



## Touchstone®

### DOCSIS® 3.0 Telephony Modem TM702G



#### 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)

#### Applications

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.

#### 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

# ARRIS Touchstone® DOCSIS® 3.0 Telephony Modem TM702G

## Specifications

<b>Physical:</b>	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	
<b>Interfaces:</b>	RF Interface.....	External 'F' type 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 VAC 50/60 Hz
	Power Consumption (W) .....	.7 (idle), 10 (max.)
<b>Telephony</b>	Supervisory Voltage .....	48 V dc nominal
	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
	<b>RF Downstream:</b>	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.....	.6 MHz	
<b>RF Upstream:</b>	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)	
	A-TDMA .....	+17 to 57 dBmV (32 QAM, 64 QAM), +17 to 58 dBmV (8 QAM, 16 QAM), +17 to 61 dBmV (QPSK)
	S-CDMA .....	+17 to +56 dBmV (all modulations)
	A-TDMA max output power reduced 3dB when transmitting two channels and 6dB when transmitting 3 or 4 channels.	
	S-CDMA output reduced 3dB when transmitting 2 or more channels.	
	Automatic Level Adjust .....	Yes
Frequency Stability (kHz) .....	±5	
Output Impedance (Ohms) .....	75	
<b>Standards</b>	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	

## Ordering Information

Part #	Description
722029	Touchstone TM702G/NA-0 DOCSIS 3.0 / PacketCable 1.5 complaint E-MTA with integrated 115-240 VAC, 50/60 HZ power supply with 6 foot NEMA 1-15 power cord. <b>Battery NOT included</b>
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 VAC, 50/60 HZ power supply with 6 foot CEE 7/16 Euro power cord. <b>Battery NOT included</b>
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 Specifications

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