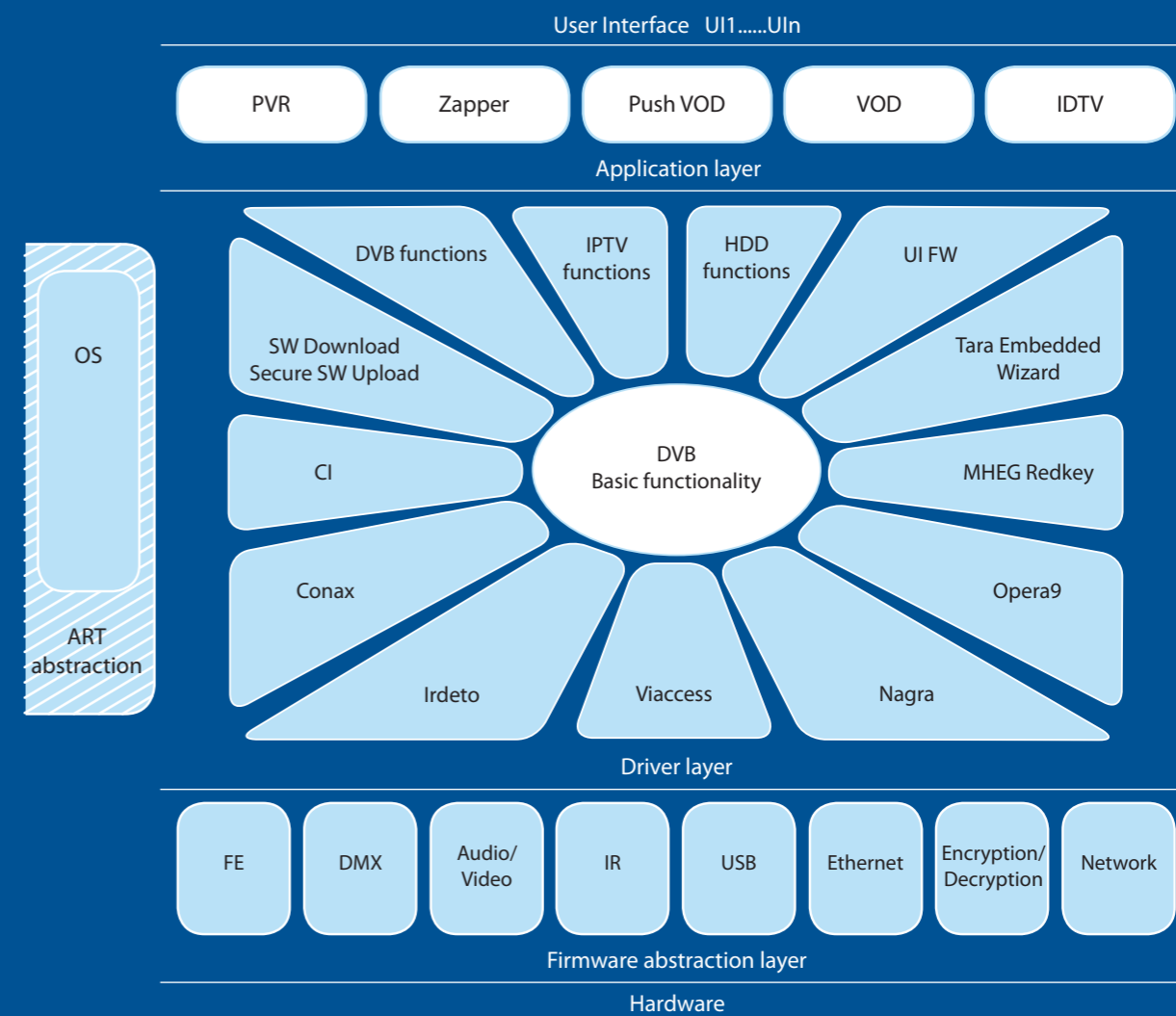


## THE 27M SOFTWARE STACK

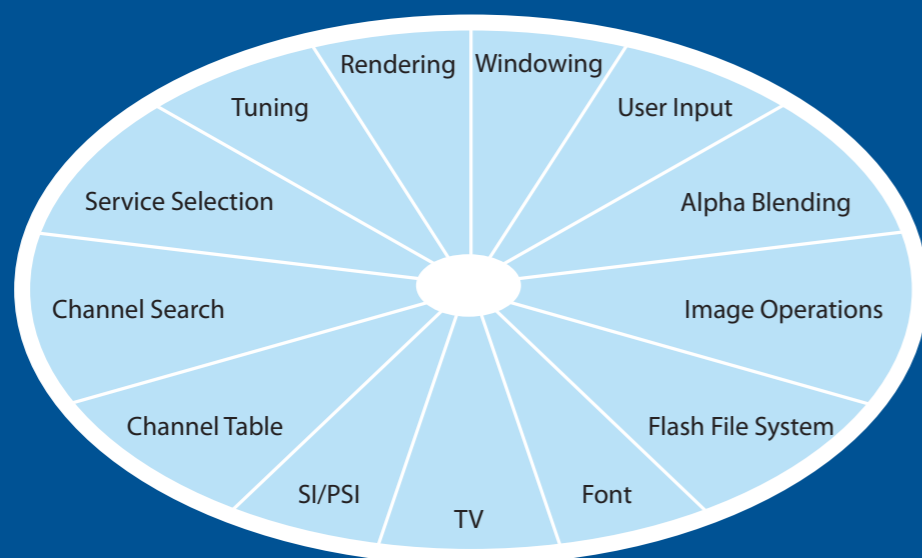
The 27M Software stack has full support for both SD and HD TV as well as terrestrial, satellite, cable and IP-based transmissions. It has embedded support for all major CA-systems and fully customizable user interface. The 27M Stack is designed to be easy to port to new hardware solutions.

### General Features:

- Full support for terrestrial, satellite, cable and IP-based transmissions.
- Full support for both SD and HD services .
- Unicode multi-language support.
- Multi-day guides.
- Easy-to-use First Time Installation.
- PVR with trick modes and timeshift.
- Subtitling via both Teletext and DVB Subtitling.
- Full support for multiple audio and subtitling tracks.
- DVB parental control.
- Customizable UI.
- Embedded support for all major CA-systems.
- Support for Common Interface.



## DVB Basic functionality



27M offers a complete, modular and portable DVB functionality including SI/PSI engine, TV, channel table, service selection, tuning, EIT cache and EPG.

## A COMPLETE SOLUTION

27M provides a complete DVB middleware solution including:

- Front-end Modules (Terrestrial, Satellite, Cable, IP Channel Search).
- Channel Table, Channel Lists, Favourite Lists.
- Service Selection
- SI/PSI Module.
- TV (HDMI, DVI, SCART, Component, S/PDIF).
- Teletext (subtitling and full-screen).
- DVB Subtitling.
- Event Information Cache (P/F and Schedule).
- Software Download (DVB-SSU, simple and advanced profile).
- Flash File System.
- PVR
- Recording Timer.
- MHEG Engine (S&T).
- Common Interface Stack.
- Embedded Conditional Access Solutions (All major).
- Network (Ethernet, USB, IP over DVB).

"The 27M SW stack has a fully customised User Interface called the branding block."



## FULLY CUSTOMISED USER INTERFACE

- The 27M SW stack has a fully customised User Interface called the branding block.
- The branding block is based on the 27M menu structure and customer styleguide, however the Branding Block is a separate data block that includes all the branding information.
- The branding (UI look and feel) can be changed without affecting the behaviour of the software.
- Branding Block Contents ; Colour Palette, Pictures, Menu BG, Logo, Antenna, Separator, Buttons etc.
- UI customization can be done very fast (2-3 manweeks).
- The customization has full support for multiple audio and subtitling tracks, unicode multi-language support, subtitling via both Teletext and DVB Subtitling.

## MHEG FOR INTERACTIVE SERVICES

- The 27M software stack has a complete standard for interactive TV that provides services like News, Weather and Sports results.

# CUSTOMISED SOLUTIONS - DIGITAL VIDEO BROADCAST

27M offers a complete set of first-rate customised solutions to its customers. We have developed a wide range of digital TV products that can be adapted both on hardware as well as content, delivery and embedded software.

Specific areas of expertise include:

- Common Interface software stack
- User interfaces and service navigation
- Cost-optimized set-top-box designs
- Conditional access implementations
- Channel search
- IP over DVB adaptations
- DVB Subtitling
- TV over IP
- Middleware porting
- Teletext
- Efficient SI/ PSI filtering
- Efficient SI/ PSI filtering

## EMBEDDED SYSTEMS EXPERIENCE

27M has acquired many years of embedded systems experience, dating back to the early 1990's. Contributions from the staff of 27M have been accepted for the Linux kernel, as well as for the X Window System and various other open source applications.

Our diverse skills include:

- Porting of third party middleware such as OpenTV, MediaHighway, and MHP
- Processors, such as MIPS, PPC, ST20, ARM, Intel x86, 8051, Motorola 68k and many more
- NucleusPLUS, eCos, OS20, pSOS, VxWorks, UNIX, Windows, MS-DOS
- Component models and User Interface frameworks
- TCP/IP networking - IPv4 and IPv6
- Computer security and networking such as TLS/SSL
- Implementation in languages such as C, C++, Java, Mathematica, Python, Perl, Tcl/Tk
- Linux driver programming for digital TV, video and graphics
- Porting RTOSes to run on new hardware
- Inter-Process communication
- Multi-threaded programming

## CUSTOMISED HARDWARE SOLUTIONS

27M has full hardware design capabilities covering system design, component selection, schematics and CAD. We can develop a complete, customised design based on your requirements and optimised for your mechanical and manufacturing needs. With our experience and expertise, we can help you to reduce lead times and put a cost effective product on the market fast. 27M has standard definition and high definition DTT, DVB-S and DVB-C receivers, as well as compact IDTV designs and IP over DVB-S with GPRS/ EDGE/ ISDN or an analog modem as return channel.



**“27M has full hardware design capabilities”**

## CUSTOMISED SOFTWARE SOLUTIONS

27M has a broad range of expert services and complete reference designs that can be licensed to customers. These can readily be customised to suit individual clients needs, ensuring fast and cost effective solutions and a reduced time to market.

### CONDITIONAL ACCESS IMPLEMENTATION

27M can easily and quickly integrate third party software products such as CAS. The company provides porting layers and complete integration of Conax, NDS, Irdeto, Nagra, Viaccess and Common Interface. Close co-operation with the Conditional access vendors warrants smooth integration and optimum time to market.

- Full-systems architecture, design and implementation.
- High-performing and effective software solutions in embedded and real-time environments.
- Ready-made flexible licensable software for DVB applications, with options to customise for specific needs to meet performance and cost targets.
- Expert work, in both established and emerging technologies, such as Linux, IP-TV, IDTV, PVR and MPEG-4, adapted to industry standards and needs.



"27M has been selected by many well known consumer electronics companies"

## CUSTOMER SUCCESS STORIES

27M has been selected by many well known consumer electronics companies and operators to deliver technology for their products and networks. Moreover, 27M has a long and solid co-operation and experience with a large number of silicon manufacturers.

Among these are:

- NEC Electronics – Full turnkey solutions for DVB-T and S available for the EMMA-family; satellite modem, CI-stack, IDTV products etc
- ATi Technologies - Full turnkey solutions for HDTV for DVB-T and S available for the XILLEON-family; CI stack, IDTV products etc
- Intel/Zarlink Semiconductor –Silicon tuners for DVB-S, Demod implementations for DVB-T
- ASTRA – 27M has developed the Satellite Modem, hardware & software for IP over DVB-S
- OTRUM – 27M developed the IDTV module, hardware & software, for Digital TV hotel TV

## Scandinavia's first environment friendly STB

27M has developed a new STB that has a minimal impact on the environment. With conscious design, careful selection of mechanical material as well as a very low stand-by power consumption, this is the first environment friendly STB on the Scandinavian market.

## 27M PARTNERS



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