



ARRIS Touchstone®

DOCSIS® 3.0 Telephony Modem TM702G



With millions of Touchstone DOCSIS 2.0 Telephony Modems shipped, ARRIS is pleased to release our DOCSIS 3.0 next generation residential product family. The Touchstone TM702G is a DOCSIS 3.0 Embedded Media Terminal Adaptor (E-MTA) that delivers two lines of primary line Voice over IP (VoIP), ultra-high speed data access, and two battery pack options to support telephony service during power outages. With DOCSIS 3.0 channel bonding, cable operators can offer data services at speeds greater than 160 Mbps to their subscribers to compete against VDSL and Fiber to the home (FTTH) threats. The TM702G is backwards compatible with legacy DOCSIS 1.0, 1.1, and 2.0 cable equipment and can be deployed without service interruption.

Configuration

- CableLabs® DOCSIS 3.0 certified
- PacketCable™ 1.5 compliant
- Flexible 4x4 upstream/downstream channel-bonding with superior throughput
- 10/100/1000 Base-T Ethernet interface
- IPv4 or IPv6 addressing modes for DOCSIS CM layer
- Up to two lines of carrier-grade VoIP
- Simplified interoperability through PacketACE™ configuration file editor
- Multiple Protocol Support: PacketCable (NCS) and Session Initiation Protocol (SIP)

Performance

- Line card performance equal to the industry leading ARRIS TM602 family of products
- Configurable options for loop current, loop voltage management, and ringing waveform
- Loop Diagnostics for remote testing and troubleshooting of in-house wiring
- Easy troubleshooting with Call Quality Metrics for last ten calls
- Toll grade, compression, and High Fidelity CODECs supported (High Fidelity supported in future firmware upgrade)
- Auto-adapting FSK/CAS tone levels, dynamic jitter buffers, G.168 echo cancellation
- 1 GHz downstream RF tuner with up to 100 MHz capture bandwidth

Leadership in Battery Technology

- Single, easy access battery slot
- Simple to install, consumer replaceable, lithium-ion batteries for up to 4 or 8 hours of battery backup
- Firmware configurable battery management and reporting for customized operation
- Boot from Battery feature allows modem to boot without AC Power

Specifications

Physical:	Operating Temperature °F (°C)	41 to 104 (5 to 40)
	Operating Relative Humidity (Min-Max)	5-85%(Non condensing)
	Storage Temperature °F (°C)	-40 to 158 (-40 to 70)
	Color	Dark gray
	Dimensions (HxWxD) in. (cm)	8.6 x 2.1 x 7.1 (21.8 x 5.3 x 18.0) - excluding F-connector
	Weight lbs (kg)	1.5 (0.68)
	Battery: 4 Hour Back-up Option (-4)	
	Backup Capacity	Lithium-ion 2.4 AH
	Weight lbs (kg)	1.75 (0.79)
	Battery: 8 Hour Back-up Option (-8)	
	Backup Capacity	Lithium-ion 4.4 AH
	Weight lbs (kg)	2.0 (0.91)
	Battery Storage Temperature °F (°C)	-4 to 140 (-20 to 60)
Note: Storage above 77°F (25°C) will significantly reduce life of the battery and is not recommended.		
Telemetry:	AC Fail, Battery Low, Battery Missing, Replace Battery	
Diagnostic LEDs:	Power, DS, US, Online, Link, Telephone 1, Telephone 2, Battery	
Interfaces:	RF Interface	External F-connector
	Data Interfaces (bridged)	10/100/1000 Base-T Ethernet RJ-45 High Speed (480Mb/S) USB 2.0
	Telephony Interface	2 lines; RJ-14 ("Line 1/2"), RJ-11 ("Line 2")
	Input Voltage (nominal)	115-240 V _{AC} 50/60 Hz
	Power Consumption (W)	7 (idle) 10 (max.)
	Telephony:	Supervisory Voltage
Maximum Loop Length to CPE		1500 ft (457m) 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)
	Bonded Channels	up to 4
	Capture Bandwidth (MHz)	96 (typical)
	Modulation (QAM)	64 or 256
	Data Rate (Mbps)	up to 161
	RF Input Sensitivity Level (dBmV)	-15 to +15
	Carrier Bandwidth (MHz)	6

Specifications

RF Upstream:

Frequency Range (MHz)	5-42
Bonded Channels	up to 4
Modulation	QPSK, 8-QAM, 16-QAM, 32-QAM, 64-QAM & 128-QAM (S-CDMA only)
Data Rate (Mbps) (Max.)	up to 122
RF Output Level (dBmV – one channel)	
RF Output Level (dBmV – one channel)	
A-TDMA	+17 to 57 dBmV (32 QAM, 64 QAM) +17 to 58 dBmV (8 QAM, 16 QAM) +17 to 61 dBmV (QPSK)
	max output power reduced 3dB when transmitting two channels and 6dB when transmitting 3 or 4 channels.
S-CDMA	+17 to +56 dBmV (all modulations)
	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
 PacketCable 1.0 and 1.5
 UL® 60950 FCC Part 15 Class B, CE, CB
 RoHS, WEEE
 WHQL, USB-IF, IEEE 802.3, IEEE 802.3ab
 RFC3261 SIP: Session Initiation Protocol
 CODEC: G.711, 64 kbps, μ-law and A-law encoded speech
 Enhanced cODEC support (G.726, G.728, G.729E)
 T.38 Fax Relay

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Ordering Information

Part #	Description
722029	Touchstone TM702G/NA-0 DOCSIS 3.0 / PacketCable 1.5 complaint E-MTA with integrated 115-240 V _{AC} , 50/60 HZ power supply with 6 foot NEMA 1-15 power cord. Battery NOT included
722030	Touchstone TM702G/NA-4 DOCSIS 3.0 / PacketCable 1.5 complaint E-MTA with 6 foot NEMA 1-15 power cord. Includes 1, 2-cell, 2.4 AH, Li-Ion Battery Pack for up to 4 hours of battery back-up
722031	Touchstone TM702G/NA-8 DOCSIS 3.0 / PacketCable 1.5 complaint E-MTA with 6 foot NEMA 1-15 power cord. Includes 1, 4-cell, 4.4 AH, Li-Ion Battery Pack for up to 8 hours of battery back-up
722032	Touchstone TM702G/CE-0 DOCSIS 3.0 / PacketCable 1.5 complaint E-MTA with integrated 115-240 V _{AC} , 50/60 HZ power supply with 6 foot CEE 7/16 Euro power cord. Battery NOT included
722033	Touchstone TM702G/CE-4 DOCSIS 3.0 / PacketCable 1.5 complaint E-MTA with 6 foot NEMA 1-15 CEE 7/16 Euro power cord. Includes 1, 2-cell, 2.4 AH, Li-Ion Battery Pack for up to 4 hours of battery back-up
722034	Touchstone TM702G/CE-8 DOCSIS 3.0 / PacketCable 1.5 complaint E-MTA with 6 foot CEE 7/16 Euro power cord. Includes 1, 4-cell, 4.4 AH, Li-Ion Battery Pack for up to 8 hours of battery back-up
721944	One 2-Cell, 2.4 AH, Li-Ion Battery Pack for TM602/TM702
722841	One 4-Cell, 4.4 AH, Li-Ion Battery Pack for TM602/TM702

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