All Drive Paks

I received a batch of cases recently from my machinist that are slightly wider than expected, meaning the pak will have a very snug fit in some CoCos. You may have to wiggle the case and apply pressure to insert the pak.

Thank you for purchasing this all new product from Roger Taylor of the CoCo community.
For upgrades, updates, news, and support files, please visit www.tandycolorcomputer.com. Have fun!

MicroSD and USB Drive Paks

Want to play a game right now and read the docs later? Sure you do! Insert the pak THEN turn the CoCo's power on.

At the "Boot Partition" prompt, enter the word 'IBI'.
That's the 3 letters I B I for Interbank Incident.

MicroSD Drive Pak

Never pull on the MicroSD card by force to remove it. Always PUSH to insert a card, and PUSH to release a card. You'll hear a click either way. A released card will PARTIALLY eject then you can pull it out safely.

The documentation for this device can be found on the included DVD in the 'CoCoNet' directory. Some basic commands are printed on the pak label for quick reference.

Your MicroSD Drive Pak is programmed with the 4D Systems R24 firmware and the CoCoNet 1.27 ROM. It runs at twice the speed of the R23 + CoCoNet 1.26 controlled paks.

Until CoCoNet 2.0 is released, the address jumper should be set to $6C.

The bonus OS-9 disks found on this device are a work in progress and do NOT contain the newest MicroSD driver that runs at x2 speed. When those disks have been rebuilt, you can find them online and replace them on your card using CoCoPak.exe or just download the new stock Drive Pak image and burn a new card.

USB Drive Pak

The CoCoNet 2.0 server is required to use this cartridge. It can be found in the CoCoNet subdirectory on the included DVD.

Some basic commands are printed on the pak label for quick reference. Use the same commands for the MicroSD Drive Pak. Refer to the CoCoNet Quick Docs file for more commands.

Until the CoCoNet 2.0 ROM is released, the address jumper should be set to $6C. The CoCoNet server should be set to 230.4 kbps.

The bonus OS-9 disks found on this device are a work in progress and do NOT contain the newest MicroSD driver that runs at x2 speed. When those disks have been rebuilt, you can find them online and replace them on your card using CoCoPak.exe or just download the new stock Drive Pak image and burn a new card.

Cable Drive Pak

The CoCoNet server is required to use this cartridge. It can be found in the CoCoNet subdirectory on the included DVD.

For all documentation and support files, please look on the included DVD or visit www.tandycolorcomputer.com. The PDF docs are on the front page of the site in the right column. You can also find CoCoNet topics on www.coco3.com.

If your PC doesn't have a DB-9 serial port but has a USB port, you can find a USB to Serial adapter at Wal-Mart or Office Depot. Some brands start at $9 up to $30 and will all do the job.

A CoCoNet 1.27 controlled Cable Drive Pak (bitbanger port) requires a 115200 bps 8-N-2 connection as of 10/12/11.
The CoCoNet 1.26 Server does not emulate the MicroSD Drive Pak.
The CoCoNet 2.0 Server is in the Alpha stage as of 10/12/11 and emulates the MicroSD Drive Pak.
A Cable Drive Pak will require CoCoNet 2.0 in order to emulate a MicroSD Drive Pak, and is pending stability tests as of 10/12/11.

CoCoNet and Drive Pak command samples and tips

All Drive Paks contain the CoCoNet firmware, so we'll talk a bit about CoCoNet first.

The CoCoNet ROM is a Disk BASIC 1.1 ROM replacement that does everything Disk BASIC already does and lots more. It is compatible with any CoCo that has Extended BASIC, and of course all CoCo 3's. All Drive Paks are compatible with any Color Computer with Extended BASIC.

For remote virtual disk access (wireless, RS-232 Pak, bitbanger, USB), you'll need the CoCoNet server running on your PC. This is a free utility available at www.coco3.com or www.tandycolorcomputer.com and other sources. Install and run the CoCoNet server on your PC.

CoCoNet will detect and use other devices such as an RS-232 Pak for accessing virtual disks on your PC, and can use your real floppy controller if you are using a Multi-Pak interface and boot up with the ROM slot switch set to your CoCoNet based Drive Pak.

A Drive Pak does not require a Multi-Pak Interface. You can use any single Drive Pak plugged directly into the expansion slot of a CoCo to give it a complete

virtual disk system whether it be wireless, USB, bitbanger cable, or MicroSD card. If you want access to your real disks and the ability to use other virtual drive systems at the same time, you'll naturally need a Multi-Pak Interface or Y-Cable.

Here's just a few things you can do using CoCoNet, some of which is automatic or done in a Plug and Play fashion.

- When you turn your CoCo on, CoCoNet will detect what paks or controllers you have inserted, then look for *.BAS or an OS-9 disk on the most significant device out of the ones present. Using a custom *.BAS program you can then launch off to whatever you want in a seamless fashion whether it be a menu of games, embedded apps, utilities, custom OS-9 builds, etc., even from the Web!
- To go to the DOS prompt instead of auto-booting, hold down the BREAK key during power-up. Devices will still be detected and configured, but you won't auto-boot.
- Enjoy fast speeds of 115200 bps for bitbanger, 115200 bps wired or wireless/bluetooth 6551 serial, and a nice 230400 bps for the MicroSD and USB Drive Paks
- Move disks and files between your CoCo and PC using a bitbanger cable, Tandy RS-232 Pak, or Deluxe Wireless RS-232 Pak
- Easily add small or huge OS-9 floppies or mass drives on the Drive Pak, and virtually unlimited 256-floppy partitions, switchable from DOS!
- Grab web files and save them to a mounted remote disk using one Disk BASIC command (an HTTP-GET front end)
- Append parameters to your request URLs to run and control web scripts and services (over bitbanger or 6551)
- Use your real floppy drives
- Mix and match any 4 drive types at once and perform all standard DOS commands between disks and virtual disks.
- Mount any Drive Pak partition from DOS using the DRIVE command and even use DSKI$/DSKO$ to access raw sectors.

On startup, CoCoNet automatically mounts and sorts each drive type for drives 0 through 3. The chosen hardware device for Drive 0 depends on your setup. If no virtual drives are detected, your real floppy controller will be the default for DRIVE 0, and the other drives will be assigned to the remaining virtual drive types.

CoCoNet then looks for a bootable disk on DRIVE 0. A bootable disk is one that contains a *.BAS program or has an OS-9 boot track (feature may not be available at the time of writing).

The CoCoNet "ROM" can be used in whatever cartridge you have that accepts a 28-pin 27-series EPROM such as the 27128.

What do you need CoCoNet for? You just have to use your imagination, like when you're looking at a set of BASIC commands and asking, "what can I do with these commands?". The short answer is: everything.

SOME COMMANDS:

When you type 'DOS', the mounted disk is probed to see if it's a bootable OS-9 disk, and if not, one of the following BASIC files will be searched for and run:

*.BAS
AUTOEXEC.BAS
MENU.BAS

DIR.BAS

Likewise, when you turn on the CoCo, the default disk in Drive 0 will boot in the same manner.

Use DOS # where # is 0-3 to boot into a disk on specific drive. Example: DOS 2

```
(list DRIVES 0-3 and their types or mounted disks)
DRIVE

(switch to FDC/real disk drive for DRIVE 0)
DRIVE 0,ON

(switch back to virtual drive 0, previous subsystem)
DRIVE 0,OFF
```

IMPORTING REMOTE PC OR WEB FILES ONTO COCO VIRTUAL DISKS:

- requires you to already have a virtual disk mounted on Drive 0, 1, 2, or 3

Use the new 'SAVE' command syntax:

```
SAVER #,"remote file","COCOFILE.DAT", Type
```

- the destination file will be saved in binary format by default if no Type parameter is specified

```
SAVER 0,"web url or PC path","COCOFILE.DAT",M
```

- file is saved to virtual DRIVE 0 as COCOFILE.DAT in binary format

```
SAVER 0,"http://www.coco3.com","COCO3.HTM",A
```

- web response file is saved to virtual DRIVE 0

Note: the SAVER command only accepts any single character or digit for the Type but the CoCoNet Server is responsible for processing the actual Type request.

BITBANGER CABLE-BASED DRIVE SYSTEM EXAMPLES:

```
(mount a web disk using the bitbanger cable)
DRIVE 0,!"FTP://RTSI.COM/RSDOS/EMULATOR/CAVE1.DSK"

(mount a PC disk using the bitbanger cable)
DRIVE 0,!"C:\MYGAMES.DSK"

(mount and boot NitrOS-9 over the serial cable)
DRIVE 0,!"HTTP://WWW.COCO3.COM/NITROS9_L2_BITBANGER.OS9"

(grab a google search listing and dump it to a remote virtual disk)
DRIVE 0,!"C:\GOOGLE.DSK" (mount a bitbanger remote disk)
SAVER 0,"HTTP://WWW.GOOGLE.COM?SEARCH=FOX%20NEWS","NEWS.HTM",A
' DO SOMETHING WITH THE FILE
OPEN "D",#1,"NEWS.HTM:0",1
CLOSE #1
```

6551 ACIA-BASED REMOTE DRIVE SYSTEM EXAMPLES:

```
(mount a virtual disk using a 6551-based pak)
DRIVE 1,@"C:\MYSTOCKS.DSK"

(mount a web disk using a 6551-based pak)
DRIVE 1,@"FTP:\\RTSI.COM\RSDOS\EMULATOR\CAVE1.DSK"

DRIVE 0,@"HTTP://WWW.COCO3.COM/COOLGAMES.DSK"
DOS (boot into OS-9 from CoCo3.com)
DRIVE 0,@"HTTP://WWW.COCO3.COM/NITROS9_L2_6551.DSK"
DOS

DRIVE 0,@"C:\GOOGLE.DSK" (mount a disk via RS-232 Pak)
SAVER 0,"HTTP://WWW.COCO3.COM/COCONET.TXT","COCONET.TXT",A
' DO SOMETHING WITH THE FILE
OPEN "I",1,"COCONET.TXT"
CLOSE 1
```

MICROSD DRIVE PAK AND USB DRIVE PAK EXAMPLES:

Mounting *named* disks and drives!!

```
(Boot OS-9 from a partition, using track 34 like a floppy)
DOS# "NAME"
```

This works on "mass OS-9 drives", "OS-9 floppies", or any special disk that has boot code on track 34

To avoid confusion, just remember that the partition and disk are the same thing.

```
(mount the 256 floppy disks in the "DOS" partition)
(Disk BASIC starts up in the "DOS" partition already, so you don't have to do this
on power-up)
DRIVE# "DOS"

(switch to the 256-disk "OS9" partition)
DRIVE# "OS9FD"

("wires up" some OS-9 drives - assign /u0-/u3 to a partition)
DRIVE# SET U0 "NITROS9" ( reference /u0 within OS-9)
DRIVE# SET U1 "OS9DATA" ( reference /u1 within OS-9)
DRIVE# SET U2 "OS9BACKUP" ( reference /u2 within OS-9)
DRIVE# SET U3 "OS9MEDIA" (reference /u3 within OS-9)

(redundant command, links the DD (/dd) device to the OS9BOOT partition)
(DD is automatically set by the 'DOS' command)
DRIVE# SET DD "OS9BOOT"

(mount disk #255 from the current partition, on Drive 1)
DRIVE 1,#255

(list partitions on the current MicroSD card)
DRIVE #?
```

```
(show the type of drive system and disk that is mounted on each Drive 0-3)
DRIVE

(mount Drive Pak disk #0 on DRIVE 0)
DRIVE 0,#0

(switch to the special 720k/single disk partition called "SYS")
(you should only mount and use disk #0 since disks 1-255 have no place here)
DRIVE # "SYS"
DRIVE 0,#0:DIR

(mount Drive Pak disk #254 on DRIVE 3)
DRIVE 3,#254

(Add a partition)
(Always back up your memory card before doing low-level operations like this)
DRIVE#+"NAME",a,b,c, d,e,f
a,b,c = 24-bit partition starting LSN
d,e,f = 24-bit partition size
You can have up to 1023 partitions of any size on each memory card!
Partition sizes can be as small as 0 bytes, 1 byte, or up to the size of the entire
memory card (minus 1024 sectors)
Partitions can be overlayed on top of others if you have a need to do so.
Partitions can overlay other partitions though this is not recommended as certain
partition management tools might be broken by this nonstandard arrangement.


(Delete a partition)
DRIVE# KILL "PART"
This leaves the partition DATA intact, but removes the reference to that partition)

(Rename a partition)
DRIVE# RENAME "OLDPART","NEWPART"

The following types of commands are mainly good for a partition manager program and
you have to manually return to the desired partition later or this can be
dangerous)
For example, if you do these but forget to switch back, and then type SAVE "MYGAME"
on accident, you could easily overwritr LSN0 or some partition table entries which
would definitely corrupt your card structure.

(switch to Direct Sector Mode - allowing DSKI$/DSKO$ to be used carefully to access
the card)
DRIVE# #0,0,0:DRIVE 0,#0  (points to the beginning of the memory card where LSN0 is
and the partition table, etc.)
DSKI$ 0,0,1,A$,B$  (read LSN0 of the card!)
{make changes to A$/B$)
DSKO$ 0,0,1,A$,B$  (write LSN0 of the card - USE WITH CARE)
(mount LSN $002000 which is where the 'DOS' partition is on the distribution card
image, in case you accidentally deleted the 'DOS' partition entry)
DRIVE# #0,32,0
DRIVE# #0,0,1:POKE53917,56:DSKINI 0 (erase the partition table)

Examples:

*     DRIVE       list mounted disks
*     DRIVE n,ON  turn on real drive (n)
*     DRIVE n,OFF turn off real drive, switch to previously mounted virtual disk
*     DRIVE n,@"ftp://rtsi.com/RSDOS/EMULATOR/CAVE1.DSK"   mounts a web disk using
```

```
6551 ACIA (requires CoCoNet applet on PC)
*     DRIVE n,!"c:\anydisk.dsk"     mounts a remote virtual disk over a bitbanger
cable (requires CoCoNet applet on PC)
*     DRIVE n           sets DRIVE n to the default drive
*     DRIVE n,#ddd      mount a MicroSD virtual floppy disk (ddd) on DRIVE (n)
*     DRIVE #?    list MicroSD Drive Pak partitions
*     DRIVE # "PARTNAME"      change DOS partition (256 uDisks)
*     DRIVE # #a,b,c          change DOS partition using 24-bit LSN (a,b,c)
*     DRIVE # FIELD #a,b,c    change partition table to 24-bit LSN (a,b,c)
*     DRIVE #



The 'OS9' partition
What is it: The primary bootable NitrOS-9 system (30mb /dd drive)
How to use it: DOS# "OS9" or DRIVE# "OS9":DOS


Other EZ-Launch OS-9 Games and App disks!!

DOS#"KQ1"   (King's Quest 1 - CoCo 3)
DOS#"KQ2"   (King's Quest 2 - CoCo 3)
DOS#"KQ3"   (King's Quest 3 - CoCo 3)
DOS#"KQ4"   (King's Quest 4 - CoCo 3)
DOS#"RIFT"  (Koronis Rift - CoCo 3)
DOS#"IBI"   (The Interbank Incident - CoCo 3)
DOS#"MICKEY"      (Mickey and Pluto Space Adventure)
DOS#"WINNIE"      (Winnie the Poo Adventure)


*
================================================================================
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OS-9 DRIVE DESCRIPTORS

/dd         type $80    OS-9 boots drive/disk, can be a floppy disk image or mass
drive
/u0         type $84    OS-9 fixed drive, can point to any partition 0-3 as defined
in LSN0 of the pak,
                              the distro pak points /u0 to the "NITRO" partition or
other primary NitrOS-9 boot drive
/u1         type $84    OS-9 fixed drive, can point to any partition 0-3 as defined
in LSN0 of the pak
/u2         type $84    OS-9 fixed drive, can point to any partition 0-3 as defined
in LSN0 of the pak
/u3         type $84    OS-9 fixed drive, can point to any partition 0-3 as defined
in LSN0 of the pak

*
* CoCoNet standard settings for the MicroSD memory card (Drive Pak)
* 24-bit LSNs are used in the code but we reserve future space for 32-bit LSNs and
card images larger than 8 GB.

*
================================================================================
==============
* MicroSD LSN0 bytes
*
```

```
* $00-$07 CARD NAME
* $08-$0B Mounted Floppies on drives 0-3 (unused at this time)
* $0C-$0F reserved
* $10,[$11,$12,$13]: LSN of partition table
* Quick Drive References (entries point to top of each partition)
* $14,[$15,$16,$17]: LSN of floppy partition (256 x 720K = 180mb)
* $18,[$19,$1A,$1B]: LSN of top of "/DD" OS-9 boot drive partition
* $1C,[$1D,$1E,$1F]: LSN of top of "/U0" OS-9 drive
* $20,[$21,$22,$23]: LSN of top of "/U1" OS-9 drive
* $24,[$25,$26,$27]: LSN of top of "/U2" OS-9 drive
* $28,[$29,$2A,$2B]: LSN of top of "/U3" OS-9 drive
* $2C-$FF available

******** Partition Entry Bytes
*
* each partition entry sector
* $00: Partition Type   0 or >127 = empty
* $01-$10: Partition Name
* $20,$21,$22: Partition Start (LSN)
* $23,$24,$25: Partition Size (sectors)

dpk_ptable_lsn    equ   $11
dpk_dos_partition equ   $15
dpk_dd_partition  equ   $19
dpk_u0_partition  equ   $1D
dpk_u1_partition  equ   $21
dpk_u2_partition  equ   $25
dpk_u3_partition  equ   $29
```