1   Introduction

The modem software drivers described in this note were built on May 8, 2001.
This is a release candidate version of V.90 drivers for Apollo ISA platform and Mars PCI platform.
Apollo - This version of drivers will run on DSP1642-CC, DSP1641-CC, DSP1643-CH, DSP1644-CH, DSP1641B-CH
Mars3.2, Mars3, Mars2, Mars1 - this version of drivers will run on DSP1645, DSP1646, DSP1648, DSP1648B.
Apollo3 – Support for Apollo3 (APL43) chipset for Modem/LAN applications.

2   Build Information

The modem drivers use the following PCI ID's for different features.
PCI configuration space definitions :

Device ID => 0x0440, 0x0441, 0x0442, …	**Vendor ID** => 0x11C1
Subsystem ID => Vendor defined	**Subsystem Vendor ID** => Vendor

Device ID : in the PCI configuration space is used for feature set definition.
0x0440 => Mars 2 - data/fax/voice
0x0441 => Mars 2 - data/fax only
0x0442 => Mars 2 - data/fax/tam only
0x0448 => Mars 2 Global Board - data/fax/voice
0x0449 => Mars 2 Global Board - data/fax only
0x044A => Mars 2 Global Board - data/fax/tam only
0x0444 => Apollo 2 data/fax only : Modem/LAN combo board – Apollo behind an Intel 82559
0x0445 => Apollo 2 Global Board – data/fax only : Modem/LAN combo board – Apollo behind an Intel 82559
0x0446 => Apollo 2 data/fax/voice : Modem/LAN combo board – Apollo behind an Intel 82559
0x0447 => Apollo 2 Global Board – data/fax/voice : Modem/LAN combo board – Apollo behind an Intel 82559
0x044C => Mars 3 Perseus – data/fax only (North America and Global board)
0x044E => Mars 3 Mercury – data fax only
0x0450 => Mars 3 Mercury – data fax Global board
0x0451 => Mars 3 Mercury – data/fax/voice
0x0452 => Mars 3 Mercury – data/fax/voice Global board
0x0455 => Mars 3 Perseus – data/fax/voice (North America and Global board)
0x0458 => Mars 3 Mercury – data/fax/tam only.
0x0459 => Mars 3 Mercury – data/fax/tam only. Global board.
0x045A => Mars 3 Perseus – data/fax/tam only. (North America and Global board)
0x045B => Apollo 3 Perseus – data/fax only : Modem/LAN combo board – Apollo behind an Intel 82559
0x045C => Apollo 3 Mercury – data/fax only : Modem/LAN combo board – Apollo behind an Intel 82559
0x045D => Mars 3 Mercury – data/fax/tam only. Global board for Cardbus modem product.
0x044C => Mars 3.2 Mercury – data fax only when no eeprom is present (North America DAA)

Vendor ID : 0x11C1 is the Lucent Vendor ID. This field cannot be changed.

Subsystem ID : This field may be used to identify different board revisions and may be used by the board manufacturer.

Subsystem Vendor ID : This field is used to identify the board manufacturer.

The fields in the PCI configuration space may be programmed into the EEPROM on the board. However, changing of the PCI fields will result in changing the corresponding modem.INF file.

Modem INF Description:

Ltglobal.inf – Support for all Apollo and Mars modems for Win 98/95 and Win NT.
Ltw2kg.inf – Support for all Apollo and Mars modems for Win 2000.
Ltewmeg.inf, ltmwme.inf – Support for all Apollo and Mars modems for Win Me.

Ltdf.inf – Data/Fax – Win 98/Win NT
Ltdfnt.inf – Data/Fax – Win 2000
Ltewmedf.inf, Ltmwmedf.inf – Data/Fax – Win Me

Ltmodem.inf, Ltwave.inf – Data/Fax/Voice – Win 98/Win NT
Ltmdmnt.inf – Data/Fax/Voice – Win 2000
Ltewme.inf, Ltmwme.inf – Data/Fax/Voice – Win Me

Ltdft.inf, Ltwave.inf – Data/Fax/Tam – Win 98/Win NT
Ltdftnt.inf – Data/Fax/Tam – Win 2000
Ltewmedt.inf, Ltmwmedt.inf – Data/Fax/Tam – Win Me

Ltpcmcia.inf – Data/Fax/Tam PCMCIA – Win 98/Win NT
Ltpcmc_g.inf – Data/Fax/Tam PCMCIA Global – Win 98/Win NT
Ltcbus.inf - Data/Fax/Tam Card Bus modem – Win 98/Win NT

Ltports.inf – For all boards, needed for Win NT install

Modem Driver Description:

Ltmodem.vxd, Ltcom.vxd, Ltvcd.vxd – modem driver for Win 98/95
Ltmodem.sys – modem driver for Win NT
Ltmdmnt.sys – modem driver for Win 2000 and Win Me.
Ltmsg.exe – program to display illegal country selection and overcurrent detection.

Modem Setup and Utilities Description:

Setup utilities – setup.exe, ltsetup1.dll, ltsetup2.dll, ltsetup3.exe, ltsetup.ini.
Ltremove.exe – program to remove all modem related files and registry entries.
Lthomol.exe – program to change homologation parameters, uses lthomol.ini.

3   Changes Since Driver Version 5.97

01/02/08 16:51:17 vr
Hardware : APL43 Data/Fax boards, problem when sending a fax. Fax mode - for data/fax only boards, when sending a

fax, the input pin for local phone sense is checked to see if the local phone is in off hook state. On some boards this pin is not pulled down and false trigger. This prevents the driver from dialing the phone number. The software is changed to always return false.

01/02/09 14:01:42 bxu
V.90 – Performance Improvements :
DSP code version 238 for Mars2 and DSP version 153 for Mars3 devices. Increase in DSP data storage buffers to handle slow PC's. The buffer is approximately 5mse for data in both directions.

01/02/12 09:08:12 vr
Vendor Specific Change : Vendor Id 0x144d - previous values for Japan were enter incorrectly - par#1 = 0x21, par#2 = 0x43 for Perseus.

01/02/20 19:10:48 trevor
WDM Driver for Win Me and Win 2000 : Added support for "AT&D1", in the WDM driver, the modem would not drop the call if DTR is turned OFF and the modem is on line. The driver will not drop DTR on PortClose if "AT&D1" is issued before the call is placed.

01/02/20 19:12:59 trevor
Win Whistler : Fixed a Whistler issue with Multiple modem support. We do notsupport a second device. This check was failing if the second device was uninstalled and re-installed. Aslo fixed a Whistler issue, if Devctl was sending Serial Query and Set Information requests to the debug device. These were not being handled correctly. We now fail these requests to the debug device.

01/02/22 12:50:14 bxu
Perseus 1035A DAA : Problem with false RING detects. Changed the ring detect threshold from 0x01ff to 0x1000 to fix false RING detect problems.
Also for Perseus, the OffhookShuntTime parameter set to 0 for Australia and Netherlands. The large mercury values used earlier cause delays in Perseus and some PTT off-hook transient tests fail.

01/02/28 16:37:36 vr
Hardware : Pulse Dial Problem : The modem was incorrectly dialing the wrong pulse digits under stress conditions. Changed the DSP read memory function to take out the extra protection of timer expiring in 20 msec. This additional check was causing problems when pulse dialing and the PC is busy transferring data from a Pcmcia cd rom or Pcmcia hard disc.
Also increased the initial boot DSP checksum verification timeout back to 10MS and 200MS. The shorter timeout was causing an intermittent problem on WinME, with a 1.4 Ghz PC sometimes with other drivers in the system.

01/03/02 13:25:38 vr
Mars/Apollo V.90 Version 5.98

01/03/08 16:27:18 vr
AT Command : Changed "ATI5" command to display - PCI Vendor ID, Device ID, Sub Vendor ID, Sub Device ID

01/03/08 16:39:20 vr
Mars 3.2 – PCI ID's when no EEPROM present : Hardware Change - check mars 3.2 device board for eeprom population. If no eeprom, then read bit I/O A3 input. If input is low there is no eeprom, and the driver would default to mercury codec with North America DAA.

01/03/13 13:45:52 trevor
Win ME : Suspend/Resume issue when a phone number is blacklisted. Modified the function PM_SetD3 code. We now always call DP_WAKEUP and DP_SLEEP, when going to standby. This fixes a problem reported by a customer on Win ME, where there was a phone number in the blacklist. This sometimes resulted in a scenario where the DP was asleep and the background timer was still active. This caused the PME enable to not work correctly and the machine

would not Wake on Ring.

01/03/23 13:44:59 trevor
Win XP (Whistler) : Modifications to fix a Stress/DevCtl (IOCTL) issue with Whistler as reported by Microsoft.

01/04/05 09:58:54 vr
Mars 3.2 Audio pop problem : Audio SIO - to prevent any pop from coming thru the speakers when the modem is initialized, we need to configure the audio SIO port as bit I/O input pins. Only during the use of the audio SIO we configure the pins as outputs for audio SIO. This fixes the problem with audible pops with Mars 3.2 chips.

01/04/09 12:05:45 vr
Perseus (DAA with 1035 codec) - problem with dc offset measurement. The modem driver does a off-hook to measure dc offset. This was causing a problem with MCT tests. The modem would dial the wrong number or detect busy due to this brief off-hook to on-hook transition. This code is removed and a fixed dc offset value is used.
Also fixed a problem with test DTMF commands for PTT approval.

01/04/12 13:31:18 vr
V.34 - save precoder coefficients when we issue a retrain and go into data mode. This condition was not done correctly in previous releases of driver and could cause problems to 3Com client V.34 modems. The 3Com modem keeps issuing retrains constantly under some line conditions, if pre-coding is selected on that line and we issued a retrain initially.

01/04/12 15:41:04 vr
Mars/Apollo V.90 Version 5.99

01/03/13 11:59:43 trevor
Setup Program Version 1.37 : Added a new function called CopyNT5Inf. This function uses the SetupCopyOemInf function to copy W2K Inf files. This fixes a problem where we were seeing a Digital Signature warning message popping up when running "ltremove.exe" and setup multiple times on W2K.

01/04/18 13:34:26 trevor
Voice : Initialized a pointer in the voice init function to point to a valid address. The problem was that the system would crash in Win 2000, when waking on ring and answering a FAX using BVRP's PhoneTools package. This was caused because they turn on Distinctive Ring using the AT+VDR command. The timing of the command was causing the code to use an un-initialized pointer. This problem would only be seen if the AT+VDR command is issued after the first ring comes in.

01/05/03 13:34:15 trevor
Win 2000 : Page Fault occurring with the modem driver on certain machines. Set function SerialKillPendingIrps to non-paged. This function was causing a blue-screen on one laptop platform. The crash was occurring because this function was getting incorrectly paged out. Set function KillAllReadsorWrites to non-paged.

01/05/08 08:40:57 vr
K56Flex - Build Options, removed K56Flex option since it was no longer used by any customer. This saves about 50K in code space.

01/05/08 16:38:59 bxu
Perseus (DAA with 1035 codec) : Problem with repeated dialing as used in the MCT program. The modem would dial an invalid digit since there was a glitch on the line due to an incorrect DC offset value. The correct DC offset value is written each time the modem is ready to dial.

01/05/08 16:57:06 vr
Mars/Apollo V.90 Version 6.00

4 Open Issues/Bugs

Lucent will update the list of all open issues/bugs etc. Testing is in progress.

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