ARRIS

Touchstone®
DOCSIS® 3.0 8x4
Ultra-High Speed
Telephony Modem

TM822

Configuration

- DOCSIS 3.0 certified
- EuroDOCSIS 3.0 compliant
- PacketCable ® 1.0/1.5 compliant and EuroPacketCable 1.0/1.5 compliant
- Upgradeable to PacketCable ® 2.0
- Dual-mode capable device for maximum flexibility across DOCSIS and EuroDOCSIS based networks
- Flexible 8x4 downstream/upstream channel-bonding with superior throughput
- Backward compatible with DOCSIS 1.0, 1.1, and 2.0
- Up to two lines of carrier-grade VoIP
- Multiple Protocol Support: PacketCable (NCS) or Session Initiation Protocol (SIP)
- IPv4/IPv6 modes for DOCSIS CM
- 10/100/1000 Base-T Ethernet
- 6, 8, 12, 18, and 24 hour battery options available (TM822G only)
- Simplified interoperability through PacketACE™ config file editor

Applications

The Touchstone DOCSIS 3.0 8x4 Embedded Multimedia Terminal Adaptor (EMTA) TM822 delivers two lines of primary line Voice over IP (VoIP), ultra-high speed data access, and multiple battery pack options to support telephony service during power outages (TM822G only). Designed to support the services desired most by advanced users, the TM822 enables the home or small business user to address productivity needs with the speed and performance found only in the 8x4 bonded channel cable environment, along with industry-leading ARRIS voice and battery back-up features.   With the TM822, cable operators can offer data services at speeds greater than 300Mbps to their subscribers to compete against VDSL and fiber to the home competitive offerings.

Performance and Features

- Toll grade voice performance equal to the industry leading TM602/TM722 family of products
- Two independent 96MHz RF tuners to receive downstream channels to 1GHz
- Dual mode support (TM822S only) for use on Annex A or Annex B networks
- Loop current, loop voltage, and ringing waveform configuration options
- Loop Diagnostics for remote testing and troubleshooting of in-house wiring
- Advanced diagnostic tools, including, Voice Quality Metrics for last fifty calls
- Multi-colored LEDs for troubleshooting during install or by customer service
- Auto-adapting FSK/CAS tone levels, dynamic jitter buffers, and G.168 echo cancellation
- Configurable battery management and reporting for customized operation
- Boot from battery feature allows TM822G to initialize without AC Power
- Simple to install, consumer replaceable, lithium-ion batteries (TM822G only)
- Single, easy access battery slot (TM822G only)

Product Flyer

TM822A Back view

TM822G Back view

TM822S Back view

www.arrisi.com

Find more information about the Touchstone TM822 DOCSIS 3.0 Telephony Modem.

- **Product Specifications—**
  - Technical Specifications Touchstone DOCSIS 3.0 Telephony Modem TM822G (Publication Code: TM822G_TS.pdf)
  - Technical Specifications Touchstone DOCSIS 3.0 Telephony Modem TM822A/S (Publication Code: TM822AS_TS.pdf)

Customer Care

Contact Customer Care for product information and sales

- United States: 866-36-ARRIS
- International: +1-678-473-2000

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RoHS Compliant
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Touchstone® DOCSIS® 3.0 8x4 Telephony Modem TM822A/S

Specifications

Physical

Operating Temperature °F (°C)	32 to 122 (0 to 50)
Operating Relative Humidity (Min-Max)	5-95% (non-condensing)
Storage Temperature °F (°C)	-40 to 158 (-40 to 70)
Dimensions (H x W x D) in. (cm)	7.3 x 1.7 x 6.2 (18.5 x 4.3 x 15.8) - excluding F-connector
Weight lbs (kg)	1.0 (0.45)
Diagnostic LEDs	Power, DS, US, Online, Link, Tel 1, Tel 2

Interfaces

RF Interface	External 75 ohm 'F' type connector
Data Interface	10/100/1000 Base-T Ethernet RJ-45
Telephony Interface	2 lines; RJ-11
Input Voltage (nominal)	115-240 VAC 50/60 Hz
Power Switch Equipped	On TM822S model only
Power Consumption (W)	5.5 (idle)

Telephony

Supervisory Voltage	48 V_{DC} nominal
Maximum Loop Length to CPE	1000 ft (305M) of 26 AWG (0.4 mm) wire
Ringing Load Capacity	10 REN total; 5 per line
Provisionable High Loop Current Mode	Yes
Telcordia™ GR 1089 (Lightning and Power Surge) Tested	Yes
Programmable Interface for Worldwide Applications	Yes

RF Downstream

Frequency Range (MHz)	108-1002 (edge-to-edge)
Bonded Channels	up to 8
Number of Tuners	2
Capture Bandwidth (MHz)	96 (per tuner, 192 MHz total)
Modulation (QAM)	64 or 256
Data Rate (Mbps, Theoretical)	up to 343 *Note: Maximum raw DOCSIS rate; actual data throughput is less due to overhead, configuration, and RF conditions*
RF Input Sensitivity Level (dBmV)	-15 to +15
Carrier Bandwidth	6 MHz (DOCSIS mode) or 8 MHz (EuroDOCSIS mode)
Embedded MoCA® Immunity Filter	Yes

Technical Specification

Specifications Continued

RF Upstream

Frequency Range (MHz)	5-42 (DOCSIS mode) or 5-65 (EuroDOCSIS mode)
Bonded Channels	up to 4
Modulation	QPSK, 8QAM, 16QAM, 32QAM, 64QAM, 128QAM (S-CDMA only)
Modulation Bandwidth (kHz)	200, 400, 800, 1600, 3200, 6400 (TDMA) 1600, 3200, 6400 (S-CDMA)
Data Rate (Mbps, Theoretical)	up to 122 Note: Maximum raw DOCSIS rate; actual data throughput is less due to overhead, configuration, and RF conditions
RF Output Level (dBmV – one channel)	
TDMA:	+17 to 61 (QPSK); +17 to 58 (8QAM, 16QAM); +17 to 57 (32QAM, 64QAM) Note: A-TDMA max output power reduced 3dB when transmitting 2 channels and 6dB when transmitting 3 or 4 channels.
S-CDMA:	+17 to +56 (all modulations) Note: S-CDMA max output reduced 3dB when transmitting 2 or more channels.
Automatic Level Adjust	Yes
Frequency Stability (kHz)	±5
Output Impedance (Ohms)	75

Standards

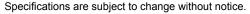|	
DOCSIS 3.0 / EuroDOCSIS 3.0	RoHS, WEEE
PacketCable 1.0 and 1.5	IEEE 802.3, IEEE 802.3ab
UL® 60950	RFC3261 SIP: Session Initiation Protocol
FCC Part 15 Class B	Codec: G.711, 64 kbps, μ-law and A-law encoded speech
CE	Enhanced codec support (G.726, G.728, G.729E)
CB	T.38 Fax Relay

Ordering Information

Part Number	Description
799090	Touchstone TM822A/NA, DOCSIS 3.0 / PacketCable 1.5 compliant E-MTA with integrated 115-240 VAC, 50/60 HZ power supply. Includes NEMA 1-15 power cord, Cat-5E Ethernet cable, and End User License.
799091	Touchstone TM822A/CE, DOCSIS 3.0 / PacketCable 1.5 compliant E-MTA with integrated 115-240 VAC, 50/60 HZ power supply. Includes CEE 7/16 power cord, Cat-5E Ethernet cable, and End User License.
799092	Touchstone TM822S/CE, Dual Mode (DOCSIS 3.0 & EuroDOCSIS 3.0) / PacketCable 1.5 compliant E-MTA with integrated 115-240 VAC, 50/60 HZ power supply. Includes CEE 7/16 power cord, Cat-5E Ethernet cable, and End User License.

Specifications are subject to change without notice.

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