

CD21 and CD21 Rev3 for Calypso e-ticketing



STMicroelectronics

Contactless smartcard ICs for Calypso mass transit

STMicroelectronics, active in the Calypso Networks Association for more than 10 years with the CD21, proposes a complete range of secure MCU-based contactless smartcard products compliant with the Calypso specification.

ST is now introducing the new CD21 Rev3 product range, matching the latest Calypso Revision 3 specification and based on the latest highly-secure MCU IC technology.

ST23YR highly-secure MCU

- 4-, 8- or 18-Kbytes of EEPROM
- CPU clock frequency up to 29 MHz
- 2.7 to 5.5 V supply
- Dual or contactless only configuration
- Anti-collision and 16-bit CRC features
- ISO 14443B (parts 1-4)
- Innovatron contactless protocol
- ISO 7816-3 T=0
- 30-year data retention at 25 °C
- 500 000 minimum E/W cycles at 25 °C

ST23YR MCU security features

- Hardware enhanced security DES accelerator
- Common Criteria EAL5+
- EMVCo
- Active shield
- Monitoring of environmental parameters
- Protection mechanism against faults

CD21 and CD21 Rev 3 comply with

- Calypso Rev 1
- Calypso Rev 2
- Calypso Rev 3
- ISO 14443B (parts 1 to 4)
- ISO 7816 (parts 1 to 4)
- ENV 1545
- Security access module (SAM S1)

Applications

- Automatic fare collection
- Public transportation access
- Access control
- Ticketing payment
- City services and events
- Leisure parks and stadiums
- Corporate cards, student cards

Product table

Part number	EEPROM (Kbytes)	Calypso Rev 3	Calypso Rev 2	CD Light compatible	CD97-BX compatible	CD97 compatible	Chip hardware security
CD21-2K ST19WR02/QQI	2		•	•	•	•	EMVCo
CD21-8K ST19WR08/QQH	8		•	•	•	•	CC-EAL5+ EMVCo
CD21-Rev3-4K ST23YR04/QQK	4	•	•	•	•	•	CC-EAL5+ EMVCo
CD21-Rev3-8K ST23YR08/QQK	8	•	•	•	•	•	CC-EAL5+ EMVCo
CD21-Rev3-18K ST23YR18/QQK	18	•	•	•	•	•	CC-EAL5+ EMVCo



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