

System drives:

Internal HD SCSI ID 0

Internal CDROM Q:

External HD are SCSI ID 1-4 and must be chained in order

Drives can only be addressed up to P:

Before system boots R: is created as a sprite cache

Magneto Optical drives can be used by adding `DEVICE=\DOS\35MODRV.EXE /U#` where U is the scsi ID number. Can only read up to 230MB MO disks. The drive mounts as H: unless mount partitions exceed and will mount to the last point so long as available.

External SCSI CD-Roms can be used with a modified driver to attempt to replace the internal CD-ROM. Due to the boot process however compatibility is extremely spotty and the drivers cannot be used with the MO drivers. More can be read about it and compiled from <http://ysflight.in.coocan.jp/FM/towns/cdsd/e.html>

The system boots off the IPL of the cdrom and in the boot process remounts the CDROM as CDROM: ~~as far as I can tell based off the autoexec in cdroms.~~ Inside the BIOS there are 256KB filesystems that house minimal-booting environment. It includes command.com, ip.sys, mscdex.exe, etc. These prep the internal system and hand off the environment to IPL from the CD-ROM. IPL is read by LBA and files are ordered in access for system boot. Once booted into the environment LBA no longer matters on the CD-ROM. Most CDs use Towns OS 1.1 which operates differently but I haven't used it much yet.

Hard drive partitions start at D:

Ram/monitor details can be read at http://hp.vector.co.jp/authors/VA018718/towns/moni_inf.htm
<http://www.eonet.ne.jp/~upopo/pc/towns/simm.html>

Resolution is upscaled from 24khz on the FMTowns II MA however 15khz is not scaled. This can be disabled by editing C:\TBIOS\TBIOS.INI and changing the bottom line to read "/S". Mine was set to "/D" previously. This obviously doesn't work on CD-ROM booting and later models automatically scaled 15khz to 31khz.

You can also use scanconv.exe (<http://xm7.la.coocan.jp/unz/sconv12.lzh>) to enable/disable at any time even via autoexec.bat. Using /D will cause the Window Accelerator expansion boards to not function.

Boot-up shortcuts:

Keyboard:

F# (1-4) Boot from selected floppy

H# (1-4) Boot from selected hard drive

T Turbo mode

Controller:

A+B boot menu to select boot drive and turbo mode

Boot time can be greatly reduced as well as modified by using the program Fast Towns

(<https://www.vector.co.jp/soft/towns/hardware/se052966.html>).

Fast Towns 1.6 Usage:

RUN386 FT16.EXP [-FNDJ] [-FIFOMODEHDDCSCCLTC]

- F High memory count speed, high operation mode, 8 step FIFO ON
- N Standard memory count speed, compatible operating mode, 8-stage FIFO OFF
- J Memory self-diagnosis, high-speed operation mode, 8-stage FIFO ON
- D Do not display the message.

-FIFO ON / OFF switch of only 8-stage FIFO

- MODE Switch between turbo mode and compatible mode only

-HDD sets boot device to internal HDD (ID = 0)

-CS SAVE C-MOS data to file

-CL Read C-MOS data from file

-TC diagnosis of TOWNS (model, installed memory, resolution, display of IC memory card status)

-FNDJ can only be specified on their own and are ignored if other variables are provided. If you use -F to decrease boot speed use -FIFO after or CD-ROMs no longer boot.

If you plug a hard drive from FMT into a Windows machine it can destroy the boot sector.

IPLREP(<http://xm7.la.coccan.jp/unz/iplrp110.lzh>) can restore this and make the drive bootable again.

Windows 3.1 notes:

If the system changes (new model, accelerator card, restored from a hd image etc) it's best to run winsetup from the cd-rom to re-install Windows with the proper drivers for your model. After Windows has completed installing there is a Video Tools wizard in the Towns Accessories that further completes the setup process so you can use window accelerator cards/capture cards.

Windows 95 notes:

CD Key: 12095-OEM-0004226-12233

You cannot return to Towns OS from Windows 95 normally because it takes over the boot process. You can copy REIPL from Towns OS DOS which will allow you to use "REIPL ?:" where ? is your Towns OS drive letter.

If you use SMARTDRV add /U to disable CD caching in autoexec it is necessary in Windows 95

It is possible to tri-boot the system with Towns OS, MS-DOS/Windows 3.1 and Windows 95. First setup the system with MS-DOS, Towns OS and Windows 3.1. On my system DOS & Towns OS are on D: and Windows is on a 1GB MS-DOS 512 partition. I created a new 2GB drive and formatted MS-DOS 512 to which I installed Windows 95 on. Once inside Windows 95 run the following commands from a command prompt:

```
ATTRIB -s -h -r MSDOS.SYS
EDIT MSDOS.SYS
```

Make it look like so:

[Paths]

WinDir=X:\WINDOWS

WinBootDir=X:\WINDOWS

HostWinBootDrv=X

[Options]

BootMulti=1

BootGUI=1

BootMenu=1

BootMenuDelay=5

BootMenuDefault=7

X:\ should be replaced with the drive you have Windows 95 installed to. These options will force the boot menu to open on bootup with Towns OS/MS-DOS/Windows 3.1 selected as the default. If nothing is pressed within 5 seconds boot continues otherwise you can press 1 and enter to boot Windows 95. There is also a Network option under Options which mine is set to 0 as I do not have a network card.

~~The accelerator cards need a cable connected from the FM-Towns into the card for video to function. This needs H-Sync (pin 14) from the RGB15 <-> VGA converter connected to pin 7 on the RGB15 for G-Sync. Without the cable modification the non-accelerated video isn't passed through.~~

Window accelerator FMT-3631 pinout:

01 RED

02 RED GND

03 BLUE

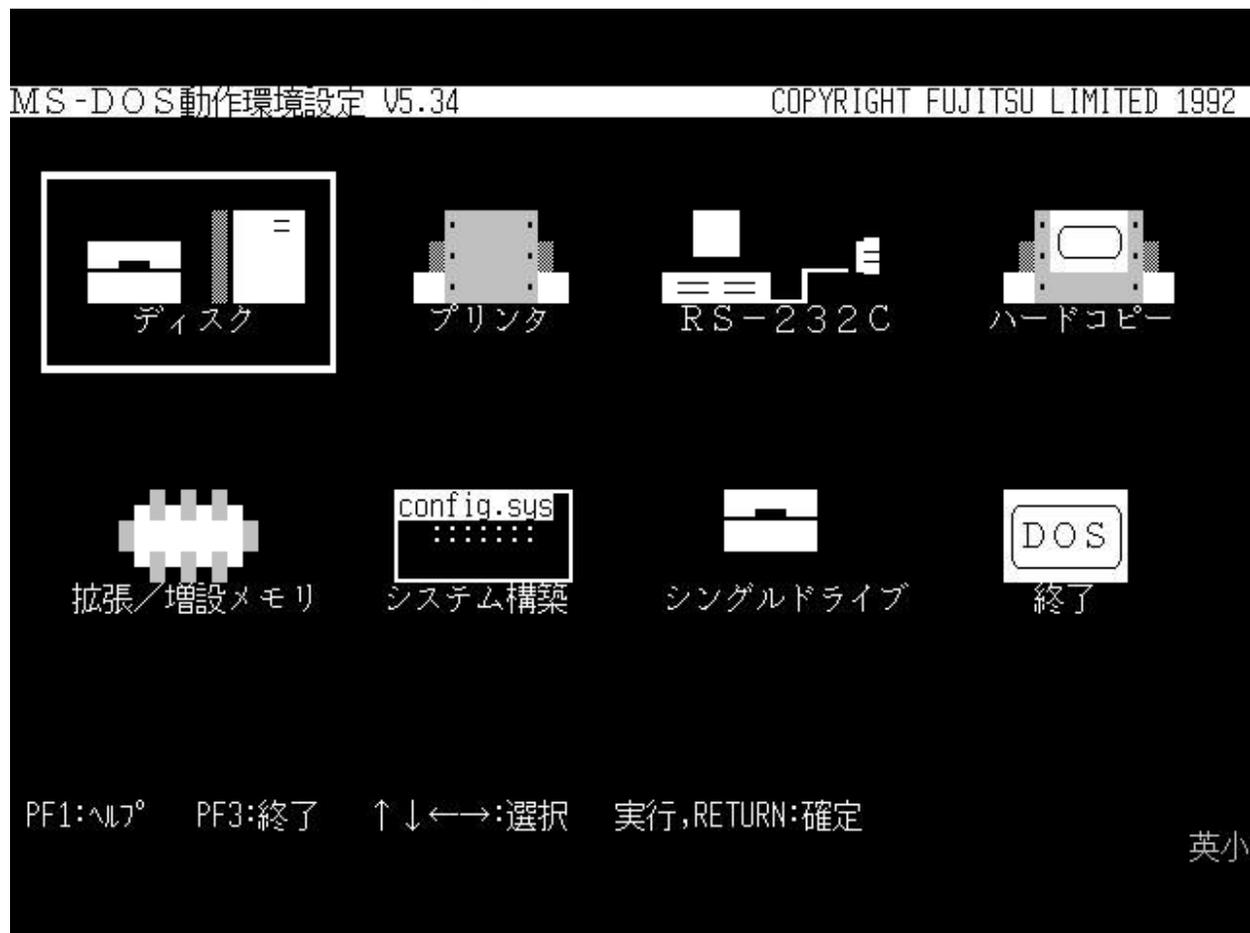
04 BLUE GND
05 GREEN
06 GREEN GND
07 GND
08 GND
09 GND
10 NC
11 NC
12 NC
13 NC
14 HSYNC
15 VSYNC

NOTE: 07-09 are guessed pins and may not be correct. This however works fine on my FM-Towns II MA from both the motherboard and Video II cards.

Configuring the system:

Drives, ram, rs232 and other portions are configured using setup2.exe. You must specify app ram + EMS & XMS ram or you cannot use more than 1MB ram. There is an English translated version of setup2 at <https://nfgames.com/forum2/index.php?topic=5357.0>. The command can

be executed from dos or a file manager.



Menu:

Disk configuration

Printer Configuration

RS-232C Configuration

Copy something?

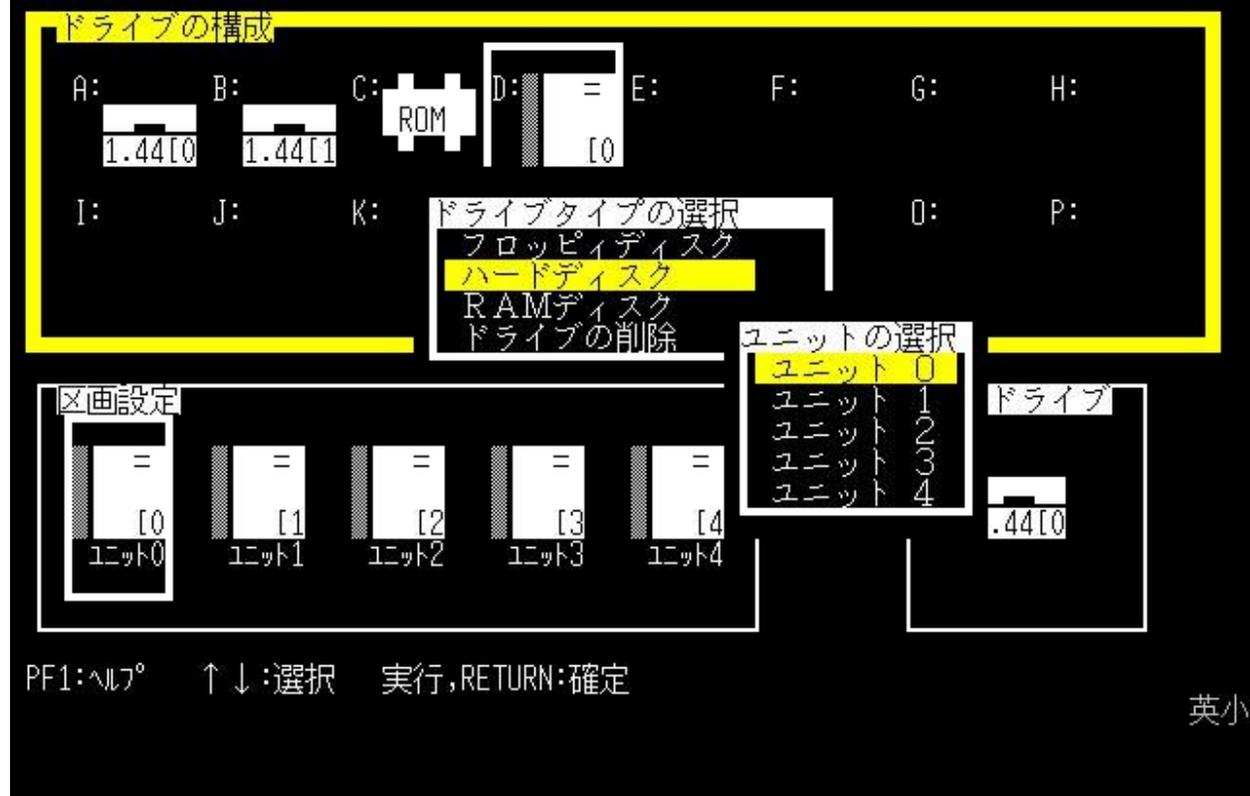
Ram configuration

Config.sys editor

External drive configuration

Disk configuration screen:

ディスク



The top window is used to set mount points, the bottom-left is used to partition up to 5 different drives and the bottom-right is to set the first boot device. **Settings are saved by pressing PF3.**

Note: ROM should remain as C:

Note: Drive 0 (the internal SCSI HD) cannot be set as a boot device. Booting from drive 0 can be forced by using the application Fast Towns (<https://www.vector.co.jp/soft/towns/hardware/se052966.html>) as well as decreasing the memory count time.

When selecting a mount point the first menu are:

Floppy drive (sub menu 1 through 4)

Hard drive (sub menu 0 through 4)

RAM disk

None

The system will not let you remove a mount point unless it is the last of the chain.

ディスク：区画設定

ユニット内の区画分布

区画 1

※	区画名	OS種別	パスワード	起動	容量(MB)	割合
	ILLUSION CITY	MS-DOS		起動	39.9+	100%

Drv.

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

設定可能容量(MB) 39.9+
ブロック数 81917

総容量(MB) 39.9+
最大空き容量(MB) 39.9+
総使用割合(%) 0.0

PF1:ヘルプ PF3:終了 ←→:選択 実行,RETURN:設定

英小

A drive can be up to 2TB in size and up to 10 partitions in total. FM Towns can only boot from a MS-DOS partition which are 128MB max however if booted from MS-DOS 6.2 MS-DOS 512 partitions can be made which support up to 2GB. OASYS requires its own two partitions. Be aware that it is a word processor so there's not much point to setting it up.

When you press enter on a numbered partition if new the screen above will pop up or a confirmation dialog asking if you wish to edit the settings (top) or delete it (bottom) first.

The columns are as follows:

Label

File system (boot partition must be MS-DOS)

? no clue I've never used it

Boot status

Size in MB

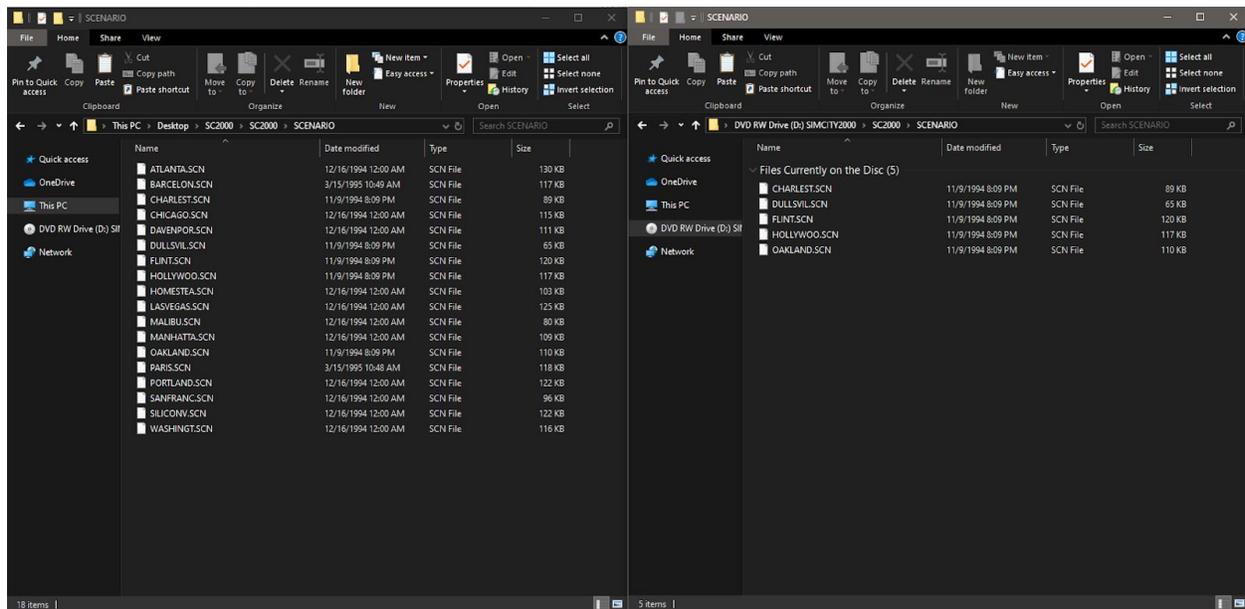
Once input press PF3 to save and PF3 to return to the mount menu. Press PF3 twice more and the system will reboot. So long as the extra partitions were specified as mount points you can now use format to use them.

Customizing ISOs:

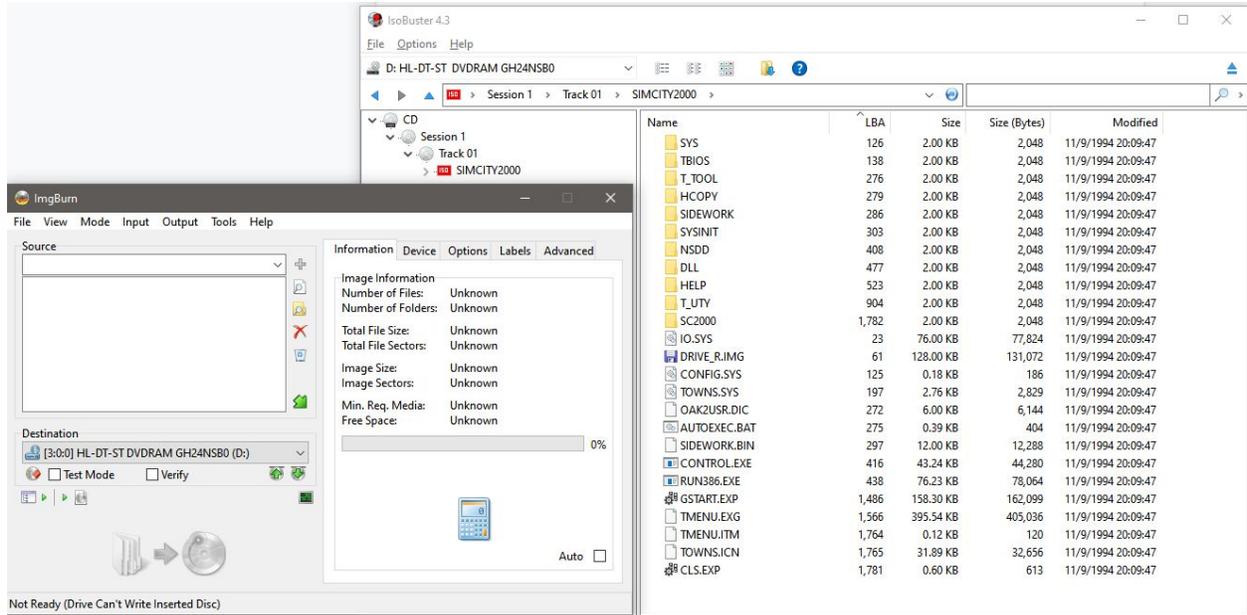
ISOs can be modified and rebuilt at-will. Required tools are ISOBuster, IMGBurn and IPL.COM/BIN.

IPL.COM/BIN have been lost to the internet however it was re-uploaded to NFGGames by AnnaWu. Big thanks!

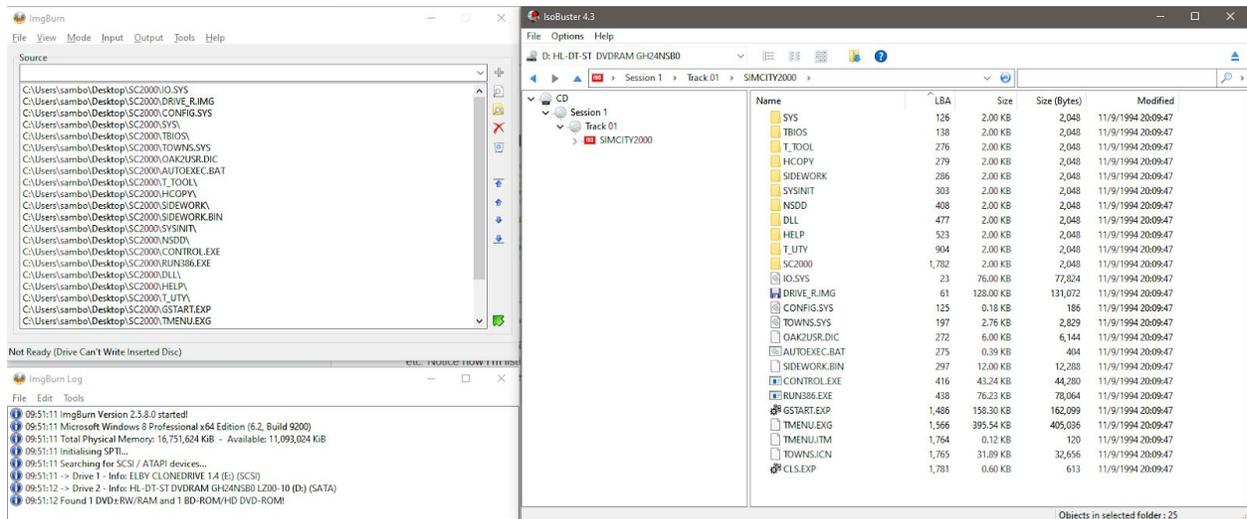
Once you have the tools installed burn the game you're wanting to recreate to a CD. Since I did this for Sim City 2000 successfully I'm using this as the example and want to add in the extra scenarios from the US release missing. First copy all the files to a folder somewhere on your computer from the CD. After this add in/modify what files you want. All I care about are missing scenarios so comparing the two folders and copying the missing files over. The left is my CD to be made and the right is the retail release:



Now that our data is ready fire up ISOBuster with the retail CD still in the drive as well as imgburn and select "Create image file from disc" in imgburn. Inside ISOBuster select the ISO track and click LBA to reorder all the files and directories by LBA order. Your applications should look like this:



Now add all the files and folders in the order of LBA number from the CD. In this case we start with IO.SYS, DRIVE_R.IMG, CONFIG.SYS, **SYS FOLDER**, **TBIOS FOLDER**, TOWNS.SYS, etc. Notice how I'm listing each file and folder in the order of the LBA number. This is extremely important to keep the exact file/folder order of the original ISO or it will not boot correctly.



Once you have ordered the files correctly create the image in imgburn and save it to your hard drive. Using IPL.COM apply the boot IPL to the iso by running:

IPL.COM IPL.BIN ISONAME.ISO

Once completed your ISO is patched and ready to be burned/used. IPL.COM does not work on modern Windows so you will need an older 32-bit version to launch it

After burning the ISO I'm greeted with the added scenarios. Hurray! (Time for some real fun?)

シナリオ選択

取消



Atlanta - UFO Invasion!! We don't know if it thinks it's being friendly or what, but it sure is making a mess of downtown!



Barcelona - Vicious terrorists detonate a nuclear device during the 1992 Global Games! Put out the fires and restore Barcelona to the beautiful land it once was.



Charleston - この海岸の街が台風に襲われました。-土壌を積み上げ、嵐を取り除き、街を再建してください。



Chicago - It is near the year 2000 and pollution stinks! Build up industry while reducing pollution.