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本体ファームウェアでの起動

DIPSW をすべて OFF にした状態で、本体の標準ファームウェアで起動してみます。

コンソール接続

USB TypeA - microB ケーブル¹⁾を接続し、putty などのターミナルソフトを使用して接続します。シリアルポートの設定は下記の通り設定します。

項目	設定値
ビットレート	115.2Kbps
データビット	8
ストップビット	1
パリティビット	なし
フロー制御	なし

MA-S1xx に電源を入れると、下のようにブートローダーが起動してきます。
1秒のタイムアウト待ちがあり、その間に `Enter` を入力することでブートローダーのシェルへと移行します。

```
/dev/ttyUSB3 - PuTTY
AT91Bootstrap 3.9.1-00029-gc1b347d (Sat Jun 27 07:17:07 JST 2020)
ACT8865: changed nRSTO trigger to "OSC OK"
SF: Got Manufacturer and Device ID: 0xbf 0x26 0x41 0xbf 0x26
SF: Copy 0x80000 bytes from 0x10000 to 0x26f00000
SF: Done to load image

barebox 2020.02.0-00206-gc16226e22-dirty #98 Fri Jul 10 09:12:58 JST 2020

Board: Century Systems Gemini
AT91: Detected soc type: sama5d2
AT91: Detected soc subtype: sama5d26cu
mdio_bus: miibus0: probed
macb f8008000.ethernet@f8008000.of: Cadence GEM at 0xf8008000
atmel-ehci 500000.ehci@500000.of: USB EHCI 1.00
atmel_spi f8000000.spi@f8000000.of: version: 0x311
m25p80 m25p80@00: sst26vf016b (2048 Kbytes)
at91-twi f8028000.i2c@f8028000.of: AT91 i2c bus driver.
at91-twi fc028000.i2c@fc028000.of: AT91 i2c bus driver.
ERROR: clk: couldn't set sdmmc0_gclk clk rate to 480000000 (-22), current rate: 0
sama5d2-sdhci a0000000.sdio-host@a0000000.of: registered as emmc
emmc: detected MMC card version 5.0
emmc: Capacity: 1840 MiB
emmc: registered emmc
sama5d2-sdhci: "enable_cd" pin found, set to High.
sama5d2-sdhci b0000000.sdio-host@b0000000.of: registered as sd
ERROR: sd: no card inserted
pstore: Registered ramoops as persistent store backend
ramoops: attached 0x1000000@0x3fecc000, ecc: 16/0
malloc space: 0x27cfe500 -> 0x3fcfe4ff (size 384 MiB)
envfs: no envfs (magic mismatch) - envfs never written?
running /env/bin/init...
* mounting /dev/emmc.0 to /mnt/emmc.0 (filesystem type: fat)
* mounting /dev/emmc.1 to /mnt/emmc.1 (filesystem type: ext4)
ext4 ext40: EXT2 rev 1, inode_size 256, descriptor size 64

Hit m for menu or any other key to stop autoboot: 1

type exit to get to the menu
barebox:/
```

boot と入力することで、起動処理が行われます。
タイムアウト待ちの間にも何も入力しない場合も同様に起動処理が行われます。

```
Starting Login Service...
[ OK ] Started Deferred execution scheduler.
[ OK ] Finished Helper to synchronize boot up for ifupdown.
[ OK ] Started monitoring mobile device.
[ OK ] Finished Restore /etc/reso...re the ppp link was shut down.
[ OK ] Started System Logging Service.
[ OK ] Started Login Service.
[ OK ] Started LSB: Run /etc/rc.local if it exist.
[ OK ] Finished Restore Firewall.
[ OK ] Reached target Network (Pre).
Starting Raise network interfaces...
[ OK ] Found device /dev/ttyS0.
[ OK ] Stopped monitoring mobile device.
Starting monitoring mobile device...
[ OK ] Finished Raise network interfaces.
[ OK ] Reached target Network.
[ OK ] Reached target Network is Online.
Starting dnsmasq - A light...DHCP and caching DNS server...
Starting A high performanc... and a reverse proxy server...
Starting Network Time Service...
Starting /etc/rc.local Compatibility...
Starting OpenBSD Secure Shell server...
Starting Permit User Sessions...
[ OK ] Started monitoring mobile device.
[ OK ] Started /etc/rc.local Compatibility.
[ OK ] Started Getty on tty1.
[ OK ] Started Serial Getty on ttyS0.
[ OK ] Reached target Login Prompts.
[ OK ] Started Network Time Service.

Ubuntu 20.04.1 LTS gemini ttyS0

gemini login: [ OK ] Started A high performance...er and a reverse proxy server.
[ OK ] Started OpenBSD Secure Shell server.
[ OK ] Started dnsmasq - A lightw...t DHCP and caching DNS server.
[ OK ] Reached target Host and Network Name Lookups.
Starting WireGuard VPN(wg0) Configuration...
[ OK ] Started WireGuard VPN(wg0) Configuration.
[ OK ] Reached target Multi-User System.
Starting Update UTMP about System Runlevel Changes...
[ OK ] Finished Update UTMP about System Runlevel Changes.

gemini login: █
```

MA-S1xxへのログイン

標準で、下記の2アカウントが登録済みとなっています。

アカウント	パスワード	備考
user1	user1	一般ユーザ
root	root	管理者

“root” でログインした場合の例です。

```
/dev/ttyUSB3 - PuTTY
[ OK ] Finished Restore Firewall.
[ OK ] Reached target Network (Pre).
       Starting Raise network interfaces...
[ OK ] Found device /dev/ttyS0.
[ OK ] Stopped monitoring mobile device.
       Starting monitoring mobile device...
[ OK ] Finished Raise network interfaces.
[ OK ] Reached target Network.
[ OK ] Reached target Network is Online.
       Starting dnsmasq - A lightw...t DHCP and caching DNS server...
       Starting A high performanc... and a reverse proxy server...
       Starting Network Time Service...
       Starting /etc/rc.local Compatibility...
       Starting OpenBSD Secure Shell server...
       Starting Permit User Sessions...
[ OK ] Started monitoring mobile device.
[ OK ] Started /etc/rc.local Compatibility.
[ OK ] Started Getty on tty1.
[ OK ] Started Serial Getty on ttyS0.
[ OK ] Reached target Login Prompts.
[ OK ] Started Network Time Service.

Ubuntu 20.04.1 LTS gemini ttyS0

gemini login: [ OK ] Started A high performance...er and a reverse proxy server.
[ OK ] Started OpenBSD Secure Shell server.
[ OK ] Started dnsmasq - A lightw...t DHCP and caching DNS server.
[ OK ] Reached target Host and Network Name Lookups.
       Starting WireGuard VPN(wg0) Configuration...
[ OK ] Started WireGuard VPN(wg0) Configuration.
[ OK ] Reached target Multi-User System.
       Starting Update UTMP about System Runlevel Changes...
[ OK ] Finished Update UTMP about System Runlevel Changes.

gemini login: root
Password:
Welcome to Ubuntu 20.04.1 LTS (GNU/Linux 5.4.41-linux4sam-2020.04+ armv7l)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage
Last login: Tue Jul 21 11:57:52 JST 2020 on ttyS0
root@gemini:~#
```

1)
Androidスマートフォンの接続に使用されるものと同じです

From:
<https://ma-tech.centurysys.jp/> - MA-X/MA-S/MA-E/IP-K Developers' Wiki

Permanent link:
https://ma-tech.centurysys.jp/doku.php?id=mas1xx_ope:boot_from_emmc:start

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