

DATENBLATT GELIN 21.10 - GINZINGER EMBEDDED LINUX PLATTFORM

Zweite Generation der Ginzinger Embedded Linux Distribution. Basierend auf Mainline Linux Kernel 5.4.

1 HARDWARE-UNTERSTÜTZUNG

- NPTL (Native POSIX Thread Library)
- Compiler Optimierung: O2
- Linker Optimierung: hash=both, O1
- Konsole: automatisch (kernel argumente)

i.MX53:

- ARMv7-A
- EABI (embedded-application binary interface)
- hardfloat: vfpv3/neon (FPU Register)

i.MX6:

- ARMv7-A
- EABI (embedded-application binary interface)
- hardfloat: vfpv3/neon-fp16 (FPU Register)

i.MX6 UltraLite/ULL:

- ARMv7-VE
- EABI (embedded-application binary interface)
- hardfloat: vfpv4/neon (FPU Register)

i.MX28:

- ARMv5TEJ
- EABI (embedded-application binary interface)
- softfloat

i.MX8M:

- ARMv8-A
- Aarch64 ABI

i586:

- x86 i586

2 QT CREATOR

- qt-creator-opensource-src-4.11.2

- qt-everywhere-src-5.12.11

Kompatibel:

- Debian: 9 (LTS), 10, 11
- Ubuntu: 20.04 (LTS), 21.10 (latest)

3 GINZINGER UPDATE MECHANISMUS ^{1,2,3,4}

- ge_update_V7.10
- Einfache Erzeugung von Update-Images
- Automatische Erkennung der System-Konfiguration (system-type, ...)
- Patch- oder Full-Updates für Patch-Versions-Nummer
- Konfigurierbare Update-Regeln (down-date, re-date, up-date)

- Zusätzliche Checks
- Automatische Display-Rotation
- Unterstützung für Update von MMC/SD-Karten
- Unterstützung Kernel-Parameter für rootfs-, data- und flag-partition
- Unterstützung rootfs-Filesysteme: squashfs, ubifs, jffs2 auf ubi

- Unterstützung data-Filesysteme: jffs2 und ubifs
- Unterstützung für Update vom internen Flash (Daten Partition)
- Verwendung von squashfs statt cramfs für Update Images auf i.MX6 und i.MX6UL
- Unterstützung für Headless Devices (ohne Framebuffer)

4 KERNEL SOURCE

- linux-5.4.154-ge-21.10

5 PROJEKT TEMPLATES

- EMPTY -- leeres Projekt
- c -- C Makefile-Projekt
- cpp -- C++ Makefile Projekt
- nodejs -- Node.js Projekt ^{2,3,4,6}
- qt-core -- Qt5-Core Projekt
- qt-gui -- Qt5-GUI Projekt
- qt-quick -- Qt5-Quick Projekt ^{3,4,6}

6 SOFTWARE PAKETE FÜR GELIN-PROJEKTE

- busybox
- ca_certs
- datafs_async
- dosfstools
- e2fsprogs
- firmware_rtl8192cu
- firmware_tiwli8xx
- fonts_base
- fonts_dejavu
- fonts_liberation
- fonts_X11
- gdbserver
- ge_ethmgr
- ge_update ^{1,2,3,4,6}
- ge_wlanmgr
- gstreamer
- gstreamer_bayer2rgbneon ^{2,3,4}
- gstreamer_v4l2
- hotplugd
- libgecan_tools
- linrpcd2
- matchbox
- mtdutils
- mtdutils_test
- nodejs ^{2,3,4,6}
- qt_common
- qt_display_auto
- qt_display_common
- qt_display_eglfskms ^{3,6}
- qt_display_linuxfb
- qt_misc
- qt_plugins_3d ^{3,6}
- qt_plugins_bearer
- qt_plugins_canbus
- qt_plugins_imageformats
- qt_plugins_input_misc
- qt_plugins_location
- qt_plugins_multimedia
- qt_plugins_qmldebug ^{3,4,6}
- qt_plugins_sensors
- qt_plugins_sql
- qt_plugins_webview ^{3,4,6}
- qt_qmlmodules_3d^{3,6}
- qt_qmlmodules_bluetooth ^{3,4,6}
- qt_qmlmodules_canvas3d ^{3,6}
- qt_qmlmodules_charts ^{3,4,6}
- qt_qmlmodules_common ^{3,4,6}
- qt_qmlmodules_graphicaleffects ^{3,6}
- qt_qmlmodules_location ^{3,4,6}
- qt_qmlmodules_multimedia ^{3,6}
- qt_qmlmodules_nfc ^{3,4,6}
- qt_qmlmodules_qml ^{3,4,6}
- qt_qmlmodules_qt_labs ^{3,4,6}
- qt_qmlmodules_quick2 ^{3,4,6}
- qt_qmlmodules_sensors ^{3,4,6}
- qt_qmlmodules_test ^{3,4,6}
- qt_qmlmodules_webchannel ^{3,4,6}
- qt_qmlmodules_webengine ^{3,4,6}
- qt_qmlmodules_webkit ^{3,4,6}
- qt_qmlmodules_websockets ^{3,4,6}
- qt_qmlmodules_webview ^{3,4,6}
- qt_quick ^{3,6}
- qt_touchscreen
- qt_webengine ^{3,4,6}
- rng
- rootfs_base
- splashscreen
- splashscreen_logo
- ssh_client
- ssh_server
- telnet_server
- tpmtools
- tslib
- tslib_tools
- tslib_uinput
- ubiutils
- valgrind_callgrind ^{2,3,4,5,6}
- valgrind_common ^{2,3,4,5,6}
- valgrind_full ^{2,3,4,5,6}
- valgrind_memcheck ^{2,3,4,5,6}
- wlan
- xserver
- zoneinfo

7 QUELLEN PAKETE

7.1 TOOLCHAIN

- Binutils-2.35.2
- gcc-9.4.0
- gettext-tiny-0.3.2
- glibc-2.32-50-g737efa27fca5c
- gmp-6.2.1
- isl-0.22
- linux-5.4.154
- mpc-1.1.0
- mpfr-4.0.2
- ncurses-6.1

7.2 BUILDROOT

- acl-2.2.53
- alsa-lib-1.2.4
- alsa-utils-1.2.4
- at-3.2.1
- attr-2.4.48
- aumix-2.9.1
- autoconf-2.69
- autoconf-archive-2019.01.06
- automake-1.15.1
- avahi-0.8
- bayer2rgb-neon-bef3ecafe290^{2,3,4}
- berkeleydb-5.3.28
- binutils-2.35.2
- bison-3.7.1
- bluez5_utils-5.55
- bluez5_utils-headers-5.55
- boost-1.75.0
- buildroot-2021.02.6
- busybox-1.33.1
- bzip2-1.0.8
- ca-certificates-20210119
- can-utils-2020.11.0
- c-ares-1.17.2
- cifs-utils-6.13
- cmake-3.15.5
- cramfs-2.1
- crda-4.14
- cryptsetup-2.3.4
- cyrus-sasl-2.1.27
- dbus-1.12.20
- dbus-glib-0.110
- dbus-triggerd-ba3dbec805cb
- dejavu-2.37
- dhystone-2
- dnsmasq-2.85
- dosfstools-4.1
- dtc-1.6.0
- e2fsprogs-1.45.6
- elfutils-0.181
- ethtool-5.10
- evemu-2.7.0
- evtest-1.34
- expat-2.4.1
- faad2-2.10.0
- fakeroot-1.25.3
- fbdump-0.4.2
- fbgrab-1.4
- fcgiwrap-99c942c90063c
- ffmpeg-4.3.2
- fftw-double-3.3.8
- flac-1.3.3
- flex-2.6.4
- fontconfig-2.13.1
- freetype-2.10.4
- gawk-5.1.0
- gcc-final-9.4.0
- gcc-initial-9.4.0
- gdb-9.2
- genext2fs-1.4.1
- gengetopt-2.23^{2,3,4}
- gettext-tiny-0.3.2
- glibc-2.32-50-g737efa27fca5c97f566a2005687fda7d6659cd2e
- glibmm-2.62.0
- glib-networking-2.66.0
- glmark2-c493520253fbf^{3,6}
- gmp-6.2.1
- gnupg-1.4.23
- gnutls-3.7.2
- gperf-3.1
- gst1-libav-1.18.5
- gst1-plugins-bad-1.18.5
- gst1-plugins-base-1.18.5
- gst1-plugins-bayer2rgb-neon-0.4^{2,3,4}
- gst1-plugins-good-1.18.5
- gst1-plugins-ugly-1.18.5
- gstreamer1-1.18.5
- gzip-1.10
- hostapd-2.9
- hotplugd-14993
- htop-ce6d60e7def1
- i2c-tools-4.2
- icu-68-1
- ifplugd-0.28
- imagemagick-7.0.11-13
- inotify-tools-3.20.2.2
- input-event-daemon-0.1.3
- intltool-0.51.0
- iostat-2.2
- iproute2-5.7.0
- iptables-1.8.6
- isl-0.22
- iw-5.9
- jasper-2.0.28
- jimtcl-0.79
- jitterentropy-library-2.2.0
- jpeg-turbo-2.0.6
- json-c-0.15
- kbd-2.3.0
- kmod-28
- lame-3.100
- latencytop-0.5
- ldd-crosstool-ng-1.24.0
- leveledb-1.22
- libaio-0.3.112
- libao-1.2.0
- libargon2-20190702
- libbsd-0.10.0
- libcurl-7.79.1
- libdaemon-0.14
- libdrm-2.4.104^{3,6}
- liberation-2.1.2
- libestr-0.1.11
- libevdev-1.11.0
- libevent-2.1.12
- libfastjson-0.99.9
- libfcgi-2.4.2
- libffi-3.3
- libftdi-0.20
- libgcrypt-1.9.4
- libgecan-1529
- libglib2-2.66.8
- libglu-9.0.1^{3,6}
- libgpg-error-1.41
- libgpiod-1.6.3
- libhid-0.2.16
- libhttpparser-2.9.4
- libiberty-2.32
- libical-1.0.1
- libkrb5-1.18.4
- liblog4c-localtime-1.0
- liblogging-1.0.6
- libmicrohttpd-0.9.72
- libmms-0.6.4
- libmnl-1.0.4
- libmodbus-3.1.6
- libmpeg2-0.5.1

- libnftnl-1.1.7
- libnl-3.5.0
- libnspr-4.29^{3,4,6}
- libnss-3.61^{3,4,6}
- libogg-1.3.4
- libopenh264-2.1.1
- libopenssl-1.1.1l
- libpcap-1.10.1
- libpng-1.6.37
- libpthread-stubs-0.4
- libqrencode-4.1.1
- libsigc-2.10.0
- libsndfile-1.0.28
- libsocketcan-0.0.12
- libsoup-2.62.3
- libssh2-1.9.0
- libsysfs-2.1.0
- libtasn1-4.17.0
- libtheora-1.1.1
- libtirpc-1.3.2
- libtool-2.4.6
- libuboot-ge-env-15951
- libunistring-0.9.10
- liburcu-0.12.1
- liburiparser-0.9.4
- libusb-1.0.24
- libusb-compat-0.1.7
- libuv-1.40.0
- libv4l-1.20.0
- libvncserver-0.9.13
- libvorbis-1.3.7
- libvpx-1.9.0
- libxcb-1.14
- libxcbcommon-1.0.3
- libxml2-2.9.12
- libxml-parser-perl-2.46
- libxslt-1.1.34
- libzip-1.7.3
- libzlib-1.2.11
- linrpcd2-16004
- linux-5.4.154
- linuxconsoletools-1.7.0
- linux-headers-5.4.154
- linux-zigbee-0.3.1
- live555-2021.05.03
- log4cplus-2.0.5
- logrotate-3.18.0
- lrzsz-0.12.20
- ltrace-82c66409c7a9
- lttng-libust-2.12.0
- lvm2-2.02.185
- lz4-1.9.3
- lzip-1.21
- lzo-2.10
- lzop-1.03
- m4-1.4.18
- matchbox-1.2
- matchbox-1.2
- matchbox-common-0.9.1
- matchbox-desktop-0.9.1
- matchbox-fakekey-0.1
- matchbox-keyboard-0.1
- matchbox-lib-1.9
- matchbox-panel-0.9.3
- mdadm-4.1
- memstat-1.0
- memtester-4.5.0
- mesa3d-20.3.5^{3,6}
- meson-0.56.2
- mmc-utils-d40ec535b9d4
- mosquitto-2.0.12
- mpc-1.1.0
- mpfr-4.0.2
- mpg123-1.25.15
- mtd-2.1.2
- mxt-app-15949
- nasm-2.15.05⁵
- ncurses-6.1
- ne10-1.2.1^{2,3,4}
- neard-0.16
- netcat-openbsd-debian_1.195-2
- netsnmp-5.9
- nettle-3.7.3
- nfs-utils-2.5.2
- nftables-0.9.6
- nghttp2-1.41.0^{2,3,4,6}
- nginx-1.18.0
- ninja-1.10.2
- nodejs-12.22.6^{2,3,4,6}
- ntp-4.2.8p15
- numactl-2.0.14^{5,6}
- oniguruma-6.9.6
- opencv3-3.4.13
- openldap-2.4.59
- openobex-1.7.2
- openssh-8.8p1
- openvpn-2.5.2
- oprofile-1.4.0
- opus-1.3.1^{3,4,6}
- PACKAGE-VERSION
- patchelf-0.9
- pcre2-10.35
- pcre-8.44
- php-7.4.24
- pixman-0.40.0
- pkgconf-1.6.3
- popt-1.18
- pppd-2.4.8
- pptp-linux-1.10.0
- protobuf-3.14.0
- pwgen-2.08
- python-2.7.18
- python3-3.9.7
- python3-mako-1.1.3^{3,6}
- python3-setuptools-44.0.0
- python-pycryptodomex-3.9.9
- python-setuptools-44.0.0
- qjson-0.9.0
- qt53d-5.12.11^{3,6}
- qt5base-5.12.11
- qt5canvas3d-5.12.11^{3,6}
- qt5charts-5.12.11
- qt5connectivity-5.12.11
- qt5declarative-5.12.11
- qt5graphiceffects-5.12.11^{3,6}
- qt5imageformats-5.12.11
- qt5location-5.12.11
- qt5multimedia-5.12.11
- qt5quickcontrols2-5.12.11^{3,4,6}
- qt5quickcontrols-5.12.11^{3,4,6}
- qt5script-5.12.11
- qt5sensors-5.12.11
- qt5serialbus-5.12.11
- qt5serialport-5.12.11
- qt5svg-5.12.11
- qt5webchannel-5.12.11^{3,4,6}
- qt5webengine-5.12.11^{3,4,6}
- qt5webkit-5.9.1
- qt5websockets-5.12.11
- qt5webview-5.12.11^{3,4,6}
- qt5xmlpatterns-5.12.11
- quazip-1.1
- qwt-6.1.6
- readline-8.1
- rng-tools-6.11
- rpcbind-1.2.5
- rp-pppoe-3.14
- rsync-3.1.3
- rsyslog-8.2010.0
- rt-tests-1.10^{5,6}
- ruby-2.7.4
- sdl-1.2.15
- sdl2-2.0.14
- sdl_mixer-1.2.12
- sdl_net-1.2.8
- snappy-1.1.8
- socat-1.7.4.1
- softether-4.30-9700-beta
- spawn-fcgi-1.6.4
- spidev_test-4.10
- splashscreen-14997
- sqlite-3.34.1
- squashfs-4.4
- sshpass-1.06
- strace-5.10
- sysstat-12.4.2
- tar-1.32
- tcpdump-4.99.1
- tiff-4.2.0
- tmux-3.1c
- tpm2-tools-4.1.2
- tpm2-tss-3.0.3
- tpm2-tss-engine-1.1.0
- trace-cmd-trace-cmd-v2.9.1
- tremor-7c30a6634619
- tslib-1.22
- tzdata-2021a
- ubiecdump-13895
- uboot-tools-2020.04
- unzip-6.0
- usb_modeswitch-2.6.1
- util-linux-2.36.2
- valgrind-3.16.1^{2,3,4,5,6}
- vorbis-tools-1.4.2

- wavpack-5.4.0
- webp-1.2.0^{3,4,6}
- wget-1.20.3
- whetstone-1.2
- wireless-regdb-2021.08.28
- wireless_tools-30.pre9
- wlansimplescan-r274
- wpa_supplicant-2.9
- x11vnc-0.9.16
- xapp_bdfpcf-1.1
- xapp_mkfontscale-1.2.1
- xapp_xauth-1.1
- xapp_xbacklight-1.2.3
- xapp_xev-1.2.4
- xapp_xeyes-1.1.2
- xapp_xhost-1.0.8
- xapp_xinit-1.4.1
- xapp_xinput-1.6.3
- xapp_xkbcomp-1.4.4
- xapp_xkbemd-1.1.4
- xapp_xkbprint-1.0.5

- xapp_xlogo-1.0.5
- xapp_xmessage-1.0.5
- xapp_xmodmap-1.0.10
- xapp_xset-1.2.4
- xapp_xsetmode-1.0.0
- xapp_xsetpointer-1.0.1
- xapp_xsetroot-1.1.2
- xcb-proto-1.14.1
- xcb-util-0.4.0
- xcb-util-image-0.4.0
- xcb-util-wm-0.4.1
- xdata_xbitmaps-1.1.2
- xfont_encodings-1.0.5
- xfont_font-alias-1.0.4
- xfont_font-cursor-misc-1.0.3
- xfont_font-misc-misc-1.1.2
- xfont_font-util-1.3.2
- xkeyboard-config-2.31
- xlib_libfontenc-1.1.4
- xlib_libICE-1.0.10
- xlib_libSM-1.2.3

- xlib_libX11-1.7.2
- xlib_libXau-1.0.9
- xlib_libXaw-1.0.14
- xlib_libXcomposite-0.4.5
- xlib_libXcursor-1.2.0
- xlib_libXdamage-1.1.5
- xlib_libXdmcp-1.1.3
- xlib_libXext-1.3.4
- xlib_libXfixes-5.0.3
- xlib_libXfont-1.5.4
- xlib_libXfont2-2.0.5
- xlib_libXft-2.3.4
- xlib_libXi-1.7.10
- xlib_libXinerama-1.1.4
- xlib_libxkbfile-1.1.0
- xlib_libXmu-1.1.3
- xlib_libXpm-3.5.13
- xlib_libXrandr-1.5.2
- xlib_libXrender-0.9.10
- xlib_libXres-1.2.0
- xlib_libXScrnSaver-1.2.3

- xlib_libxshmfence-1.3^{3,6}
- xlib_libXt-1.2.1
- xlib_libXtst-1.2.3
- xlib_libXv-1.0.11
- xlib_libXxf86vm-1.1.4
- xlib_xtrans-1.4.0
- xmlstarlet-1.6.1
- xorgproto-2020.1
- xserver_xorg-server-1.19.7
- xterm-367
- xutil_util-macros-1.19.3
- xvkbd-4.1
- xz-5.2.5
- zic-2020f
- zip-3.0
- zstd-1.4