

Touchstone® Telephony Modem TM502C



Application

The Touchstone® Telephony Modem TM502C delivers two lines of primary line Voice over IP (VoIP) along with High-Speed Data Access. The Touchstone TM502C is a DOCSIS® 2.0 and PacketCable™ 1.0 compliant Embedded Multimedia Terminal Adapter (E-MTA), designed to operate over the frequency ranges of 5 to 55 MHz upstream and 90 to 860 MHz downstream.

Setting the Standard for VoIP Subscriber Premises Equipment

ARRIS is the market leader in subscriber premises equipment for cable telephony with deployments of millions of lines of constant-bit rate (CBR) Cornerstone® Voice Port® units and DOCSIS/PacketCable compliant Touchstone E-MTAs worldwide.

ARRIS continues its cable telephony leadership with the Touchstone TM502C. The TM502C incorporates the fifth generation of DOCSIS silicon with an updated telephony interface while still maintaining the feature set of the widely deployed Touchstone TM402 Family of E-MTAs. Each line interface continues to support a 3 REN per line ringing capacity (1 Japan REN = 6000ohms+1uF) and a nominal 48 VDC battery supervisory voltage. Each line interface also supports advanced features such as selectable ringing waveforms, "boost" loop current, loop voltage management for alarm systems, and a template for SNMP provisionable telephony channel settings.

The Touchstone TM502C supports enhanced telephony features including Automatic Gain compensation for Tones and Signals (FSK/CAS), fixed or dynamic jitter buffers, and G.168 compliant echo cancellation. Advanced signal processing methods provide RFC 2833 compliant DTMF relay, T.38 Fax transmission, three-way calling, call waiting and caller ID.

ARRIS Touchstone Telephony Modem Offers World Class Features to Deliver the Highest Quality Voice Service

Reference designs typically cannot deliver the performance and reliability requirements for lifeline telephony service. The extensive ARRIS Research, Development and E-MTA experience provides the highest levels of quality, reliability, and performance for all Touchstone Telephony Modems. This ensures or exceeds all applicable telephony standards.

All ARRIS Touchstone Telephony Modems support a wide variety of CLASS features including three-way calling, call waiting, caller ID, and Emergency 119.

Environmentally Friendly

ARRIS is pleased to be first in the industry to provide E-MTAs that exceed the Restriction of Hazardous Substances (RoHS) directive. Beyond the present directive to remove lead and other heavy metals, ARRIS has increased focus by removing other environmentally impacting materials from the packaging, cables, and other accessories. Please contact your sales representative for more information.



- **DOCSIS 2.0 based and PacketCable 1.0 compliant design provides a standard solution for the long-term**
- **Toll quality voice supplies a superior subscriber experience**
- **Remotely upgradeable to provides additional Firmware features**

Ensures CPE compatibility with Boost Current and Automatic Gain compensation capabilities



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 (H x W x D) in. (cm) 7.4 x 1.8 x 6.9 (18.8 x 4.6 x 17.6): - excluding F-connector
	Weight lbs (kg) 1.06 (0.48)
	Diagnostic LEDs Power, DS, US, Online, Link, Telephone 1, and Telephone 2
Interfaces:	RF Interface External 'F' type connector
	Data Interfaces (bridged) 10/100 Base-T Ethernet RJ-45
	Telephony Interface 2 RJ-11
	Input Power (nominal)..... 100 VAC 50/60 Hz 0.5A max
Telephony:	Supervisory Voltage48 V dc nominal
	Maximum Loop Length to CPE 1500 ft (457M) of 26 AWG (0.4 mm) wire
	Ringing Load Capacity 6 REN total (6 Japan REN = 1000ohm+6uF)
	Provisionable High Loop Current Mode YES
	ITU-T K.21 (Lightning) Tested..... YES
	Programmable Interface for Worldwide Applications Yes (supports multiple country templates)
RF Downstream:	Frequency Range (MHz)..... 90-860
	Modulation (QAM)..... 64 or 256
	Data Rate (Mbps)up to 42.88
	RF Input Sensitivity Level (dBmV) -15 to +15
	Bandwidth..... 6 MHz
RF Upstream:	Frequency Range (MHz)..... 5-55
	Modulation QPSK, 8 QAM, 16 QAM, 32 QAM, 64 QAM & 128 QAM (S-CDMA only)
	Data Rate (Mbps) (Max.)up to 30.72
	RF Output Level (dBmV)..... A-TDMA:
	+8 to 54 dBmV (32 QAM, 64 QAM)
	+8 to 55dBmV (8 QAM, 16 QAM)
	+8 to 58 dBmV (QPSK)
	S-CDMA:
	+8 to +53 dBmV (all modulations)
	Automatic Level Adjust..... Yes
	Gain Control Range (dB).....50
	Frequency Stability (kHz).....±5
	Output Impedance (Ohms).....75
Standards:	Codec: G.711, 64 kbps, μ and A-law Encoded Speech Enhanced Codec Support (G.726, G.728, G.729) T.38 Fax Relay PacketCable Compliant DOCSIS 2.0 Based RoHS Compliant 2002/95/EC
	NTT Edition 5 MPT Ordinance 30 Articles 21, 27, 28, 31 CE VCCI JATE

Ordering Information

Part Number

Description

717946 Touchstone TM502C/JA (DOCSIS 2.0, NSC based, 100VAC, 50/60Hz Power & JIS 8303 (Class II) Utility Power Plug)

(*) The capabilities, system requirements and/or compatibility with third-party products described herein are subject to change without notice. ARRIS, the ARRIS logo, Cadant®, D5™, Touchstone®, Cornerstone®, Keystone™, C4®, C3™, CXM™ Regal®, MONARCH®, Digicon® and TeleWire Supply® are all trademarks of ARRIS International, Inc. Other trademarks and trade names may be used in this document to refer to either the entities claiming the marks and the names of their products. ARRIS disclaims proprietary interest in the marks and names of others. © Copyright 2007 ARRIS Group, Inc. All rights reserved. Reproducing this document in any manner whatsoever without the express written permission of ARRIS Group, Inc., is strictly forbidden. For more information, contact ARRIS.
10 September 2007