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| Product name | Confidentiality level |
| E3372h-510 | CONFIDENTIAL |
| Product version | Total 14 pages |
| V19.0 | |

HUAWEI E3372h TCPU-22.329.07.00.00

Release Notes V19.0

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|-------------|-------------|------|-----------|
| Prepared by | E3372h Team | Date | 2018/1/19 |
|-------------|-------------|------|-----------|



Huawei Technologies Co., Ltd.



Revision Record

| Date | Revision version | FW-WebUI/HiLink Version | Change Description | Author |
|------------|------------------|-------------------------|---------------------|-------------|
| 2014-9-30 | 1.0 | FW 22.180.03.00.00 | First version | E3372h Team |
| 2014-10-11 | 2.0 | FW 22.180.05.00.00 | Second version | E3372h Team |
| 2014-11-11 | 3.0 | FW 22.180.09.00.00 | Third version | E3372h Team |
| 2014-12-18 | 4.0 | FW 22.200.01.00.00 | Fourth version | E3372h Team |
| 2014-12-28 | 5.0 | FW 22.200.03.00.00 | Fifth version | E3372h Team |
| 2015-1-22 | 6.0 | FW 22.200.05.00.00 | Sixth version | E3372h Team |
| 2015-4-8 | 7.0 | FW 22.200.07.00.00 | Seventh version | E3372h Team |
| 2015-4-18 | 8.0 | FW 22.200.09.00.00 | Eighth version | E3372h Team |
| 2015-6-19 | 9.0 | FW 22.200.13.00.00 | nineth version | E3372h Team |
| 2015-8-29 | 10.0 | FW 22.200.15.00.00 | Tenth version | E3372h Team |
| 2015-11-15 | 11.0 | FW 22.315.01.00.00 | Eleventh version | E3372h Team |
| 2016-4-13 | 12.0 | FW 22.317.01.00.00 | Twelfth version | E3372h Team |
| 2016-10-31 | 13.0 | FW 22.321.01.00.00 | Thirteenth version | E3372h Team |
| 2016-12-26 | 14.0 | FW22.323.01.00.00 | Fourteenth version | E3372h Team |
| 2017-3-16 | 15.0 | FW22.323.03.00.00 | Fifteenth version | E3372h Team |
| 2017-11-02 | 16.0 | FW22.328.01.00.00 | Sixteenth version | E3372h Team |
| 2018-1-04 | 17.0 | FW22.329.03.00.00 | Seventeenth version | E3372h Team |
| 2018-1-11 | 18.0 | FW22.329.05.00.00 | Eighteenth version | E3372h Team |
| 2018-1-19 | 19.0 | FW22.329.07.00.00 | Nineteenth version | E3372h Team |

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HUAWEI E3372h TCPU-V200R002B329D07SP00C00 Release Notes V19.0

1 Main Features

The E3372h supports the following standards:

- LTE cat4 data service up to 150Mbit/s (Downlink) and 50Mbit/s(Uplink)
- DC-HSPA+ data service up to 43.2 Mbit/s
- HSPA+ data service up to 21.6 Mbit/s
- HSDPA packet data service of up to 14.4 Mbit/s
- HSUPA data service up to 5.76 Mbit/s
- WCDMA PS domain data service of up to 384 Kbit/s
- Equalizer and receive diversity
- microSD Card Slot (Up to 32G)
- Data and SMS Service
- Plug and play
- Standard USB interface
- CSFB

2 Hardware

2.1 Version Description

| | |
|---------------------|-----------------------|
| Hardware Version: | CL2E3372HM Ver.A |
| Platform & Chipset: | Balong Hi6921 V7R11M, |

2.2 Hardware Specifications

| Item | Specifications |
|---------------------|--|
| Hardware Version | <ul style="list-style-type: none">● CL2E3372HM |
| Technical standard | <ul style="list-style-type: none">● LTE 3GPP R9● HSPA+/UMTS: 3GPP R99/R5/R6/R7/R8● GSM/GPRS/EDGE: 3GPP R99 |
| External interfaces | USB: Type A with standard USB 2.0 High speed interface |
| | LED: indicating the status of the Data Card |
| | SD card: standard TF card interface |
| | SIM/USIM card: standard 6-pin SIM card interface |
| | RF interface: external RF interface |



| Item | Specifications |
|---|--|
| Maximum power consumption | ≤ 3.5 W |
| Power supply | 5V |
| Dimensions (D × W × H) | About 88mm(D) × 28mm(W) × 11.5mm (H) |
| Weight | ≤ 25 g |
| Temperature | <ul style="list-style-type: none">Operating: −10°C to +40°CStorage: −20°C to +70°C |
| Humidity | 5% to 95% |
| Base Information | <ul style="list-style-type: none">Plug and play (PnP) |
| | <ul style="list-style-type: none">Standard USB 2.0 High Speed interface, auto installation, convenient for use |
| Note: 3GPP = The 3rd Generation Partnership Project TS = Technical Specification LED = Light-Emitting Diode SIM = Subscriber Identity Module USIM = UMTS Subscriber Identity Module | |
| | |

2.3 Improvements in the Previous Version

| Index | Case ID | Issue Description |
|---------------------------|---------|-------------------|
| Hardware Version | | CL2E3372HM Ver.A |
| Previous Hardware Version | | NA |
| NA | NA | NA |

2.4 Known Limitations and Issues

| Index | Case ID | Issue Description |
|-------|---------|-------------------|
| NA | NA | NA |

3 Firmware

3.1 Version Description

| | |
|----------------------|-----------------|
| Firmware Version: | 22.329.07.00.00 |
| Baseline information | Hi6921 V7R11M |



3.2 Firmware Specifications

| Item | Specifications |
|------|----------------|
| NA | NA |

3.3 Improvement in the Previous Version

| Index | Case ID | Issue Description |
|---------------------------|---------|-------------------|
| Firmware Version | | 22.329.07.00.00 |
| Previous Firmware Version | | 22.329.05.00.00 |
| 1 | NA | NA |

3.4 Known Limitations and Issues

| Index | Case ID | Issue Description |
|-------|---------|-------------------|
| 1 | NA | NA |

4 WebUI/HiLink

4.1 Version Description

WebUI/HiLink Version: 17.100.20.00.03

4.2 WebUI/HiLink Specifications

| Item | Specifications |
|------|----------------|
| NA | NA |

4.3 Improvement in the Previous Version

| Index | Case ID | Issue Description |
|------------------------|---------|-------------------|
| WebUI Version | | 17.100.20.00.03 |
| Previous WebUI Version | | 17.100.19.00.03 |
| 1 | NA | NA |

4.4 Known Limitations and Issues

| Index | Case ID | Issue Description |
|-------|---------|-------------------|
| 1 | NA | NA |



5 Software Vulnerabilities Fixes

[Software Vulnerabilities include Android Vulnerability, Third-party software Vulnerability, and Huawei Vulnerability]

[Android Vulnerability is from Google, which reported publicly.]

[Third-party software is a type of computer software that is sold together with or provided for free in Huawei products or solutions with the ownership of intellectual property rights (IPR) held by the original contributors. Third-party software can be but is not limited to: Purchased software, Software that is built in or attached to purchased hardware, Software in products of the original equipment manufacturer (OEM) or original design manufacturer (ODM), Software that is developed with technical contribution from partners (ownership of IPR all or partially held by the partners), Software that is legally obtained free of charge.

The data of third-party software vulnerabilities fixes can be exported from PDM.

If the table is excessively long, you can divide it into multiple ones by product version, or deliver it in an excel file with patch release notes and provide reference information in this section.]

[Huawei Vulnerability is Huawei own software' Vulnerability, which found by outside]

Vulnerabilities information is available through CVE IDs in NVD (National Vulnerability Database) website: <http://web.nvd.nist.gov/view/vuln/search>

| Software/Module name | Version | CVE ID | Vulnerability Description | Solution |
|----------------------|---------|---------------|--|---|
| Openssl | 1.0.1p | CVE-2016-7056 | An information disclosure vulnerability in OpenSSL & BoringSSL could enable a remote attacker to gain access to sensitive information. This issue is rated as Moderate due to details specific to the vulnerability. | Google 2017 5# |
| linux_kernel | 3.4.5 | CVE-2017-7184 | The xfrm_replay_verify_len function in net/xfrm/xfrm_user.c in the Linux kernel through 4.10.6 does not validate certain size data after an XFRM_MSG_NEWAE update, which allows local users to obtain root privileges or cause a denial of service (heap-based out-of-bounds access) by leveraging the CAP_NET_ADMIN capability, as demonstrated during a Pwn2Own competition at CanSecWest 2017 for the Ubuntu 16.10 linux-image-* package 4.8.0.41.52. | Google 2017 5# https://github.com/torvalds/linux/commit/f843ee6dd019bcece3e74e76ad9df0155655d0df |



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|--------------|-------|---------------|--|---|
| linux_kernel | 3.4.5 | CVE-2012-2663 | extensions/libxt_tcp.c in iptables through 1.4.21 does not match TCP SYN+FIN packets in --syn rules, which might allow remote attackers to bypass intended firewall restrictions via crafted packets. NOTE: the CVE-2012-6638 fix makes this issue less relevant. | http://www.spinics.net/lists/netfilter-devel/msg21248.html |
| linux_kernel | 3.4.5 | CVE-2017-8890 | The inet_csk_clone_lock function in net/ipv4/inet_connection_sock.c in the Linux kernel through 4.10.15 allows attackers to cause a denial of service (double free) or possibly have unspecified other impact by leveraging use of the accept system call. | http://git.kernel.org/cgi/linux/kernel/git/torvalds/linux.git/commit/?id=657831ffc38e30092a2d5f03d385d710eb88b09a |
| linux_kernel | 3.4.5 | CVE-2017-9074 | The IPv6 fragmentation implementation in the Linux kernel through 4.11.1 does not consider that the nexthdr field may be associated with an invalid option, which allows local users to cause a denial of service (out-of-bounds read and BUG) or possibly have unspecified other impact via crafted socket and send system calls. | http://git.kernel.org/cgi/linux/kernel/git/torvalds/linux.git/commit/?id=2423496af35d94a87156b063ea5cedffc10a70a1 |
| linux_kernel | 3.4.5 | CVE-2017-7487 | The ipxif_ioctl function in net/ipv4/af_ipx.c in the Linux kernel through 4.11.1 mishandles reference counts, which allows local users to cause a denial of service (use-after-free) or possibly have unspecified other impact via a failed SIOCGIFADDR ioctl call for an IPX interface. | http://git.kernel.org/cgi/linux/kernel/git/torvalds/linux.git/commit/?id=ee0d8d8482345ff97a75a7d747efc309f13b0d80 |
| linux_kernel | 3.4.5 | CVE-2017-9242 | The __ip6_append_data function in net/ipv6/ip6_output.c in the Linux kernel through 4.11.3 is too late in checking whether an | http://git.kernel.org/cgi/linux/kernel/git/torvalds/linux.git/commit/?id=232cd35d0804cc241eb887bb8d4d9b3b |



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|--------------|-------|---------------|--|---|
| | | | overwrite of an skb data structure may occur, which allows local users to cause a denial of service (system crash) via crafted system calls. | 9881c64a |
| linux_kernel | 3.4.5 | CVE-2016-4913 | The <code>get_rock_ridge_filename</code> function in <code>fs/isofs/rock.c</code> in the Linux kernel before 4.5.5 mishandles NM (aka alternate name) entries containing <code>\0</code> characters, which allows local users to obtain sensitive information from kernel memory or possibly have unspecified other impact via a crafted isofs filesystem. | http://git.kernel.org/cgiit/linux/kernel/git/torvalds/linux.git/commit/?id=99d825822eade8d827a1817357cbf3f889a552d6 |
| linux_kernel | 3.4.5 | CVE-2017-7472 | The KEYS subsystem in the Linux kernel before 4.10.13 allows local users to cause a denial of service (memory consumption) via a series of <code>KEY_REQKEY_DEFL_THREAD_KEYRING</code> <code>keyctl_set_reqkey_keyring</code> calls. | http://git.kernel.org/cgiit/linux/kernel/git/torvalds/linux.git/commit/?id=c9f838d104fed6f2f61d68164712e3204bf5271b |
| linux_kernel | 3.4.5 | CVE-2016-7117 | Use-after-free vulnerability in the <code>__sys_recvmsg</code> function in <code>net/socket.c</code> in the Linux kernel before 4.5.2 allows remote attackers to execute arbitrary code via vectors involving a <code>recvmsg</code> system call that is mishandled during error processing. | https://git.kernel.org/pub/scm/linux/kernel/git/stable/linux-stable.git/commit/?id=34b88a68f26a75e4fded796f1a49c40f82234b7d |
| linux_kernel | 3.4.5 | CVE-2015-8966 | <code>arch/arm/kernel/sys_oabi-compat.c</code> in the Linux kernel before 4.4 allows local users to gain privileges via a crafted (1) <code>F_OFD_GETLK</code> , (2) <code>F_OFD_SETLK</code> , or (3) <code>F_OFD_SETLKW</code> command in an <code>fcntl64</code> system call. | https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git/commit/ |



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|--------------|-------|---------------|--|---|
| linux_kernel | 3.4.5 | CVE-2017-9075 | The sctp_v6_create_accept_sk function in net/sctp/ipv6.c in the Linux kernel through 4.11.1 mishandles inheritance, which allows local users to cause a denial of service or possibly have unspecified other impact via crafted system calls, a related issue to CVE-2017-8890. | https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git/commit/?id=fdcee2cbb8438702ea1b328fb6e0ac5e9a40c7f8 |
| linux_kernel | 3.4.5 | CVE-2017-9076 | The dccp_v6_request_recv_sock function in net/dccp/ipv6.c in the Linux kernel through 4.11.1 mishandles inheritance, which allows local users to cause a denial of service or possibly have unspecified other impact via crafted system calls, a related issue to CVE-2017-8890. | https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git/commit/?id=83eaddab4378db256d00d295bda6ca997cd13a52 |
| linux_kernel | 3.4.5 | CVE-2017-9077 | The tcp_v6_syn_recv_sock function in net/ipv6/tcp_ipv6.c in the Linux kernel through 4.11.1 mishandles inheritance, which allows local users to cause a denial of service or possibly have unspecified other impact via crafted system calls, a related issue to CVE-2017-8890. | https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git/commit/?id=83eaddab4378db256d00d295bda6ca997cd13a52 |
| linux_kernel | 3.4.5 | CVE-2016-9843 | The crc32_big function in crc32.c in zlib 1.2.8 might allow context-dependent attackers to have unspecified impact via vectors involving big-endian CRC calculation. | https://github.com/madler/zlib/commit/d1d577490c15a0c6862473d7576352a9f18ef811 |
| linux_kernel | 3.4.5 | CVE-2015-5364 | The (1) udp_recvmsg and (2) udpv6_recvmsg functions in the Linux kernel before 4.0.6 do not properly consider yielding a processor, which allows remote attackers to cause a denial of service (system hang) via incorrect checksums within a UDP packet flood. | https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git/commit/?id=beb39db59d14990e401e235faf66a6b9b31240b0 |
| linux_kernel | 3.4.5 | CVE-2016-9555 | The sctp_sf_ootb function in net/sctp/sm_statefuns.c in the Linux kernel before 4.8.8 lacks chunk-length checking for the first chunk, which allows remote attackers to cause a denial of service (out-of-bounds slab access) | https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git/commit/?id=bf911e985d6bbaa328c20c3e05f4eb03de11fdd6 |



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|--------------|-------|----------------|---|---|
| | | | or possibly have unspecified other impact via crafted SCTP data. | |
| linux_kernel | 3.4.5 | CVE-2017-10661 | Race condition in fs/timerfd.c in the Linux kernel before 4.10.15 allows local users to gain privileges or cause a denial of service (list corruption or use-after-free) via simultaneous file-descriptor operations that leverage improper might_cancel queueing. | https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git/commit/?id=1e38da300e1e395a15048b0af1e5305bd91402f6 |
| linux_kernel | 3.4.5 | CVE-2017-0427 | An elevation of privilege vulnerability in the kernel file system could enable a local malicious application to execute arbitrary code within the context of the kernel. This issue is rated as Critical due to the possibility of a local permanent device compromise, which may require reflashing the operating system to repair the device. Product: Android. Versions: Kernel-3.10, Kernel-3.18. Android ID: A-31495866. | Google 2017 11# patch |
| linux_kernel | 3.6.5 | CVE-2017-17712 | The raw_sendmsg() function in net/ipv4/raw.c in the Linux kernel through 4.14.6 has a race condition in inet->hdrincl that leads to uninitialized stack pointer usage; this allows a local user to execute code and gain privileges. | https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git/commit/?id=8f659a03a0ba9289b9aeb9b4470e6fb263d6f483 |
| linux_kernel | 3.6.5 | CVE-2017-16535 | The usb_get_bos_descriptor function in drivers/usb/core/config.c in the Linux kernel before 4.13.10 allows local users to cause a denial of service (out-of-bounds read and system crash) or possibly have unspecified other impact via a crafted USB device. | https://github.com/torvalds/linux/commit/1c0edc3633b56000e18d82fc241e3995ca18a69e |
| linux_kernel | 3.6.5 | CVE-2017-16531 | drivers/usb/core/config.c in the Linux kernel before 4.13.6 allows local users to cause a denial of service (out-of-bounds read and system crash) or possibly have unspecified other impact via a crafted USB device, related to the | https://github.com/torvalds/linux/commit/bd7a3fe770ebd8391d1c7d072ff88e9e76d063eb |



| | | | | |
|--------------|-------|------------------|--|---|
| | | | USB_DT_INTERFACE_AS SOCIATION descriptor. | |
| linux_kernel | 3.6.5 | CVE-2017-1000111 | Linux kernel: heap out-of-bounds in AF_PACKET sockets. This new issue is analogous to previously disclosed CVE-2016-8655. In both cases, a socket option that changes socket state may race with safety checks in packet_set_ring. Previously with PACKET_VERSION. This time with PACKET_RESERVE. The solution is similar: lock the socket for the update. This issue may be exploitable, we did not investigate further. As this issue affects PF_PACKET sockets, it requires CAP_NET_RAW in the process namespace. But note that with user namespaces enabled, any process can create a namespace in which it has CAP_NET_RAW. | https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git/commit/?id=c27927e372f0785f3303e8fad94b85945e2c97b7 |
| linux_kernel | 3.6.5 | CVE-2016-10088 | Both damn things interpret userland pointers embedded into the payload; worse, they are actually traversing those. Leaving aside the bad API design, this is very much _not_ safe to call with KERNEL_DS. Bail out early if that happens. | https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git/commit/?id=128394eff343fc6d2f32172f03e24829539c5835 |
| linux_kernel | 3.6.5 | CVE-2014-2523 | net/netfilter/nf_conntrack_proto_dccp.c in the Linux kernel through 3.13.6 uses a DCCP header pointer incorrectly, which allows remote attackers to cause a denial of service (system crash) or possibly execute arbitrary code via a DCCP packet that triggers a call to the (1) dccp_new, (2) dccp_packet, or (3) dccp_error function. | https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git/commit/?id=b22f5126a24b3b2f15448c3f2a254fc10cbc2b92 |
| linux_kernel | 3.6.5 | CVE-2017-17712 | The raw_sendmsg() function in net/ipv4/raw.c in the Linux kernel through 4.14.6 has a race condition in inet->hrcnl that leads to uninitialized stack pointer | https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git/commit/?id=8f659a03a0ba9289b9aeb9b4470e6fb263d6f483 |

| | | | | |
|--------------|-------|----------------|---|---|
| | | | usage; this allows a local user to execute code and gain privileges. | |
| linux_kernel | 3.4.5 | CVE-2015-8966 | arch/arm/kernel/sys_oabi-compat.c in the Linux kernel before 4.4 allows local users to gain privileges via a crafted (1) F_OFD_GETLK, (2) F_OFD_SETLK, or (3) F_OFD_SETLKW command in an fcntl64 system call. | https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git/commit/ |
| linux_kernel | 3.4.5 | CVE-2016-7117 | Use-after-free vulnerability in the __sys_recvmsg function in net/socket.c in the Linux kernel before 4.5.2 allows remote attackers to execute arbitrary code via vectors involving a recvmsg system call that is mishandled during error processing. | https://git.kernel.org/pub/scm/linux/kernel/git/stable/linux-stable.git/commit/?id=34b88a68f26a75e4fded796f1a49c40f82234b7d |
| linux_kernel | 3.4.5 | CVE-2017-17806 | The HMAC implementation (crypto/hmac.c) in the Linux kernel before 4.14.8 does not validate that the underlying cryptographic hash algorithm is unkeyed, allowing a local attacker able to use the AF_ALG-based hash interface (CONFIG_CRYPTO_USER_API_HASH) and the SHA-3 hash algorithm (CONFIG_CRYPTO_SHA3) to cause a kernel stack buffer overflow by executing a crafted sequence of system calls that encounter a missing SHA-3 initialization. | http://git.kernel.org/cgit/linux/kernel/git/torvalds/linux.git/commit/?id=af3ff8045bbf3e32f1a448542e73abb4c8ceb6f1 |
| linux_kernel | 3.4.5 | CVE-2017-17558 | The usb_destroy_configuration function in drivers/usb/core/config.c in the USB core subsystem in the Linux kernel through 4.14.5 does not consider the maximum number of configurations and interfaces before attempting to release resources, which allows local users to cause a denial of service (out-of-bounds write access) or possibly have unspecified other impact via a crafted USB device. | https://www.spinics.net/lists/linux-usb/msg163644.html |



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|--------------|-------|----------------|--|----------------------|
| linux_kernel | 3.4.5 | CVE-2017-13246 | In csum_partial_copy_fromiovecend of iovector.c, an offset of zero can be specified even when there are no iovs on the stack, causing an out of bounds read from a kernel stack buffer. This could lead to information disclosure. | Google 2018 2# patch |
|--------------|-------|----------------|--|----------------------|

6 Accessory Product from other Vendor

Version Description

Accessory Product Version:

6.1 Known Limitations and Issues

7 Others

8 Reference