

MID:COM 8000 SD Files

SD Data Files, SD Tax Files, and SD Flash Media User's Guide

**Reference for SD Files for the
MID:COM 8000 Computer**



**Midwest Computer Register, Corp.
1605 170th Street
Hampton, IA 50441**

**Telephone: 641-456-4848
Fax: 641-456-4600
E-Mail: Sales@MidComCorp.com
Web: www.MidComCorp.com**

MID:COM THE ONE THAT WORKS!

TABLE OF CONTENTS

SECURE DIGITAL (or SD) FLASH MEMORY MEDIA NOTES	6
SD FLASH DRIVE AND SD DATA FILE HANDLING/OPERATION	7
SD DATA FILE CREATION:	8
SD DATA FILE RECORD LENGTH:	8
SD DATA FILE FIELD LISTING:	9
SD DATA FILE FIELD DESCRIPTIONS:	10
Field 1: Card Status: 4 digits - format X000	10
Field 2: Load Location: 2 Digits - format XX	11
Field 3: Product Code: 2 Digits - format XX	11
Field 4: Customer Name: 19 digits - format XXXXXXXXXXXXXXXXXXXXX	11
Field 5: Address Line 1: 20 digits - format XXXXXXXXXXXXXXXXXXXXX	11
Field 6: Address Line 2: 20 digits - format XXXXXXXXXXXXXXXXXXXXX	11
Field 7: Account Number: 8 numeric digits required - format XXXXXXXX	11
Fields 8-11: Comment Lines: 20 digits - format XXXXXXXXXXXXXXXXXXXXX	12
Field 12: Price/Unit: 6 digits - format XXXXXX [XX.XXXX] (\$)	12
Field 13: Tax Method: 1 digit - format X (\$,%,C,J)	12
Field 14: Tax Rate: 6 digits - format XXXXXX [XX.XXXX] [XX0000] [000XXX]	12
Field 15: Discount "A" Key: 1 digit - format X ("D" for \$, "P" for %)	12
Field 16: Discount "A" Rate: 6 digits - format XXXXXX [XX.XXXX w/ implied decimal]	12
Field 17: Discount "A" Days: 2 digits - format XX	12
Field 18: Discount "B" Key: 1 digit - format X ("D" for \$, "P" for %)	13
Field 19: Discount "B" Rate: 6 digits - format XXXXXX [XX.XXXX w/ implied decimal]	13
Field 20: Preset Volume: 6 digits - format XXXXXX	13
Field 21: Preset Price: 6 digits - format XXXXXX [XX.XXXX w/ implied decimal]	13
Field 22: Truck Number: 4 digits - format XXXX	13
Field 23: Plant Number: 4 digits - format XXXX	13
Field 24: Driver Number: 4 digits - format XXXX	13
Field 25: Time Start: 4 digits - format XXXX [hhmm]	14
Field 26: Time Finish: 4 digits - format XXXX [hhmm]	14
Field 27: Date: 6 digits - format XXXXXX [mm/dd/yy]	14
Field 28: Odometer Start: 8 digits - format XXXXXXXX	14
Field 29: Odometer Finish: 8 digits - format XXXXXXXX	14
Field 30: Price Per Unit Used: 6 digits - format XXXXXX [XX.XXXX]	14
Field 31: Tax Method Used: 1 digit - format X (\$,%,C,J)	14
Field 32: Tax Rate Used: 6 digits - format XXXXXX [XX.XXXX w/ implied decimal]	14
[XX0000] or [000XXX] if code#	14
Field 33: Gross Gallons: 8 digits - format XXXXXX.X	15
Field 34: Net Gallons: 8 digits - format XXXXXX.X	15
Field 35: Product Cost: 9 digits - format XXXXXX.XX	15

Field 36: Sequence Number: 6 digits - format XXXXXX	15
Fields 37 - 56: Tax Categories: 7 digits - format XXXX.XX (\$)	15
Field 60: Meter Number: 1 digit - format X	16
Field 61: Received On Account: 8 digits - format XXXXXXXX	16
[XXXXXX.XX w/ implied decimal]	16
Field 62: Ticket Number: 6 digits - format XXXXXX	16
Field 63: Percent Full: 4 digits - format XXXX	16
Field 64: Tank Number: 10 digits - format XXXXXXXXXX	17
Field 65: Alert Code: 2 digits - format XX	17
Field 66: Quantity Loaded: 6 digits - format XXXXXX	17
Field 67: Card Serial Number: 6 digits - format XXXXXX	17
Field 68: Latitude: 9 digits – Format DDMMmmmmN (ex: 32471234N)	18
Field 69: Longitude: 10 digits – Format DDDMMmmmmE (ex: 097471234N)	18
CRLF Field:	18
COMLINK Data Files	19
Comlink Field 1: Card Status: 4 digits	19
Comlink Field 8: Vehicle Fill Button ID: 20 digits	19
Comlink Fields 9-10: Vehicle Fill Vehicle ID (Button Text): 20 digits + 20 digits	19
Comlink Field 33: Vehicle Fill Volume: 8 digits	20
Comlink Field 36: Comlink Sequence Number: 6 digits	20
Comlink Field 55: Vehicle Fill Fleet Start Time: 7 digits (6+1)	20
Comlink Field 56: Vehicle Fill Fleet Stop Time: 7 digits (6+1)	20
Comlink Delivery Records	20
SD TAX FILES, INCLUDING STANDARD AND EXPANDED FILE FORMATS:	25
INCLUDED SAMPLE TAX FILES:	25
SD Tax Code Files, Tax Formats, and Creation instructions	25
THE STANDARD TAX CODE CARD FORMAT: (20,20,100)	26
SD Tax File Standard Format - Programming	27
THE EXPANDED TAX CODE CARD FORMAT: (100,100,100)	29
SD Tax File – Expanded Format Programming:	30
THE JUMBO TAX CODE CARD FORMAT: (500,500,500)	33
SD Tax File – Jumbo Format Programming:	34
SD FILE COMPARISON TO CYBERCARD DATACARD FILE:	38
VERSION HISTORY	39

Trademarks

MID:COM *E:Count* and *their integrated software and hardware components* are trademarks of Midwest Computer Register Corp. (MID:COM). *Microsoft, MS, and MS-DOS* are registered trademarks, *Windows* is a trademark of Microsoft Corporation. Other brand and product names mentioned in this publication are trademarks or registered trademarks of their respective holders.

Copyright Notice

8000 SD Files - Data Tax Fields and Media v1.07.docx

© 2006-2013 Midwest Computer Register, Corp. All rights reserved. Neither this publication nor any part of this publication may be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine readable form without the prior written permission of:

Midwest Computer Register, Corp.
1605 170th St.
PO Box 376
Hampton, Iowa 50441, USA
641-456-4848
www.midcomcorp.com
sales@midcomcorp.com

Disclaimer

Midwest Computer Register, Corp. provides this document and the software "as is" without any warranty of any kind, either expressed or implied; including but not limited to, the implied warranties of merchantability or fitness for a particular purpose.

Midwest Computer Register, Corp. reserves the right to make improvements and modifications to this document, and the products described in this document, at any time and without notice.

Midwest Computer Register, Corp. shall not be liable for any errors contained herein or for incidental and consequential damages in connection with the furnishings, performance, or use of this material.

Contact Information

You have several ways to interact with Midwest Computer Register, Corp. and its staff. If you have a suggestion you can email, write, or call us with the information below.

Email

Sales:	sales@midcomcorp.com
Support:	http://www.midcomcorp.com/Contact.html

Postal Address

MID:COM
1605 170th St
PO Box 376
Hampton, Iowa 50441

Phone Numbers

Phone:	641-456-4848
Fax:	641-456-4600

SECURE DIGITAL (or SD) FLASH MEMORY MEDIA NOTES

MID:COM supports only SanDisk SD Cards and Drives and Windows Xp/Vista Operating Systems. Using SD cards by other manufacturers or other operating systems is NOT supported.

INSERTION: Firmly insert the SD Memory Card into the MID:COM 8000 with the SD Memory Card electrodes (the metal contacts) facing upward and toward the LCD screen.

STATIC ELECTRICITY: Inserting an SD flash card that is charged with static electricity into the MID:COM 8000 may cause damage to the card, and possibly to the MID:COM 8000. It is a good practice when inserting the SD flash card to first touch the top of the MID:COM 8000 or the pedestal and then insert the SD flash card. It is also good practice to keep the card in the plastic case that it came in when transporting it from the office to the truck and from the truck to the office.

SERVICE LIFE: The SD flash card has a long, but limited service life. If data can no longer be read or written to the SD flash card it is necessary to purchase a new one.

FORMATTING: It is necessary to follow the customary procedures to format the SD flash card using a PC with Windows 2000/XP/Vista and then load the delivery data file. When formatting, and depending on card size, a box may appear labeled "FILE SYSTEM". Select "FAT" not "FAT32". The SD flash card should only need to be formatted once before using it. If however, the MID:COM 8000 does not recognize that the SD flash card is inserted, or if customer records are missing or corrupted, first try reformatting the SD flash card and reloading the customer file.

SINGLE FILE ONLY: Only one Data File may be used at any one time. This will allow a data file by any name to be used. The prime rule with handling files for the 8000 is that only ONE FILE CAN BE ON THE CARD. The file can be named anything, but before writing a new file the OLD MUST BE DELETED.

DELETE PREVIOUS FILE FIRST: The existing file MUST be deleted before writing a new one. Simply overwriting another file with the same name is not the same as deleting the previous one. Overwriting an old file with a new one with the same name is NOT the same as deleting it. Since this will probably be the most common error in using the card, it may be prudent to embed the writing, reading and deleting in the application software rather than have the user point and click their way through it.

REMOVAL: Never remove the SD flash card during normal operation of the MID:COM 8000. This is especially important to observe during a delivery. Unsafe removal will likely damage the SD flash card and corrupt the data for the delivery. The card should ONLY be inserted or removed if the MID:COM 8000 is off OR when the main menu is showing on the screen. (Top line says "PRINT SHIFT TOTALS").

WRITE PROTECTION: While looking at the front of the SD flash card you will observe a very small switch on the left hand side. The bottom of its travel it is labeled LOCK. If this switch is placed in the LOCK position (down) it will be in the Write Protection State. THE P.C. WILL NOT BE ABLE TO WRITE TO THE CARD WHEN IN THIS STATE.

SD FLASH DRIVE AND SD DATA FILE HANDLING/OPERATION

1. First, install the SanDisk Reader/Writer Card Drive following the manufacturer's directions.
2. Next, insert an SD flash card into the drive and use Windows tools to format it.
 - a. A box labeled "FILE SYSTEM" may appear depending on SD flash card size. Choose "FAT", Not FAT32".
3. As a test, drag any text-type file onto the SD flash card - this will write automatically write the file to the SD flash card.
4. Then drag the file back off of the SD flash card to a different Windows Directory. The two files can now be compared to guarantee that they are identical.
5. The SD flash card should never have to be reformatted again unless problems are experienced with the PC or 8000 reading or writing the SD flash card.
6. In almost every way the process is exactly the same as handling a floppy disk.
7. Delete the test file off of the SD flash card before putting an SD file on the flash card.

SD DATA FILE CREATION:

1. Create the "M" record. This is the first record in the file and has a capital "M" as the first character followed by 511 bytes of any character (see above for notes on terminating the records with CRLF. IMPORTANT: The account number field must be padded with zero's for the system to properly search by account number.
2. Append up to 50,000 customer records ordered by numerical account order (status 1XXX).
3. Append 1000 blank records (status 4XXX, Account # 00000000).
4. Append 1000 blank load records (status 3XXX).
5. Append | (a pipe character) to the end of the file (required).
6. Refer to the file "8000 Sample SD File Vn.nn.STR" for an example of a working customer file (n.nn indicates the version of the sample file and will change over time).

SD DATA FILE RECORD LENGTH:

The MID:COM 8000 record size is 512 bytes. You should make the last 2 characters of the padding (CR)(LF) so that the file is more readable in most editors and word processors. Since these characters are invisible in most word processors, some care is required. Contact MID:COM for a recommended text editor.

It is imperative that each and every record placed into the SD file be 512 bytes.

The end of the SD file is indicated by the | (pipe) symbol immediately after the final blank load record.

SD DATA FILE FIELD LISTING:

FIELD #	DESCRIPTION	DIGITS	START	END	LENGTH	FORMAT	METHOD
1	CARD STATUS	4	1	4	4	XXXX	CB
2	LOAD LOCATION	2	5	6	2	XX	M
3	PRODUCT CODE	2	7	8	2	XX	M
4	CUSTOMER NAME	19	9	27	19	Z---Z	CP
5	ADDRESS LINE 1	20	28	47	20	Z---Z	CP
6	ADDRESS LINE 2	20	48	67	20	Z---Z	CP
7	ACCOUNT NUMBER	8	68	75	8	X---X	CP
8	COMMENT LINE 1	20	76	95	20	Z---Z	C
9	COMMENT LINE 2	20	96	115	20	Z---Z	C
10	COMMENT LINE 3	20	116	135	20	Z---Z	C
11	COMMENT LINE 4	20	136	155	20	Z---Z	C
12	PRICE/UNIT	6	156	161	6	XXXXXX	CP
13	TAX METHOD	1	162	162	1	Z	CM
14	TAX RATE	6	163	168	6	XXXXXX	CM
15	DSC. "A" KEY	1	169	169	1	Z	CM
16	DSC. RATE A	6	170	175	6	XXXXXX	CM
17	DSC. "A" DAYS	2	176	177	2	XX	CMP
18	DSC. "B" KEY	1	178	178	1	Z	CM
19	DSC. RATE B	6	179	184	6	XXXXXX	CM
20	PRESET VOLUME	6	185	190	6	XXXXXX	CM N1
21	PRESET AMOUNT	6	191	196	6	XXXXXX	CM N2
22	TRUCK NUMBER	4	197	200	4	XXXX	M
23	PLANT NUMBER	4	201	204	4	XXXX	M
24	DRIVER NUMBER	4	205	208	4	XXXX	M
25	TIME START	4	209	212	4	HHMM	8P
26	TIME FINISH	4	213	216	4	HHMM	8
27	DATE	6	217	222	6	MMDDYY	8P
28	ODOMETER START	8	223	230	8	XXXXXXXX	8
29	ODOMETER FINISH	8	231	238	8	XXXXXXXX	8
30	PRICE/UNIT USED	6	239	244	6	XXXXXX	8P
31	TAX METHOD USED	1	245	245	1	Z	8
32	TAX RATE USED	6	246	251	6	XXXXXX	8
33	GROSS GALLONS	8	252	259	8	XXXXXX.X	8
34	NET GALLONS	8	260	267	8	XXXXXX.X	8P
35	PRODUCT COST	9	268	276	9	XXXXXX.XX	8P
36	SEQUENCE #	6	277	282	6	XXXXXX	8P
37	TAX CAT. 1	7	283	289	7	XXXX.XX	8P
38	TAX CAT. 2	7	290	296	7	XXXX.XX	8P
39	TAX CAT. 3	7	297	303	7	XXXX.XX	8P
40	TAX CAT. 4	7	304	310	7	XXXX.XX	8P
41	TAX CAT. 5	7	311	317	7	XXXX.XX	8P
42	TAX CAT. 6	7	318	324	7	XXXX.XX	8P
43	TAX CAT. 7	7	325	331	7	XXXX.XX	8P
44	TAX CAT. 8	7	332	338	7	XXXX.XX	8P
45	TAX CAT. 9	7	339	345	7	XXXX.XX	8P
46	TAX CAT. 10	7	346	352	7	XXXX.XX	8P
47	TAX CAT. 11	7	353	359	7	XXXX.XX	8P
48	TAX CAT. 12	7	360	366	7	XXXX.XX	8P
49	TAX CAT. 13	7	367	373	7	XXXX.XX	8P
50	TAX CAT. 14	7	374	380	7	XXXX.XX	8P
51	TAX CAT. 15	7	381	387	7	XXXX.XX	8P
52	TAX CAT. 16	7	388	394	7	XXXX.XX	8P
53	TAX CAT. 17	7	395	401	7	XXXX.XX	8P
54	TAX CAT. 18	7	402	408	7	XXXX.XX	8P
55	TAX CAT. 19	7	409	415	7	XXXX.XX	8P
56	TAX CAT. 20	7	416	422	7	XXXX.XX	8P
57	DISCOUNT A AMT.	7	423	429	7	XXXX.XX	8P
58	DISCOUNT B AMT.	7	430	436	7	XXXX.XX	8P
59	TOTAL COST	9	437	445	9	XXXXXX.XX	8P
60	METER NUMBER	1	446	446	1	X	CM
61	REC'D ON ACCT.	8	447	454	8	XXXXXXXX	M
62	TICKET NUMBER	6	455	460	6	XXXXXX	CM
63	PERCENT FULL	4	461	464	4	XXXX	M
64	TANK NUMBER	10	465	474	10	X...X	M
65	ALERT CODE	2	475	476	2	XX	M
66	QUANTITY LOADED	6	477	482	6	XXXXXX	M
67	CARD SERIAL #	6	483	488	6	XXXXXX	8
S1	PADDING	22	489	510	22	SPACES	R1
S2	CRLF	2	511	512	2	CRLF	R2

* - INDICATES NOT IMPLEMENTED IN VERSION 1.0
X - ASCII CHARACTER (NUMERIC)
Z - ASCII CHARACTER (ALPHANUMERIC)
H - HOUR
M - MINUTE OR MONTH
C - WRITTEN ONTO CARD BY HOST COMPUTER
M - MANUALLY ENTERED INTO 8000 BY OPERATOR
8 - WRITTEN ONTO CARD BY 8000
P - PRINTED ON DELIVERY TICKET
N1 - XXXXX.X IN VER. 8XX OR 9XX
N2 - IMPLEMENTED IN VER. 8XX AND 9XX

TOTAL 512

SD DATA FILE FIELD DESCRIPTIONS:

Records in the data file for the MID:COM 8000 consist of 67 fixed- field-length fields. All of the fields must be present and they must be of the exact field length described below. Fields which are not completely filled to the field length requirement must be "padded out" to the correct length. This is critical for the MID:COM 8000 to read the SD card.

Field 1: Card Status: 4 digits - format X000

Card status is written to the SD card by the host computer and may be over written by the 8000 computers. The number in this field defines one of three transaction types and determines if and how the transaction was acted upon.

The three transaction types are defined as:

 Status 1000 - regular delivery record - status 0000 when completed

 Status 4000 - blank delivery record - status 0000 when completed

 Status 3000 - load record - status 2000 when completed

Status is used by the 8000 for sorting and locating transaction records. The host system may use it for similar purposes. Note that since the 8000 computer doesn't record from scratch, an adequate number of blank records and load records must be written to the card by the host computer, along with the regular customer delivery records.

The first byte of the status field determines the type of record as described above and the second determines whether the record is locked out from driver access if it has been used for a delivery. The lockout feature reduces the time to scan or search for the record by "hiding" the used records.

Use of the second byte only applies to status types 1000 and 4000, and the byte can only be a 1 or a 0. If the host computer writes a 0 to byte 2, then the record will be locked out from further access after the delivery is completed. If a 1 is written, the record may be accessed again and overwritten.

Examples:

 1000 > delivery made > 0000 -- further access denied

 1100 > delivery made > 0100 -- record may be accessed again

Field 2: Load Location: 2 Digits - format XX

Load location is manually entered by the driver during a load operation and is used to identify from where the product was loaded. It is up to the office to determine what the two numbers signify.

Examples of possible load location codes:

- 00 - main plant
- 01 - acme terminal
- 03 - satellite plant 5

Field 3: Product Code: 2 Digits - format XX

The product code is manually entered by the driver during a load operation and is used to identify the type of product being loaded.

Examples:

- 00 - regular gasoline
- 01 - #2 fuel oil
- 02 - propane - home heating
- 03 - propane - motor fuel
- 04 - diesel – taxable

Field 4: Customer Name: 19 digits - format

1234567890123456789012345

XXXXXXXXXXXXXXXXXXXXX

Field 5: Address Line 1: 20 digits - format

XXXXXXXXXXXXXXXXXXXXX

Field 6: Address Line 2: 20 digits - format

XXXXXXXXXXXXXXXXXXXXX

These fields are written to the SD card by the host computer and are displayed along with the account number as the driver scans through the SD card. They will print on the ticket unless they are filled with all spaces.

Field 7: Account Number: 8 numeric digits required - format XXXXXXXX

The account number is written to the SD card by the host computer and is used to identify the customer and locate delivery information on the SD card.

A special case exists for an account number which contains all zeros (00000000). This case is reserved for blank delivery records. Blank records are used for deliveries to customers whose account number and other information that had not been previously written onto the SD card.

Fields 8-11: Comment Lines: 20 digits - format XXXXXXXXXXXXXXXXXXXXXXXX

These fields are written to the SD card by the host computer and are general purpose in nature. These four fields will be displayed to the driver following the customer name, address, and account number screen. However if field 7 is all zeros, then all four fields are not displayed.

They are not printed on the ticket or acted on in any other way. They may be used for driver instructions, additional customer information, or any other purpose.

Field 12: Price/Unit: 6 digits - format XXXXXX [XX.XXXX] (\$)

Price per unit is written to the SD card by the host computer. The driver may change the price before or after the delivery, but not during.

Field 13: Tax Method: 1 digit - format X (\$,% ,C,J)

Field 14: Tax Rate: 6 digits - format XXXXXX [XX.XXXX] [XX0000] [000XXX]

These fields are used together to determine the tax rate or code number. Tax method defines whether the tax will be in terms of dollars per gallon, percent of product cost, or a tax code representing multiple taxes. To use a 6.75% sales tax fields 13+14 should be "%067500", to use a 79.9-cent /gallon excise tax fields 13+14 should be "\$007990".

If tax method is "C" then the tax rate format changes to XX0000, where XX is the tax code number. I.E. 050000. This is the Standard or Expanded Tax Codes for the 8000 computer. These fields are written to the SD card by the host computer.

If tax method is "J" then the tax rate format changes to 000XXX, where XXX is the tax code number. I.E. 000427. This is the Jumbo Tax Code that is only valid for the RoadWarrior computer. These fields are written to the SD card by the host computer.

Field 15: Discount "A" Key: 1 digit - format X ("D" for \$, "P" for %)

Field 16: Discount "A" Rate: 6 digits - format XXXXXX [XX.XXXX w/ implied decimal]

Field 17: Discount "A" Days: 2 digits - format XX

These fields are used together to determine a "quick pay" discount. Like taxes, discounts may be computed as dollars per gallon or percent of product cost. Field 15 defines which of these methods apply to the rate in field 16. If field 15 is "D" (dollars) or "P" (percent), the discount will be computed and printed for the sale, however if field 15 is \$ or %, the discount is still defined but not computed or printed. The result of the discount "A" computation is printed on the delivery ticket as, "XX DAY DSC. XXXX.XX", and is always the last line on the delivery ticket. The discount amount is not deducted from the total cost. These fields are written to the SD card by the host computer. To use a 1% discount fields 15+16 should be "P010000", to use a 3-cent /gallon discount fields 15+16 should be "D000300".

Field 18: Discount "B" Key: 1 digit - format X ("D" for \$, "P" for %)

Field 19: Discount "B" Rate: 6 digits - format XXXXXX [XX.XXXX w/ implied decimal]

These fields are used together to determine the discount applied to the sale before any taxes are applied. Application of the "B" discount is the same as for the "A" discount, except it is deducted from the previously computed product cost, and printed in the line following product cost.

Field 20: Preset Volume: 6 digits - format XXXXXX

Preset volume is the number of gallons that the customer requested or is allowed. If preset auto stop valves are used in the system, these valves will be shut to stop product flow when the amount delivered reaches the preset volume. This field is written to the SD card by the host computer.

Field 21: Preset Price: 6 digits - format XXXXXX [XX.XXXX w/ implied decimal]

Preset price is the total cost of the delivery at which the preset valves will shut down product flow. For example, if the customer ordered \$100.00 of product, the 8000 computer calculates the number of gallons necessary to come up with \$100.00 worth of product, including all applicable taxes and discounts, and then uses this gallon amount to shut the valves at the appropriate time. This field is written to the SD card by the host computer. .

Field 22: Truck Number: 4 digits - format XXXX

Field 23: Plant Number: 4 digits - format XXXX

Both truck and plant numbers are programmed into the 8000 computer during initial setup. Plant number normally refers to location where the truck is based. Both fields are written to the SD card by the 8000.

Field 24: Driver Number: 4 digits - format XXXX

The driver number is programmed into the 8000 computers and may be changed at any time by the driver. This field is written to the SD card by the 8000 computer.

Field 25: Time Start: 4 digits - format XXXX [hhmm]

Field 26: Time Finish: 4 digits - format XXXX [hhmm]

Time start is the time when the delivery ticket was inserted into the 8000 computer and both the computer and register head are reset to zero. Time finish is the time when the delivery ticket is printed to complete the transaction. Both fields are written to the SD card by the 8000 computer. These times are in military format, i.e. 6:00 pm = 18:00 note the separator mark (:) is not written to the SD card.

Field 27: Date: 6 digits - format XXXXXX [mm/dd/yy]

The date is written to the SD card by the 8000 computers when the delivery ticket is printed. Note that the separator marks (/) are suppressed.

Field 28: Odometer Start: 8 digits - format XXXXXXXX

Field 29: Odometer Finish: 8 digits - format XXXXXXXX

Odometer start is the odometer reading recorded at the time the ticket is inserted and the 8000 computer resets to 0. Odometer finish is the reading at the time the delivery ticket was printed. If these readings are not the same for any particular delivery, the truck had been driven before the ticket was printed. Both fields are written to the SD card by the 8000 computer.

Field 30: Price Per Unit Used: 6 digits - format XXXXXX [XX.XXXX w/ implied decimal]

Price per unit used is the actual price used for the transaction since the driver is able to override a price that was written to the SD card by the host computer. This field is written to the SD card by the 8000 computer.

Field 31: Tax Method Used: 1 digit - format X (\$,%,C,J)

Field 32: Tax Rate Used: 6 digits - format XXXXXX [XX.XXXX w/ implied decimal]
[XX0000] or [000XXX] if code#

These fields represent the actual tax values used since the driver is able to override the tax written to the SD card by the host computer. See fields 12 and 13 for definitions. "J" is only valid for the RoadWarrior computer. These fields are written to the SD card by the 8000 computer.

Field 33: Gross Gallons: 8 digits - format XXXXXX.X

Gross gallons is the amount delivered before correcting it for expansion or contraction with temperature. If the 8000 computer was not set up for temperature compensation, then gross gallons is the same as net gallons. This field is written to the SD card by the 8000 computer.

Field 34: Net Gallons: 8 digits - format XXXXXX.X

Net gallons are the amount of product delivered as it was displayed and printed by the 8000 computer. If the 8000 was not set up for temperature compensating the amount registered, then net gallons is the same as gross gallons. This field is written to the SD card by the 8000 computer.

Field 35: Product Cost: 9 digits - format XXXXXX.XX

Product cost is the result of calculating net gallons X price/unit, when the delivery has ended and the ticket is printed out. It is written to the SD card by the 8000 computer.

Field 36: Sequence Number: 6 digits - format XXXXXX

The sequence number is initialized during setup of the 8000 computer. Once set, it increments by one for each delivery. It is both printed on the ticket and written to the SD card by the 8000 computer.

Fields 37 - 56: Tax Categories: 7 digits - format XXXX.XX (\$)

Tax category amounts, along with their associated labels are printed on the ticket. Tax categories represent the results of the computations of the 20 available tax rates that may be applied to the 20 possible tax codes. If the driver had chosen tax code 00 at the time of delivery, the values in fields 30 and 31 are used and the result is written to field XX. If the driver selected a tax code other than 00, then the tax category rates that make up the particular tax code used, are computed individually, printed on the ticket, and written to the SD card in the corresponding field. Refer to "taxes and discounts" for more detailed information on how the taxes are applied.

Field 57: Discount "A" Amount: 7 digits - format XXXX.XX (\$)

Field 58: Discount "B" Amount: 7 digits - format XXXX.XX (\$)

The two discounts are the results of the computation of the values in fields 15 thru 19. They are written to the SD card by the 8000 computer.

Field 59: Total Cost: 9 digits - format XXXXXX.XX

Total cost is printed on the ticket and written to the SD card by the 8000 computer. Total cost is the sum of the product cost, shown in field 34. And all taxes, shown in fields 36 thru 55, less discount b shown in field 57.

Field 60: Meter Number: 1 digit - format X

Meter number is selected by the driver depending on which meter is used for the delivery (dual system). This field is written to the SD card by the 8000 computer.

Field 61: Received On Account: 8 digits - format XXXXXXXX
[XXXXXXX.XX w/ implied decimal]

Received on account may be entered by the driver following the printing of the delivery ticket and prior to the next delivery. Note that the decimal point is suppressed. This field is written to the SD card by the 8000 computer.

Field 62: Ticket Number: 6 digits - format XXXXXX

Ticket number may be written to the SD card by the host computer in a situation where delivery tickets are preprinted, and an additional cross reference to the transaction is necessary. This field is not displayed or acted upon by the 8000 computer.

Field 63: Percent Full: 4 digits - format XXXX

Percent full may be manually entered by the driver following the printing of the delivery ticket and prior to the next delivery. Its intended purpose is to allow the host system a means to correct its degree-day system. The field is general purpose and not limited to percent values. The actual gallons in the tank, or even a pre-designated code may be entered. This field is written to the SD card by the 8000 computer.

Field 64: Tank Number: 10 digits - format XXXXXXXXXX

Tank number may be entered by the driver and may be used in a situation where one customer has more than one tank. This field is written to the SD card by the 8000.

Field 65: Alert Code: 2 digits - format XX

The alert code is manually entered by the driver after a delivery ticket has been printed, or during a load operation. The alert code is a general-purpose field for use by the host computer. Its purpose is to allow the driver a means to alert the host computer of an abnormal situation during a delivery or load operation, but is not limited to this use. It is up to the office to determine what the two numbers signify. This field is written to the SD card by the 8000 computer.

Examples:

- 01 - tank not full
- 02 - customer not home
- 03 - fill pipe clogged
- 04 - equipment problems

Field 66: Quantity Loaded: 6 digits - format XXXXXX

Quantity loaded is manually entered by the driver during a load operation and represents the amount dispensed into the truck. This field is written to the SD card by the 8000 computer.

Associated fields are:

- 2 load location
- 3 product code

Field 67: Card Serial Number: 6 digits - format XXXXXX

This field is written to the SD card by the host computer.

Padding: 22 digits : Fill the padding field with 0's.

Field 68: Latitude: 9 digits – Format DDMMmmmmN (ex: 32471234N)

Field 69: Longitude: 10 digits – Format DDDMMmmmmE (ex: 097471234N)

If the 8000 is capable of reading data from a GPS it will be written by the 8000 to this field. The RoadWarrior will read and write GPS coordinates in this format.

The format is Degrees Minutes Decimal (**not** Decimal Degrees)!

DDMMmmmmNDDDDmmmmW

DDD/DD = Degrees	[90 to 90, 0 to 180]
MM = Minutes	[00 to 59]
mmmm = Fractional Minutes	[0000 to 9999]
N = Latitude Hemisphere	[N or S] [N=+ S=-]
W = Longitude Hemisphere	[E or W] [E=+ W=-]

The GPS format is based on the NMEA specification of the Latitude and Longitude data as received from the sensor via the \$GPGGA message. Example:

\$GPGGA,092750.000,5321.6802,N,00630.3372,W,1,8,1.03,61.7,M,55.2,M,,*76

The Latitude is: 5321.6802,N

The Longitude is: 00630.3372,W

As written to the SD File: "53216802N006303372W"

Lat/Long Notes:

- Decimal Degrees (the format used by Google Maps, MapPoint, and most mapping software) *must be converted* from Decimal Degrees (DD) to Degrees Minutes Decimal (DMD). Example:
42.512047,-71.034106 (DD) = 42307228N071020464W (DMD)
- Omit all decimal and comma characters separating the minutes and fractional minutes when writing latitude and longitude to the SD File.
- Use the appropriate 'NSWE' character instead of a negative sign.
- The GPS information is only present in a very few versions that are custom modified to include GPS information.
- MID:COM uses only Garmin GPS units custom modified for use with the MID:COM 8000. Contact MID:COM for more information.

CRLF Field:

As noted elsewhere, we recommend that carriage-return linefeed characters (CRLF) be written to this field. This combination allows text editor programs to display the SD data file in a human readable manner.

COMLINK Data Files

MID:COM 8000/COMLINK File Format For Fleet Fuel Deliveries

A MID:COM 8000 running a COMLINK version of software typically uses the standard 8000 file format with a few variations. In a standard 8000 application, the Databank is typically loaded with many customer records and a small number of blank records for unscheduled deliveries. In a COMLINK application the individual vehicle deliveries are written to blank records, and therefore it's necessary to load as many blanks as there will be vehicles to be filled in a particular shift. The blank records need only to have a "4" in the first status byte, and all the rest of the field can be zeroes.

Customer Data Format:

The only difference in the customer data record to the 8000 is in the status bytes:

- STATUS BYTE 1: Initialize to "1". It will be set to "0" when the transaction is complete and the record written back to the card.
- STATUS BYTE 2: Initialize to "0".
- STATUS BYTE 3: Initialize to "F" or to "0".
 - "F" causes the Fleet Delivery Y/N selection to default to "Y".
 - "0" causes the Fleet Delivery Y/N selection to default to "N".
- STATUS BYTE 4: Initialize to "0".

Delivery Record Format: (Used Blank Record)

The delivery record format uses a small subset of the customer record. Referring to the format listing, the unused fields will be returned with zeroes.

The following fields are modified from their standard definition for COMLINK Data:

Comlink Field 1: Card Status: 4 digits

Byte 1: This byte is changed to "0" to indicate a delivery has been made.

Byte 2: This byte remains at "0".

Byte 3: This byte will be a "0" or an "F" based on what was in the source record.

Byte 4: This byte will be one of the following:

 "F" indicating this is a Fleet Vehicle fill record (or a Button Read)

 "X" indicating this is a Summary Fleet record for a sequence of Vehicle fills

 "0" indicating a non-Fleet delivery.

Comlink Field 8: Vehicle Fill Button ID: 20 digits

As read from the Dallas iButton.

Comlink Fields 9-10: Vehicle Fill Vehicle ID (Button Text): 20 digits + 20 digits

This is the optional number programmed into the button and may be up to 40 digits long, occupying all of both Fields 9 and 10. The number is left justified and will fill Field 9 and then start filling Field 10 from the left when digit count exceeds 20. The data will end with a "!" for an end-of- file mark. If non-programmable or un-programmed buttons are being used, Field 9 will contain "0!".

(continued)

Comlink Field 33: Vehicle Fill Volume: 8 digits

This is the amount delivered to the vehicle. It is right justified in the Field and has an implied decimal yielding a volume in tenths.

Example: 00001213 ==> 121.3

Note: Field 34 (the Net Volume Field) in the Fleet Summary will contain the total of the Vehicle Fill Volumes for a fleet.

Comlink Field 36: Comlink Sequence Number: 6 digits

The sequence number is incremented each time a record is written to the file.

Therefore, the Fleet Summary record will have a sequence number that is one greater than the last Vehicle record of the fleet.

Comlink Field 55: Vehicle Fill Fleet Start Time: 7 digits (6+1)

The time the button for the Vehicle fill is read. The format is HHMMSS with the last digit in the field not being used (but set to a '0').

Comlink Field 56: Vehicle Fill Fleet Stop Time: 7 digits (6+1)

The time when the Vehicle fill is over and waiting for the next button read. The format is HHMMSS with the last digit in the field not being used (but set to a '0').

Comlink Delivery Records

There are 5 types of delivery records in a Comlink SD File – the Card Status field (bytes1-4) is used to tell them apart:

Card Status	Description
1---	Undelivered Customer
4---	Undelivered Blank Delivery
0--X	Delivered Fleet Summary
0--F	Delivered Vehicle Fill
0--0	Delivered non-Fleet Delivery

- There will be one or more '0--F' records for each '0--X' record.
- The '0--X' record will be written to the file at the beginning of the vehicle fills for the fleet, and updated at the end of all of the vehicle fills for the fleet.
- The '0--X' and '0--0' records will be written to the selected customer record (or the first available blank record if delivering to a blank account), however the '0--F' records will be written to the first *available blank account record starting at 1000 records from the end of the undelivered blank account records in the file.*
 - It is therefore necessary to search the entire file for all delivery records matching any delivered card status: '0--X', or '0--F', or '0--0'

SD File Tax and Discount Calculations:

Taxes:

The standard MID:COM 8000 computer is capable of computing, printing, and writing to the datacard up to 20 different individual taxes. These taxes may be applied in different combinations depending on which apply to a particular customer. The information below explains how the taxes are generated and used by the 8000.

The MID:COM 8000 uses the concept of "Tax Codes" to determine how one or more taxes are applied to a delivery. Each of the possible 20 tax codes (00 – 19) selects one or more of the possible 20 individual tax rates that were preloaded into the 8000 via a "Master" tax datacard. Once these taxes are loaded, they do not have to be reloaded unless the rates change or more need to be added. Taxes can be loaded at the factory or a master tax file can be generated by the host and written into a datacard for on-site loading into the 8000.

If no tax code information is loaded into the 8000, only tax code 00 has any meaning and any other tax code selection will compute nothing. Tax code 00 is reserved to select the single tax rate that can be manually entered or appears in fields 12 and 13 on the datacard. Note from the datacard field definitions that if field 12 is "C", then field 13 changes from a tax rate to a tax code, and in that case, tax code information must be loaded into the 8000 for that code to work.

The codes are loaded into the 8000 by first generating the tax codes, then loading them into a datacard, and then downloading the card into the 8000. This is done only when initially installed or when the rates or codes change.

Generating Tax Codes

The MID:COM 8000 computes taxes the same way you would on paper or with a calculator. Once the number of gallons is known and the raw product cost computed, the 8000 computes, prints, and writes to the datacard, each tax in the order determined by the tax code.

The order of computation is important since the 8000 has the ability to compute a tax on the subtotal of the product cost and one or more other taxes, or in other words, "Tax A Tax".

Whether or not a tax is applied to a subtotal is part of the information loaded into the 8000. The following is a step-by-step approach to generating tax codes. Examples are included for clarification.

1. Determine all tax rates that may apply to any given delivery. The information needed here is:

A. Tax method - percent of product cost or dollar per gallon (% or \$)

B. Tax Rate – 00.0000 to 99.00000.

Note 5.7% = 05.7000 5.7 cents/gallon = 00.0570

C. How applied – Tax on subtotal or not (Y or N)

D. Tax label – Sales tax, excise tax, road tax, more tax, etc.

Up to 14 characters may be used and they will print on the ticket.

2. Compile a list of the tax rates using the general format below, numbering from 1 up to 19. The order here is not important.

CAT#	Label	Method/Rate/Applied	Comment
1	Excise Tax	\$00.1250N	12.5 Cents/gallon – not on subtotal
2	More Tax	%05.7000Y	5.7 percent – applied to subtotal
3	Sales Tax	%08.5000N	8.5 percent – not on subtotal
4	Road Tax	\$00.2200N	22 cents/gallon – not on subtotal
5	Tax	\$00.0000N	no tax situation - \$ or % maybe used

Note that only 19 rates, rather than 20 are allowed here. This is because rate 0 is actually the single tax rate from field 13 of the datacard.

After a tax is computed and printed on the ticket, it is written to the datacard into the tax category field with the corresponding number. For example, the sales tax amount would be written to field 38, tax category 3.

3. Compile a list of tax codes, numbering from 01 up to 19. (Code 00 reserved) The codes generated here determine which of the above rates are applied to the delivery. The order in which the various rates are applied is important in setting up the code. If a tax is to be applied to a subtotal, it must appear immediately after the tax rate(s) on which it will apply.

Code	Delivery Type	Rates Applied	Comment
01	Resident Heat	1,3	Excise and sales tax
02	Commercial Heat	1,2,3	Excise, more, and sales tax
03	Motor Fuel	3,4	Sales and road tax
04	Farm Diesel	5	No tax

At this point, the necessary information to program a master tax datacard has been compiled and now must be put into one of two formats shown below, to be loaded onto a datacard. The first format is used by “BCMCIN10.EXE” and must be in a file called MASTER11.DAT. The second format is necessary when loading the card through custom software employing the single letter commands that control the datacard interface adapter.

(Refer to the instructions for the cybercard interface adapter for more information.)

BCMCN10.EXE actually converts the first format to the second, prior to transmission. Note that although the second format is printed 64 columns wide, it is actually a single string of characters, starting with a "T" for tax, and ending with the | (Pipe).

Master11.DAT The format of Master11.DAT (see sample file) consists of 3 groups of 20 lines each, representing the rates, labels, and code assignments generated above. Exact field length must be observed. Note that the label fields are 15 characters long but the last character (#15) will be truncated, and only the first 14 will print on the ticket. The last character may therefore be anything including a space.

MASTER11.CRD

The format of Master11.CRD (see sample file) is the final product before transmission to the datacard. It consists of 2561 bytes divided into 5 blocks of 512, plus the pipe. Each of the 3 groups from the previous format start on a 512 bytes boundary. Note that only the "T" at the start of the first block has any significance, and the rest of the 511 bytes may be any character.

The "T" tells the 8000 that this is a "Tax" datacard.

Below are two examples of how the sample taxes above would compute, print, and be written to the datacard.

Example 1. Using tax code 01 – Datacard field 12 = "C" field 13 = 010000

Gallons Start 0.0
Gallons Finish 245.0
Price/Gallon 1.295
Product Cost 317.28
Excise Tax 30.63 (245.0X\$00.1250) field 37 Tax Cat.1 0030.63
Sales Tax 26.97 (317.28X08.5000%) field 39 Tax Cat.2 0026.97
Total Cost 374.88

Example 2. Using tax code 02 – Datacard field 12= "C" field 13 = 020000

Gallons Start 0.0
Gallons Finish 245.0
Price/Gallon 1.295
Product Cost 317.28
Excise Tax 30.63 (245.0X\$00.1250) Field 37 Tax Cat.1 0030.63
More Tax 19.83 ((317.28+30.63) x 05.700%) Field 38 Tax Cat.2 0019.83
Sales Tax 26.97 (317.23 x 08.5000%) Field 39 Tax Cat.3 0026.9713

Note how "More Tax" was applied to the subtotal of the Product Cost and Excise Tax.

Discounts

Two types of discounts are allowed and both may compute either as a percent of product cost, or dollars per gallon. Discount "A" is a "Quick Pay" discount and is always printed as the last line of the ticket. The rate and whether it is % or \$/gallon, as well as the number of days to pay, can be entered during setup of the 8000 computer. When not using a datacard, this discount will compute and print on the ticket for all deliveries if it was enabled during setup, and thus can selectively apply different discounts to different customers, or apply no discount at all. (See datacard field descriptions). Printed as the last line on the ticket, this discount appears just below "Total Cost" and is not deducted from the total cost.

Discount "B" is computed the same as discount "A", but it is printed in the ticket just below "Product Cost" and is deducted from product cost before any taxes are applied. This discount's use is for the "Preferred Customer" since it is the equivalent of charging a lesser price per gallon.

CUSTOMER WORKSHEET

MID COM TAX SHEET FOR CUSTOMER:

TAX NAME TAX RATE TAX CODE (WILL BE ASSIGNED AT FACTORY IF LEFT BLANK)

1. CAN ANY OF THESE TAXES BE COMBINED? IF YES, PLEASE GIVE
EXAMPLES (SEE SAMPLE SHEET ATTACHED).

2. ARE ANY OF THESE TAXES APPLIED AS TAX ON TAX? IF YES, PLEASE GIVE
EXAMPLES (SEE SAMPLE SHEET ATTACHED).

SAMPLE BASE ON THE FOLLOWING TABLE AND A 100 GALLON DELIVERY AT A
BASE PRICE OF \$1.00 PER GALLON

TAX NAME TAX RATE TAX CODE (WILL BE ASSIGNED AT FACTORY IF LEFT BLANK)

TOWNLIN SALES 5% 01

DUCAN SALES 4.25% 02

STATE EXCISE GAS \$.03 03

FEDERAL EXCISE GAS \$.07 04

COMBINATIONS CAN BE 01 ONLY OR 02 ONLY 01,03 & 04 OR 02, 03 & 04

SPECIAL IS APPLYING STATE EXCISE FIRST THEN SALES TAX. FEDERAL
EXCISE TAX IS INDEPENDENT.

SAMPLE:

GAS DELIVERY IN TOWNLIN COUNTY OF 100 GALLONS AT \$1.00 PER GALLON.

100 GALLONS x \$1.00 = \$100.00

STATE EXCISE OF \$.03 PER GALLON = \$ 3.00

ADD \$100.00 + \$3.00 = \$103.00

SALES TAX OF 5% ON \$103.00 = \$5.15

FEDERAL EXCISE OF \$.07 PER GALLON = \$7.00

INVOICE TOTAL IS:

\$100.00 + \$3.00 + \$5.15 + \$7.00 = \$115.15

SD TAX FILES, INCLUDING STANDARD AND EXPANDED FILE FORMATS:

An explanation for creating a Tax Code file for the SD memory card, including both Standard Tax File and Expanded Tax File formats, follows.

INCLUDED SAMPLE TAX FILES:

8000 SD Tax File - SD Expanded - Sample v1.00.str
8000 SD Tax File - SD Standard - Sample v1.00.str
8000 Tax File - Cybercard Expanded - Sample v1.00.dat
8000 Tax File - Cybercard Standard - Sample v1.00.dat

SD Tax Code Files, Tax Formats, and Creation instructions

This documentation is to be used as an aide to the programmer developing software to create a tax code file to be copied to an SD memory card and loaded into the Mid:Com 8000 Computer.

The Mid:Com 8000 Computer has the capability to use tax codes, which makes it possible for a particular delivery to have more than one tax rate, both dollars (cents) per gallon and percent taxes, computed on the delivery ticket and stored to the SD memory card. These tax codes are loaded into the Mid:Com 8000 Computer and they are stored there. The tax code information is stored in a file that must be copied (or drag and dropped) to the SD memory card. This document is an aide in creating a program to create this tax code information file.

A Mid:Com 8000 computer will use one of the two formats of this tax code information file. The two formats are the "Standard Tax Code File Format" and the "Expanded Tax Code File Format". Whether the Mid:Com 8000 computer uses the standard tax code format or the expanded tax code format is function of which software version is running in the Mid:Com 8000 computer. Generally, any Mid:Com 8000 Computer software version number which includes a capital letter "T" (without the quotation marks) in the version number require the expanded tax code file format. If no "T" is present in the software version number, then the standard tax code file format is required. The software version number is visible on the first screen on the Mid:Com 8000 after power up, and again on the third screen. It is important to know your software version number so you should keep a record of this version number. Both of the tax code file formats will be discussed here.

Both tax code file formats utilize three groups of information, which must be written to a file to be loaded into the SD memory card. These three groups of information are: the tax rates, the tax labels, and the tax code combinations. The tax rates are the actual tax rates in either dollars (and cents) per gallon or percent mode. The tax labels are the text, which is printed on the delivery ticket associated with each tax rate. The tax code combinations are the combinations of the individual tax rates that are to be used for a particular tax code number.

The Mid:Com 8000 Computer system uses the data in the SD memory card in blocks of 512 characters at a time. Because of this fact, the data written to the SD memory card often requires "padding" characters added to the data in certain places.

THE STANDARD TAX CODE CARD FORMAT: (20,20,100)

The standard tax code format is a format that consists of 20 possible tax rates, 20 possible tax labels, and 100 possible tax code combinations. It will be helpful to print out the file named "8000 TAX FILE - CYBERCARD STANDARD - SAMPLE V1.00.DAT" during this discussion. The "8000 TAX FILE - CYBERCARD STANDARD - SAMPLE V1.00.DAT" file is an ASCII character text file that can be viewed and printed with almost any word processor or editor program.

Notice that this file consists of three parts:

The first part consists of twenty fields of 8 characters each. These first twenty fields of 8 characters each constitute the tax rates. The first character of each line is a percent symbol or a dollar symbol. The next six characters are the numbers corresponding to the actual tax percent or dollars (cents) per gallon rate. The last character in each line is an alpha character, which determines further how the tax is applied. The first tax rate is assigned as rate 00 and it is always all zeroes for the numbers. The first character may be either \$ or %, it does not matter. The last character may be Y or N. The next rate is assigned as rate 01 and is the actual first useable tax rate. This actually leaves us with 19 useable tax rates, 01 through 19, not 20 as previously stated. The next tax rate is assigned as rate 02, etc.

The next twenty fields are all 15 characters long. These twenty fields are the tax label information. The first tax label corresponds to tax rate 00, which is not used, so the label here will never be seen, but a 15 character label must be present here. The next tax label corresponds to tax rate 01, and so on, up to 19. Again, there are actually 19 useable tax labels, one for each tax rate.

The next 100 fields are the tax code combination lines. These 100 fields are all 40 numeric characters long. The first tax code combination field is always 40 zeroes. This is used for tax code 00, which means that the Mid:Com 8000 is not to use a tax code for this particular delivery, it should use a single tax percent or cents per gallon from the tax method and tax rate fields on the customer memory card.

SD Tax File Standard Format - Programming

The program which creates a tax code file for copying to the SD memory card must create a file with these three groups of information, as well as the complete first record which will be described below, as well as padding characters, where required. The exact requirements are listed below:

1. The program must first create a 512 character "dummy" record in the file. The first character of this dummy record must be a capital letter "T" (without the quotation marks). This will inform the Mid:Com 8000 that this particular SD memory card is a tax code card. The program must write the capital letter T and then 511 more characters to the file. The 511 characters after the T can be any alphabet or number character, but they must be included in the file.

2. The program must then add to this file, the 20 tax rates. The tax rates of, 8 characters each, are all strung together in the file, and with no separators or delimiters permitted. The tax rates must each include the following items:

A.) A percent symbol or a dollar symbol, to indicate whether the following rate is either a percent tax or a dollars per gallon tax.

B.) Six digits of the actual rate, with no decimal point, but one is implied between the second and third digits. I.e.: 006000 is 0.6 percent or 0.60 dollars (60 cents) per gallon, depending upon the first character. (% or \$)

C.) A tax computation identifier, to indicate whether or not this tax is to be applied to the sum of the product cost and previous taxes ("Y") or whether this tax is not to be applied to the sum of the product cost plus previous taxes ("N"). No carriage returns or line feed characters are permitted in this section of the file.

For example: the tax rate field of %070000N would indicate a tax rate of 7 percent, which is not to be applied to the sum of the previous taxes, it is only to be applied to the product cost.

This section of the file must be 160 characters (the 20 rate fields times 8 characters per rate) of the 512 characters required for this "block" of information. The remaining 352 (512-160) characters must then be written to the file to "pad out" this "block" to 512 characters. The 352 characters of padding may be any characters.

3. The program must then add to this file the 20 tax labels. There must be 20 tax labels and all are 15 characters in length. The tax label information is again all strung together, with no separators or delimiters permitted. This tax label information should total 300 characters (20 labels times 15 characters per label) of the total 512 characters required for this block of data. The program must then write 212 (512-300) characters of padding to the file to bring the total for this block up to the required 512 characters. The 212 characters of padding may be any characters.

THE EXPANDED TAX CODE CARD FORMAT: (100,100,100)

The expanded tax code format consists of a format in which there are 100 possible tax rates, 100 possible tax labels, and 100 possible tax code combinations. It will be helpful to print out the "8000 TAX FILE - CYBERCARD EXPANDED - SAMPLE V1.00.DAT" file during this discussion. The "8000 TAX FILE - CYBERCARD EXPANDED - SAMPLE V1.00.DAT" file is an ASCII character text file that can be viewed and printed with almost any word processor or editor program.

Notice that this file consists of three parts:

The first part consists of 100 fields of 8 characters each. These first 100 fields of 8 characters each constitute the tax rates. The first character of each line is a percent symbol or a dollar symbol. The next six characters are the numbers corresponding to the actual tax percent or dollars (cents) per gallon rate. The last character in each line is an alpha character, which determines further how the tax is applied. The first tax rate is assigned as rate 00 and it is always all zeroes for the numbers. The first character may be either \$ or %, it does not matter. The last character may be Y or N. The next rate is assigned as rate 01 and is the actual first useable tax rate. This actually leaves us with 99 tax rates, 01 through 99, not 100 as previously stated. The next tax rate is assigned as rate 02, etc.

The next 100 fields are all 15 characters long. These 100 fields are the tax label information. The first tax label corresponds to tax rate 00, which is not used, so the label here will never be seen, but a 15 character label must be present here. The next tax label corresponds to tax rate 01, and so on, up to 99. Again, there are actually 99 useable tax labels, one for each tax rate.

The next 100 fields are the tax code combination lines. These 100 fields are all 40 numeric characters long. The first tax code combination field is always 40 zeroes. This is used for tax code 00, which means that the Mid:Com 8000 is not to use a tax code for this particular delivery, it should use a single tax percent or cents per gallon from the tax method and tax rate fields on the customer memory card.

SD Tax File – Expanded Format Programming:

The program which creates a tax code file for copying to the SD memory card must create a file with these three groups of information, as well as the complete first record which will be described below, as well as padding characters, where required. The exact requirements are listed below:

1. The program must first create a 512 character "dummy" record in the file. The first character of this dummy record must be a capital letter "T" (without the quotation marks). This will inform the Mid:Com 8000 that this particular SD memory card is a tax code card. The program must write the capital letter T and then 511 more characters to the file. The 511 characters after the T can be any alphabet or number character, but they must be included in the file.

2. The program must then add to this file, the 100 tax rates. The program must string 50 of these tax rates, of 8 characters each, together, with no separators or delimiters permitted. The tax rates must each include the following items:

A.) A percent symbol or a dollar symbol, to indicate whether the following rate is either a percent tax or a dollars per gallon tax.

B.) Six digits of the actual rate, with no decimal point, but one is implied between the second and third digits. I.e.: 006000 is 0.6 percent or 0.60 dollars (60 cents) per gallon, depending upon the first character. (% or \$)

A tax computation identifier, to indicate whether or not this tax is to be applied to the sum of the product cost and previous taxes ("Y") or whether this tax is not to be applied to the sum of the product cost plus previous taxes ("N"). No carriage returns or line feed characters are permitted in this section of the file.

For example: The tax rate field of %070000N would indicate a tax rate of 7 percent, which is not to be applied to the sum of the previous taxes, it is only to be applied to the product cost.

This section of the file must be 400 characters (50 rates times 8 characters per rate) of the 512 characters required for this "block" of information. The remaining 112 (512-400) characters must then be written to the file to "pad out" this "block" to 512 characters. The 112 characters of padding may be any characters.

The program must then repeat the above steps for the remaining 50 tax rates, again, stringing them together and then adding 112 characters of padding and writing to the file.

The program must repeat this process again, using 34 more of the tax label fields again, and padding with 2 padding characters. This will have used up 68 of the 100 fields of tax label information. There must be 100 tax label fields total, so we must have 32 tax label fields left (100-68).

4. The program must then add to this file the tax code combination instructions. The tax code combination instructions are 100 sets of 40 digit fields. The 40 digits are the particular tax rate assignment numbers previously listed in the file, that is, tax rates 01 through 99. So the 40 digit numbers are the tax rates which are to be applied for any particular tax code.

01030597000000000000000000000000000000000000

000.

31

5. There will then be 4 fields of tax code combinations information left to be written to the file. The program must string these together as well, with no separators or delimiters permitted. This will total 160 characters (4 fields times 40 characters per field.) The program must then write 352 characters (512 - 160) of padding to the file to fill this 512 character block. The 352 characters of padding may be any characters.
6. The program must then write a pipe character to the file. The program may then close the data file.
7. The completed Tax Code File is now ready to be copied or “drag and dropped” into the SD memory card.

The file “8000 SD TAX FILE - SD EXPANDED - SAMPLE V1.00.STR” is an example of an expanded tax code format file ready to be “drag and dropped” into a SD memory card.

Note: One option for the programmer is to write 2 fewer padding characters at each place where padding is required, and then add a carriage return and a line feed character as the missing 2 characters. This will make the resulting file easier to read but will still maintain the required 512 characters per block or data.

THE JUMBO TAX CODE CARD FORMAT: (500,500,500)

The jumbo tax code format consists of a format in which there are 500 possible tax rates, 500 possible tax labels, and 500 possible tax code combinations.

The jumbo tax code format is only valid for the RoadWarrior computer, and requires the "RoadWarrior File Utility" to read the tax file.

Notice that this file consists of three parts:

The first part consists of 500 fields of 8 characters each. These first 500 fields of 8 characters each constitute the tax rates. The first character of each line is a percent symbol or a dollar symbol. The next six characters are the numbers corresponding to the actual tax percent or dollars (cents) per gallon rate. The last character in each line is an alpha character, which determines further how the tax is applied. The first tax rate is assigned as rate 000 and it is always all zeroes for the numbers. The first character may be either \$ or %, it does not matter. The last character may be Y or N. The next rate is assigned as rate 001 and is the actual first useable tax rate. This actually leaves us with 499 tax rates, 001 through 499, not 500 as previously stated. The next tax rate is assigned as rate 002, etc.

The next 500 fields are all 15 characters long. These 500 fields are the tax label information. The first tax label corresponds to tax rate 000, which is not used, so the label here will never be seen, but a 15 character label must be present here. The next tax label corresponds to tax rate 001, and so on, up to 499. Again, there are actually 499 useable tax labels, one for each tax rate.

The next 500 fields are the tax code combination lines. These 500 fields are all 60 numeric characters long. The first tax code combination field is always 60 zeroes. This is used for tax code 000, which means that the Mid:Com RoadWarrior is not to use a tax code for this particular delivery, it should use a single tax percent or cents per gallon from the tax method and tax rate fields on the customer memory card.

SD Tax File – Jumbo Format Programming:

The jumbo tax code format is only valid for the RoadWarrior computer, and requires the "RoadWarrior File Utility" to read the tax file.

The program which creates a tax code file for copying to the SD memory card must create a file with these three groups of information, as well as the complete first record which will be described below, as well as padding characters where required, and a final pipe character at the end of the file. The exact requirements are listed below:

1. The program must first create a 512 character "dummy" record in the file. The first character of this dummy record must be a capital letter "J" (without the quotation marks). This will inform the Mid:Com 8000 that this particular SD memory card is a jumbo tax code card. The program must write the capital letter J and then 511 more characters to the file. The 511 characters after the J can be any alphabet or number character, but they must be included in the file.
2. The program must then add to this file, the 500 tax rates. The program must string 50 of these tax rates, of 8 characters each, together, with no separators or delimiters permitted. The tax rates must each include the following items:
 - A.) A percent symbol or a dollar symbol, to indicate whether the following rate is either a percent tax or a dollars per gallon tax.
 - B.) Six digits of the actual rate, with no decimal point, but one is implied between the second and third digits. I.e.: 006000 is 0.6 percent or 0.60 dollars (60 cents) per gallon, depending upon the first character. (% or \$)

A tax computation identifier, to indicate whether or not this tax is to be applied to the sum of the product cost and previous taxes ("Y") or whether this tax is not to be applied to the sum of the product cost plus previous taxes ("N"). No carriage returns or line feed characters are permitted in this section of the file.

For example: The tax rate field of %070000N would indicate a tax rate of 7 percent, which is not to be applied to the sum of the previous taxes, it is only to be applied to the product cost.

This section of the file must be 400 characters (50 rates times 8 characters per rate) of the 512 characters required for this "block" of information. The remaining 112 (512-400) characters must then be written to the file to "pad out" this "block" to 512 characters. The 112 characters of padding may be any characters.

The program must then repeat the above steps for the remaining 450 tax rates, again, stringing them together and then adding 112 characters of padding and writing to the file for each group of 50 rates. A total of 10 x 512 byte records should be written to the file.

The program must repeat this process using 34 more of the tax label fields again, and padding with 2 padding characters, until 14 such records have been written. This will have used up 476 of the 500 tax labels. There must be 500 tax label fields total, so we must have 24 tax label fields left (500-476).

4. The program must then add to this file the tax code combination instructions. The tax code combination instructions are 500 sets of 60 digit fields. The 60 digits are the particular tax rate assignment numbers previously listed in the file, that is, tax rates 001 through 499. So the 60 digit numbers are the tax rates which are to be applied for any particular tax code.

00100300529700

00.

35

5. There will then be 4 fields of tax code combinations information left to be written to the file. The program must string these together as well, with no separators or delimiters permitted. This will total 240 characters (4 fields times 60 characters per field.) The program must then write 272 characters (512 - 240) of padding to the file to fill this 512 character block. The 272 characters of padding may be any characters.

6. The program must then write a pipe character to the file. The program may then close the data file.

7. The completed Tax Code File is now ready to be copied or “drag and dropped” into the SD memory card.

Note: One option for the programmer is to write 2 fewer padding characters at each place where padding is required, and then add a carriage return and a line feed character as the missing 2 characters. This will make the resulting file easier to read but will still maintain the required 512 characters per block or data.

	Jumbo Tax File				
	500 tax rates				
	500 tax descriptions				
	500 tax code combinations				
512	header record starts with J	1 record	1		J record
5120	$50 \times 8 + 112 = 512$ (50 rates)	10 records	500	rates	500 rates
7168	$34 \times 15 + 2 = 512$ (34 labels)	14 records	476	labels	
512	$24 \times 15 + 152 = 512$ (24 labels)	1 record	24	labels	500 labels
31744	$60 \times 8 + 32 = 512$ (8 codes)	62 records	496	codes	
512	$60 \times 4 + 272 = 512$ (4 codes)	1 record	4	codes	500 codes
1	pipe char	1 char	1		pipe
45569	TOTAL BYTES				

MID:COM 8000 SD FLASH CARD ADAPTER HARDWARE INSTALLATION INSTRUCTIONS

Installing the SD Card Adapter into the MID:COM 8000 is a two part process whereby new software is downloaded first from a MID:COM cybercard and then the adapter itself is installed.

With the MID:COM 8000 off, insert the download cybercard into the Data Card receptacle, and then power the 8000 up. The MID:COM 8000 will go through it's self-test and then will show that the download is in progress. You will hear 5 beeps, then a pause, and then 5 more beeps. A few seconds later the 8000 will lock up on the "SELF TEST OK" screen. Turn the 8000 off and remove the cybercard.

The SD Card Adapter installs into the existing Datacard receptacle on the MID:COM 8000.

Orient the adapter board with the MID:COM wording up and the SD connector down and toward you. Slide the card into the 8000 keeping it against the top of the datacard receptacle. When it stops, continue to push gently and wiggle it a bit to allow the tail on the card to mate with the connector in the receptacle. Once it drops in place continue to push and seat it firmly all the way in.

Remove the backing from the panel overlay and place over the SD socket. Press firmly around the overlay.

When using SD cards remember to insert face down and push in gently until the card stops.

SD FILE COMPARISON TO CYBERCARD DATACARD FILE:

The SD Flash Card replaces the original MID:COM Databcard (Cybercard) and allows the 8000 to access up to 50,000 customer records. The possible large file size and method of writing and reading the cards requires that the file layout be slightly different than previous specifications for the cybercard (or databcard). Below are the highlights of the new format. This discussion assumes you are already familiar with the present MID:COM 8000 file structure.

All of the field definitions and field lengths as defined in CARDEF.XLS are unchanged. Also, any fields redefined and used for other purposes in custom programs are also unchanged. Therefore there is no change in the data generated to build the file, or the in data returned from the 8000.

The MID:COM Cardbox (Databcard Interface Adapter) and Interface Software (MID:COM Databcard Control Program Version 2.2 and Version 2.7) will no longer be used. The Databcard Control Program required that records be delimited with a semicolon and each field delimited with a Carriage Return (CR) followed by a Line Feed (LF). This is no longer the case with the SD Card. All records and fields are contiguous without delimiters.

The sum of all field lengths for a cybercard record is 488 bytes. Since the MID:COM 8000 record size is actually 512 bytes, 24 bytes of padding must be added to each record. Any character will do. You may want to make the last 2 characters of the padding (CR)(LF) so that the file is more readable in most editors and word processors. Since these characters are invisible in most word processors, some care is required.

MID:COM will not be supplying any PC application software for the SD Card. The various functions of the Databcard Control Program need to be implemented in the application software.

Customers using cardcrunch versions (P9XX) and wanting to switch to the new cards will have to use the standard format of 512 byte customer records. MID:COM will modify a standard version with any custom features the customer may have in their 9XX version.

VERSION HISTORY

<u>Version</u>	<u>Date</u>	<u>Author</u>	<u>Description</u>
1.00	02-24-09	BJS	Document created from other sources
1.01	04-16-10	BJS	Add notes for Jumbo Tax file for RoadWarrior
1.04	09-09-11	BJS	Add notes for Lat/Long
1.06	10-05-11	BJS	Add notes for COMLINK data
1.07	05-20-13	BJS	Update Tax & Discount Notes