



## Touchstone® TM722A

### DOCSIS® 3.0 Telephony Modem



#### Configuration

- DOCSIS 3.0 compliant
- PacketCable® 1.0 and 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
- USB 2.0 interface
- Up to two lines of carrier-grade VoIP
- Simplified interoperability through PacketACE™ configuration file editor
- Multiple Protocol Support: PacketCable (NCS) or Session Initiation Protocol (SIP)

#### Applications

With millions of Touchstone Telephony Modems shipped, ARRIS is pleased to release our DOCSIS 3.0 next generation residential product family. The Touchstone TM722A DOCSIS 3.0 Embedded Multimedia Terminal Adaptor (EMTA) that delivers two lines of primary line Voice over IP (VoIP) and ultra-high speed data access. 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 threats. The TM722A is backwards compatible with legacy DOCSIS 1.0, 1.1, and 2.0 cable equipment and can be deployed without service interruption.

#### Performance

- Voice performance equal to the industry leading TM602 family of products
- 1 GHz downstream RF tuner with up to 100 MHz capture bandwidth
- Configurable options for loop current, loop voltage management, and ringing waveform
- Loop Diagnostics for remote testing and troubleshooting of in-house wiring
- Advance Diagnostics for easy troubleshooting - Call Quality Metrics for last fifty (50) calls
- Multi-colored LEDs for rapid troubleshooting at installation or by phone with customer service
- Toll grade voice quality
- Auto-adapting FSK/CAS tone levels, dynamic jitter buffers, and G.168 echo cancellation
- High Fidelity CODECs supported in future firmware upgrade(s)

# ARRIS Touchstone DOCSIS 3.0 Telephony Modem TM722A

## 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 (HxWxD) in. (cm)	20.6 x 4.4 x 17.6 (8.1 x 1.7 x 6.9) - excluding F-connector
Weight lbs (kg)	1.4 (0.64)
Diagnostic LEDs	Power, DS, US, Online, Link, Tel 1, Tel 2

### Interfaces

RF Interface	External 'F' type connector
Data Interfaces (bridged)	10/100/1000 Base-T Ethernet RJ-45, High Speed (480Mbps) 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.)

### Telephony

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

### RF Downstream

Frequency Range (MHz)	108-1002
Bonded Channels	up to 4
Capture Bandwidth (MHz)	96 (typical)
Modulation (QAM)	64 or 256
Data Rate (Mbps)	up to 160
RF Input Sensitivity Level (dBmV)	-15 to +15
Carrier Bandwidth	6 MHz

### 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)	
A-TDMA	+17 to 57 dBmV (32 QAM, 64 QAM); +17 to 58 dBmV (8 QAM, 16 QAM); +17 to 61 dBmV (QPSK) <i>Note: A-TDMA max output power reduced 3dB when transmitting two channels and 6dB when transmitting 3 or 4 channels.</i>
S-CDMA	+17 to +56 dBmV (all modulations) <i>Note: S-CDMA max output reduced 3dB when transmitting 2 or more channels.</i>
Automatic Level Adjust	Yes
Frequency Stability (kHz)	±5
Output Impedance (Ohms)	75

### Standards

DOCSIS 3.0	IEEE 802.3, IEEE 802.3ab
PacketCable 1.0 and 1.5	WHQL, USB-IF
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, CB	Enhanced codec support (G.726, G.728, G.729E)
RoHS, WEEE	T.38 Fax Relay

### Ordering Information

Part Number	Description
780136	Touchstone TM722A/NA 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. Includes Quick Install Guide, Ethernet Cable, USB Cable, and CD-ROM with user's guide and USB drivers
780134	Touchstone TM722A/CE 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. Includes Quick Install Guide, Ethernet Cable, USB Cable, and CD-ROM with user's guide and USB drivers