ST7LNB DiSEqC™ microcontroller family
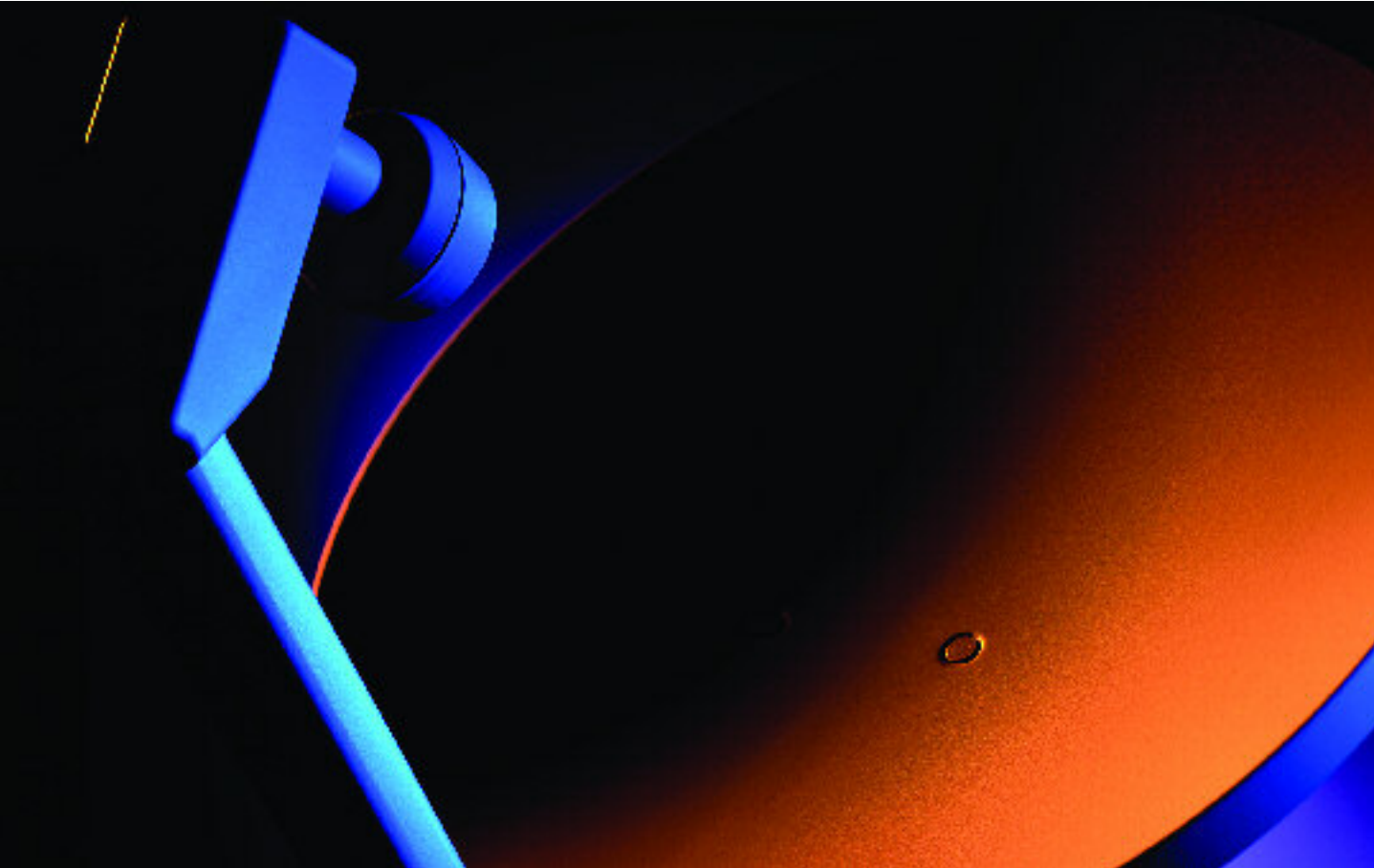
Specific for terrestrial satellite dish LNB heads and switchers

January 2006

STMicroelectronics' ST7LNBx series devices are application-specific standard microcontrollers developed for terrestrial satellite equipment using the DiSEqC (digital satellite equipment control) communication protocol.

Defined by the EUTELSAT (European telecommunication satellite) 'Slave Microcontroller' Specification 1.0, the ST7LNBx series is pre-programmed to decode DiSEqC signals from/to the TV set-top box.

Standard versions offer default software configuration values while customer dedicated versions are developed on demand and are customized with specific customer option bytes.

Applications

- DiSEqC LNB heads
  - Monoblock architecture in single homes (ST7LNB0)
  - Channel router (SatCR) architecture in collective homes (ST7LNB1)

- DiSEqC switchers
  - Switcher box architecture in collective homes (ST7LNB0 and ST7LNB1)
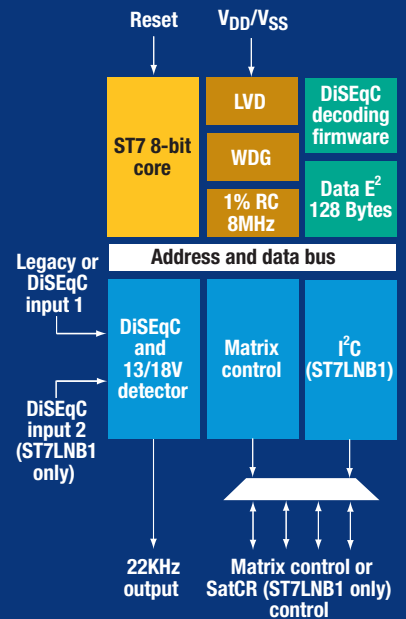
## Typical LNB monoblock heads schematic
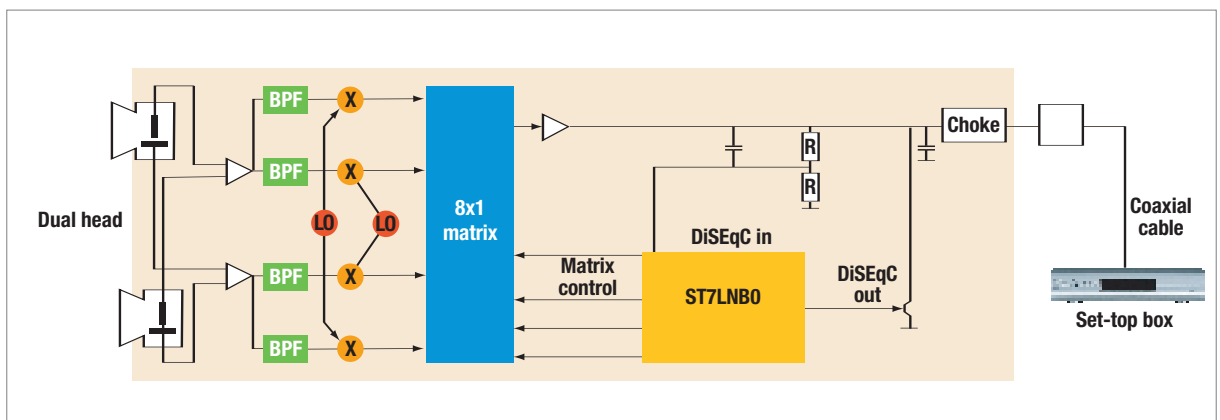
ST7LNB0 is perfectly suited for applications with multi-LNB head outputs, typically found in single home environments.

ST7LNB family

Features and benefits

Features	Benefis
Fully-compliant with DiSEqC slave microcontroller specification version 1.0	Suitable for all applications requiring DiSEqC communication protocol decoding
Supports all DiSEqC versions (toneburst, 1.x protocol, ready for 2.1 bidirectional communication)	Design upgradability and flexibility for future requirements
Excellent analog-to-digital cell performance	Direct 22KHz signal input with reduced number of external components
Superior accuracy (1%) of embedded clock source	High accuracy of data decoding
20 years data retention at 55°C	Perfectly suited to satellite digital equipment environment
EEPROM programming service	Flexibility and ability to customize software to specific application requirements and configurations

Typical SaTCR channel router schematic
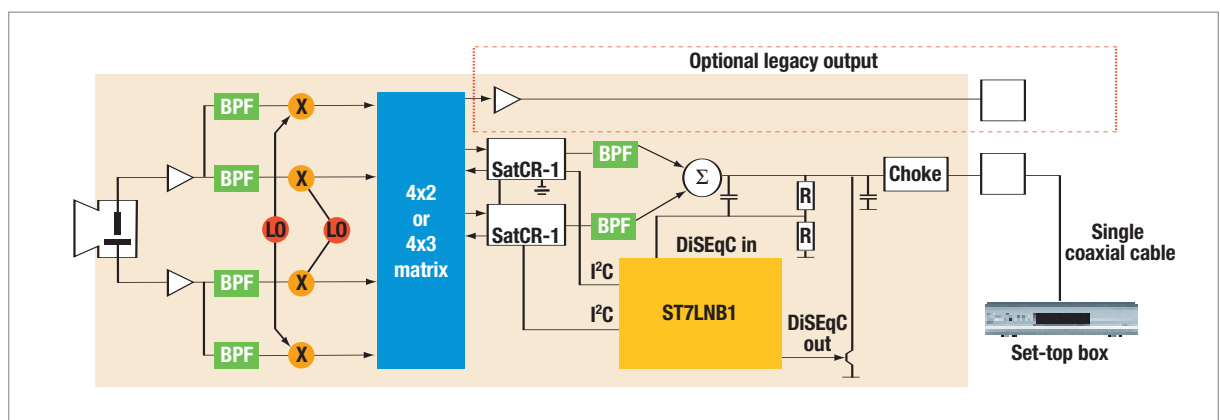
ST7LNB1 is perfectly suited to control the ST satellite channel router, SaTCR, offering a single cable solution and excellent cost-saving advantages in multi receivers for single or collective home environments.

Device summary

| Part number	Program memory type FAST ROM	Prog. (bytes)	RAM (bytes)	Data E²PROM (bytes)	I/Os (high current)	Package	Supply voltage	Special features
ST7LNB0V2Y0	•	1.5K	128	128	13 (6)	SO16/QFN20	4.5 to 5.5V	DiSEqC 2.1 interface, 22KHz tone detector
ST7LNB1Y0	•	1.5K	128	128	13 (6)	SO16/QFN20	4.5 to 5.5V	DiSEqC interface, SatCR control

Package under development

Tools and collateral support

- Programming and evaluation/test board
- Demo board for ST7LNB1 and SaTCR-1
- Software application engineering support on demand

The programming and evaluation/test board from ST provides a user-friendly interface to program EEPROM data and to test the ST7LNBx microcontrollers on socket, or remotely using a coaxial cable. The board can be connected to the serial port of a PC using either a Windows HyperTerminal or a dedicated graphical interface, on Windows 2000 or XP, and can be used to send DiSEqC commands.

The SaTCR-1 and ST7LNB1 demonstration board features two channel router devices and four RF inputs. It is simple to use and supports the development of the ST7LNB1 platform.
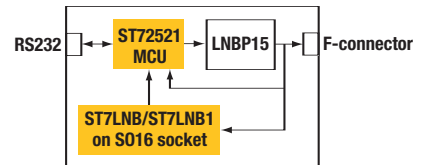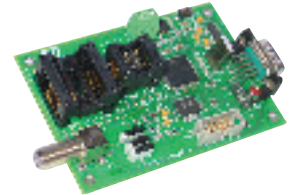
Ordering information

Standard products offer default configuration values (slave address, high/low frequencies, output configurations, etc.) detailed in the datasheet under EEPROM parameters. Commercial products available are:

- ST7LNB0V2Y0M6 (S016 tube packing) and ST7LNB0V2Y0M6TR (S016 Tape & Reel packing)
- ST7LNB1Y0M6 (S016 tube packing) and ST7LNB1Y0M6TR (S016 Tape & Reel packing)

Default EEPROM values can also be reprogrammed on standard products using the ST7LNBx programming and test board. Samples are available only for standard products in tube packing.

Customer dedicated products can be created if standard product default values do not fit a specific application architecture. Custom EEPROM data is programmed during the production cycle.

For selected STMicroelectronics sales offices fax:

France +33 1 55489569; Germany +49 89 4605454; Italy +39 02 8250449; Japan +81 3 57838216; Singapore +65 6481 5124; Sweden +46 8 58774411; Switzerland +41 22 9292900; United Kingdom and Eire +44 1628 890391; USA +1 781 861 2678

Full product information at www.st.com

Order code: BRST7LNB0106

www.BDTIC.com/ST