ARRIS
Touchstone®

DOCSIS® 3.0 Telephony Modem TM702A

Configuration

- DOCSIS 3.0 compliant
- PacketCable™ 1.5 compliant
- Flexible 4x4 Upstream/Downstream channel-bonding with superior throughput
- 10/100/1000 Base-T Ethernet interface
- 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)

With millions of Touchstone Telephony Modems shipped, ARRIS is pleased to release our DOCSIS 3.0 next generation residential product family. The Touchstone TM702A is a DOCSIS 3.0 Embedded Media Terminal Adaptor (E-MTA) 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 greater than 160 Mbps to their subscribers to compete against VDSL and Fiber to the home threats. The TM702A 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 turner with up to 100 MHz capture bandwidth

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)	7.6 x 2.1 x 6.1 (19.3 x 5.3 x 15.5) - excluding F-connector
Weight lbs (kg)	1.4 (0.64)
Diagnostic LEDs:	Power, DS, US, Online, Link, Telephone 1, Telephone 2

Interfaces:

RF Interface	External F-connector
Data Interfaces (bridged)	10/100/1000 Base-T Ethernet RJ-45
	High Speed (480Mb/S) USB 2.0*
	NOTE: TM702A/KE does not include USB interface
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	48 V$_{DC}$ nominal
Maximum Loop Length to CPE	1000 ft (305$_M$) 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 161
RF Input Sensitivity Level (dBmV)	−15 to +15
Carrier Bandwidth (MHz)	6

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)
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
RoHS, WEEE
WHQL, USB-IF
IEEE 802.3, IEEE 802.3ab
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
722025	Touchstone TM702A/NA 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. Includes Quick Install Guide, Ethernet Cable, USB Cable, and CD-ROM with user's guide and USB drivers
722026	Touchstone TM702A/CE DOCSIS 3.0 / EuroPacketCable 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. Includes Quick Install Guide, Ethernet Cable, USB Cable, and CD-ROM with user's guide and USB drivers
722836	Touchstone TM702A/KE 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. Includes Quick Install Guide, Ethernet Cable

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