

AS55X Release notes

Firmware and Service Software 3.00

The Firmware 3.00 is the junction of ISDN release 1.11 and SIP release 2.29. The switching between ISDN and SIP can be done with the service software. This firmware can be used for all AS55X hardware versions.

1. New and improved features

1.1. LAN speed and simplex/duplex settings and watching

Physical LAN settings can now be set via configuration platform and the actual used or negotiated operation mode can be watched with 'View LAN status'.

1.2. Additionally add prefix '0' to CLIP to wired interface

Some PBXes need this prefix in order to manage call back properly.

2. Problem solution

2.1. Fixed link of ISDN B-channel and GSM channel failed

This initially present function was lost with the firmware release 1.05 and is reactivated now.

2.2. Suppress DHCP request as connection check

If the LAN interface is a DHCP client, DHCP requests are additionally used as connection check to the network. This function can be suppressed by setting of unnamed bit 35.

Firmware and Service Software 3.01

1. New and improved features

1.1. Upgrade with upgrade code

Upgrading for new features is now possible with an upgrade code. The installation window 'Enter upgrade code' generates an upgrade key. This key must be sent to the manufacturer for generation an upgrade code. The received upgrade code has to be copied into the dedicated field and then applied.

1.2. Test licence

Every AS55X gets a test licence for maximum device features for a duration of four weeks. With updating to firmware 3.01, the test licence is automatically granted. Please read further information in the help context of the configuration.

1.2. DialCommand

The DialCommand server for working with SIP on the wired domain of the AS55X is implemented.

2. Problem solution

2.1. Fix false number coding from SIP

Sometimes the AS55X is getting called or calling party numbers like +0123 or +00123 which are obviously wrong coded. These numbers are now by default converted to 0123 respectively 00123. If this recoding should cause problems, it can be deactivated by resetting the unnamed bit 4.

2.1. Enhanced Via header evaluation

In some cases with proxies, the SIP-response from the AS55X seems to come to nothing. The evaluating of the received Via header in SIP is enhanced now for proper working with proxies.

Firmware and Service Software 3.03

1. New and improved features

1.1. Second peer IP address

A secondary peer IP address can be defined now for a backup PBX. Call setups to the PBXs are sent to the primary peer IP address except if the connection to this address is not given but the connection to the second peer IP address is present. Call setups in direction to GSM are accepted from both IP addresses.

1.2. GSM cell info available in multiplexer mode

In earlier releases, cell information was not available if Telnet was activated. Now both can be used at the same time. If Telnet is used for internet access via GPRS, cell info can decrease data throughput a bit. Because of the high trace traffic that reduces the record history, cell info should only be requested, if necessary for troubleshooting.

1.3. Sent short messages in statistics

The number of successfully sent short messages via Telnet is shown in the statistics.

1.4. GSM PBX implemented

The GSM PBX provides facilities for SIP DID registration or multiplexed single user registrations at a SIP provider. SIP numbers can directly be linked to GSM numbers or DTMF dialling is possible with or without speed dialling lists in both directions.

1.5. Get calling party number from Remote-Party-ID header

The default search sequence for determining the calling party number from SIP headers is now:

- P-Preferred-Identity
- P-Asserted-Identity
- Remote-Party-ID
- From
- Contact

1.4. SIP UPDATE implemented

2. Problem solution

2.1. Enhancements in SIP Record-Route processing

There was a problem regarding interworking with SIP providers resulting in an abort of the connection after about 30 seconds. This problem is fixed.

2.2. Ignore Trying response from registrar

It may happen that the registrar responses with a Trying provisional response to the REGISTER request. This will be ignored now.

2.3. PRACK configuration

To increase flexibility, the PRACK sequence request can be configured now. It may be possible to request it always or never in order to activate early media or to avoid one way audio.

2.4. Password handling

In earlier releases, passwords are included in the configuration data set. Because of privacy, they are handled extra now and there are only place holders included in the configuration data set that is saved into a file or uploaded from a target device. If the firmware of a device with passwords in its configuration is updated to this release or a higher one, the configuration must be uploaded and downloaded again in order to transfer the configuration into the new format.

2.5. IP address and port redirection

Some PBXes cannot handle the SIP connection to an AS55X at the LAN properly if it is also registered at a SIP provider and set an IP address and port redirection to the public values. By setting of bit 67 this redirection can be ignored.

Firmware and Service Software 3.04

1. New and improved features

1.1. SIP over TCP

TCP is now available as additional transport protocol for SIP. UDP remains the default transport protocol as SIP has its own mechanism to avoid data loss. The TCP protocol can be chosen with the extended SIP settings.

1.2. Speed dialling list for GME

If GME and GSM-PBX is used, the speed dialling list from GSM is available for GME dialling as well.

1.3. SIP INFO for supervision of connection

Some PBXes do not handle reINVITES for connection supervision properly. With this release, the INFO method is selectable alternatively for this issue.

1.4. VLAN tagging

VLAN tagging is implemented now. A VLAN tag with VLAN ID and priority can be defined in the extended SIP settings form. This tag is valid for SIP over TCP and UDP and for RTP.

1.5. Pass GSM CLIP in SIP client mode

Normally a SIP client can send only his own user number or username as CLIP to the provider. But in special cases the AS55X is wanted to include the GSM CLIP as calling party number into the INVITES to the provider. This facility is implemented now.

1.6. Receive dialable GSM numbers in SIP client mode

The AS55X in client mode can now receive a dialable GSM number. All received numbers that cannot be assigned to the GSM PBX link list and that are not the clients local username can be treated as direct dialable GSM number.

2. Problem solution

2.1. Device reset in ISDN mode

There was a problem regarding sending of multiple ISDN frames in very fast succession. This fault concerns the firmware releases 3.00 to 3.03, it is fixed.

2.2. Enhancements of supervision mechanism in PassThrough mode

There was a problem with trunk checks by the PBX in PassThrough mode. They were caused by ISDN STATUS messages outside of a connection, but with connection dependent call references. These messages are passed through now. In this context enhancements were made for supervisory to avoid blocking of B-channels.

Firmware and Service Software 3.05

1. New and improved features

1.1. Recorder for Audio from GSM

Sometimes there were complaints about bad audio quality or unreliable DTMF reception over GSM. Audio from the GSM network can be disturbed, distorted or interrupted and there can be noise or echo. For better classification of such complaints, an audio recorder is implemented. The recorded signal will be saved as standard WAV file.

1.2. DTMF-relay

Additionally to DTMF converting between LAN and GSM via telephone-event in the RTP stream (RFC2833/4733), the processing via dtmf-relay over SIP signalling is implemented. Both of them can be activated independently.

1.3. 7e1 Emulation

For GSM circuit data purposes, sometimes the 7-e-1 character framing is used, but the inserted GSM engines do not support this framing. The 7e1 emulation may help in such cases. Please ask your distributor to recognise the necessity and how to configure the emulation.

1.4. Telnet Enhancements

Some virtual Com Port drivers really want to control a remote hardware via Telnet protocol. The AS55X responds to such control codes since this release. Additionally a raw TCP mode is implemented that does not expect and not use any Telnet control characters. The raw TCP mode can be activated by setting unnamed byte 103 to 1.

2. Problem solution

2.1. Message distance with TCP

In some cases, PBXes do not handle SIP messages over TCP correctly if they follow one another too fast. A minimum distance of SIP messages can be configured now with unnamed byte 90 in 10ms steps from 0 (value 0) to 150ms (value 15).

2.2. DHCP

If the AS55X works in DHCP client mode, sometimes there was a lack in complete registering the received IP address at the server. This problem is solved.

2.3. SIP User-Agent header

Since firmware version 3.03 the SIP User-Agent header is enhanced with device type and hardware release. Some PBXes do reject some characters of these values. These ones are replaced.

Firmware and Service Software 3.10

1. New and improved features

1.1. BRI interface control

From this firmware release, the AS550 and AS551 ISDN BRI devices will be supported.

1.2. SNMP implemented

Lots of device and statistics information can now be read from the AS55X by SNMP. Additionally the statistics of the AS550 can be restarted. The correspondent MIB file, needed by the SNMP manager, can be found in the subfolder 'Documents' of the service software.

1.3. Fix subscriber number in national or international order

Some ISDN PBXes cannot handle incoming destination numbers with ISDN unknown type. The fix subscriber numbers can now begin with a 'N' or an 'I' character to deliver ISDN national or international number format to the PBX.

1.4. Accept tel uri

In single cases, SIP PBXes use a numbering scheme with Tel URIs instead of SIP URIs. These ones are accepted now by the AS55X.

1.5. All files in one installation packet

Since version 3.10, all files of a new release are included in the installation packet. The firmware can be found in the subfolder 'Firmware' and the release notes in the subfolder 'Documents' of the service software. The advantage is, all related files can now be found at one location, especially as the amount of files will increase.

1.6. Short message server

A short message server is implemented for easy sending and receiving short messages via the AS55X through network applications. Such application named 'SMS Center' is offered. Interested parties, who want to write SMS applications themselves, are requested to contact the distributor for API information about the message server.

1.7. SMS callback request

If a call setup to GSM remains unsuccessful, it is possible to send a predefined short message to the called participant - normally a callback request. This can take place automatically or on demand.

Firmware and Service Software 3.11

1. New and improved features

1.1. WLL control

From this firmware, the control of the new WLL device is implemented.

1.2. SMS callback request enhancements

Deviating from the global settings for sending a short message callback request, they now can be defined individually via the 'Individual call-setup' form.

The own voice number of the GSM channel is needed for SMS callback request purposes but it sometimes is not present at the designated location on the SIM. It will now be additionally read from the phonebook entry one if the name matches exactly this text: 'ownvoicenumber'. The detection is case insensitive.

1.3. SIP P-Asserted-Identity header

Normally a SIP provider cannot handle different numbers in the From header. In order to make them able to get the CLIP from GSM, the P-Asserted-Identity header can now be included.

2. Problem solution

2.1. SIP CSeq header

In firmware version 3.10 there was an error in the CSeq header that can result into abort of call-setups from GSM to SIP. This error is fixed.

2.2. ISDN BRI PassThrough in PTP mode

Some wired network providers do not support all ISDN layer 2 messages in point-to-point configuration. This will no longer cause an interface reset of the AS55X.

Firmware and Service Software 3.12

1. New and improved features

1.1. Detection of PBX internal and external numbers

A detection is implemented, if a number, exchanged with the PBX, is a number of the PBX domain (extension number) or not.

By default, the AS55X assumes a wired number to be an extension number of the PBX if the calling number is no national and no international number. If the PBX also sends calling numbers in national or international order, there can be made exceptions with the PBX domain number list. That means, the AS 55X will treat all there defined number-beginnings as extension numbers of the PBX.

1.2. SMS callback request enhancements

Different texts can be defined now if the origin of the call is within the PBX domain or not. The selection of the text to be sent depends on detection of PBX internal and external numbers.

The calling party name is now available for the SMS callback request for SIP calls.

1.3. Add a leading '0' to the dialled number into the PBX

Sometimes PBXs need an additional leading '0' if the destination of the call is not in the PBX domain (number of the wired network). Depending on the detection of PBX internal and external numbers, this digit will be added, if the bit 65 is set.

1.4. Remove a leading '0' from the calling number from the PBX

If the PBX adds a leading '0' to the calling number if the origin of the call is in the wired network, and this digit leads into trouble with callback or detection of PBX internal and external numbers, it can be removed now. For this function, the byte 118 must be set to '7'.

1.5. Display own SIM number if CLIP from wired side is present

This new function leads the information through, if the caller wants a number to be displayed or not. The feature can be activated in globally 'General GSM settings' and individually in 'Individual call-setup list'.

1.6. DTMF code for GSM channel restart

For AS55X WLL there is a new DTMF code that restarts one specific or all GSM channels. This makes the GSM channel register preferably onto the home network of the SIM. This code is '#734#' for all channels, '#7341#' for the first and '#7342#' for the second channel.

1.7. Dial command with ISDN

The extended dial command feature is now available for ISDN BRI and PRI devices of the AS55X. If the AS55X is working in PassThrough mode and if a 'Code number for dialing from GSM to wired network' is specified, this one can precede the dialed number to ISDN in order to select the direction of the call.

1.8. Save call setup only from PBX domain

It is possible now, to avoid save call setups for external call sources from the PBXs point of view. That are mostly calls from the wired network to an extension that is forwarded to a GSM number (via the AS55X).

1.9. PassThrough backup

If the connection to fixed network is lost, all calls can be routed via GSM. For this feature, a licence is necessary.

1.10. TC63i and EU-3 in AS551

Now the wireless module types TC63i and EU-3 are possible in AS551 slave PCB. Usage of EU-3 will be necessary if only contact exits to an UMTS network.

Note: Telnet and SMS API are not possible with EU-3 !

1.11. Splash SMS

The SMS API is enhanced for sending of Splash SMS. Please refer to the latest version of SMS API description for the dedicated command.

1.12. Force EU-3 to dedicated network type

Normally the EU-3 module preferably registers to an UMTS network. If byte 121 is set to 1, it exclusively registers to a GSM network and if the byte 121 is set to 2, if exclusively registers to a UMTS network. This setting is globally for all channels.

2. Problem solution

2.1. WLL: Immediate work after device reset

After a device reset with the reset button it is no longer necessary to download a configuration with the service software. Standard phone and FAX operations are working immediately. But if the SIM requests a PIN, it must be entered by the DTMF command via the connected phone.

2.2. Duplication of read short messages via short message server

There are conditions that can result into duplication of read short messages via the short message server in devices that use the GSM module TC63i. This problem is fixed.

2.3. Instability after reception of a flood of broadcast messages

After reception of a great mass of broadcast messages (more than 200) without any gap, the AS55X could get instable. This had affect to all LAN functions, VoIP audio stream was chopped in that case. This problem is fixed with firmware 3.12.

Firmware and Service Software 3.13

1. New and improved features

1.1. Path replacement

Path replacement for ISDN QSIG applications is implemented, please ask the support for configuration.

1.2. Use any channel if selected group not ready

If for an outgoing call to GSM all channels of the by routing selected GSM group are busy or not registered, this call can be handled by any other available GSM channel. This feature has to be configured in 'Global call-setup'.

1.3. DHCP active after reset

After clearing configuration with the reset button, the internal DHCP server is now active. Hence, after reset the AS55X can also be accessed from computers without fixed IP addresses and without any additional settings to their network adapters if no other DHCP server is available in the network.

1.4. PH8 supported

The firmware now supports the PH8 module. With the AS550 WLL, download speed of up to 7.2Mbps is possible.

2. Problem solution

2.1. Fixed link ISDN B-channel to GSM channel

This issue only concerns the AS551 BRI 4V. If the fixed link between ISDN B-channel and the GSM channel is activated, this did not work properly for the GSM channel 3 and 4 in the direction from GSM to ISDN. This problem is solved.

2.2. Character '@' with SMS API

The character '@' (code 0 in the GSM alphabet) could not be sent or received via the SMS API. This problem is solved.

2.3. SIM blocked

Some SIM types have very long startup delays and during this delay, the SIM seems to be blocked. The firmware can handle this issue now.

2.4. Suppress SIP protocol elements

Some PBXes cannot handle the SIP PROGRESS request or session description (SDP) in the SIP RINGING request. PROGRESS can be suppressed by setting unnamed bit 68 and SDP in RINGING can be suppressed by setting unnamed bit 69.

2.5. Authentication to SIP BYE

Some PBXes need an additional authentication for the termination of a call. The AS55X can handle it now.

2.6. DNS and DHCP with WLL

In some cases DNS requests would not be forwarded to internet properly if no explicit DNS server IP address has been configured in AS550 WLL (e.g. if the computer gets its IP address from the WLL with DHCP). This problem is solved.

Firmware and Service Software 3.14

1. New and improved features

1.1. Routing by source numbers

Now it is possible to select a GSM channel group according to the CLIP of the wired side. Hence, GSM channels can be assigned to extensions. In PassThrough mode, this feature also can be used to avoid interception of calls from single extensions of the PBX.

In the individual call-setup list, the domain of the number (GSM or PBX) can be chosen. PBX numbers always have higher priority and are placed onto the top of the list. The routing information will be taken from the first matching entry in this list. E.g. if for a specific call both the extension number and the GSM number exist, the routing command of the extension entry will be used.

1.2. ProviderSimSwitch

The AS550 WLL now can be shipped as SimSwitch. SimSwitch in this case is not primarily designed for saving of costs. It is rather meant for looking for the best supply by any provider. This feature has to be licenced and configured. It is possible to enter an internet access set for each GSM/UMTS-channel.

There are some commands to be given from the wired side, that can control this facility.

2. Problem solution

2.1. Noise on audio calls with PH8

An audio call over the PH8 GSM/UMTS module could result into loud noise in single or both directions. This problem is solved.

2.2. Short message sending problem with MC55

With MC55 GSM modules the sent short message could be corrupted. This problem is solved.

Firmware and Service Software 3.15

1. New and improved features

1.1. Trace forward during LAN service session

If all received and sent LAN frames shall be traced, the frames for the service channel between computer and AS55X are excluded. Hence, trace forward in this case is possible now.

1.2. New module release of TC63i

The TC63i release 02.004 is supported now.

1.3. SIP upgrade

AS550 and AS551 BRI can now be upgraded for use with SIP.

1.4. Reverse IP remote access

Especially for the AS550 WLL, but in few cases for all other AS55X as well, there are Situations that prohibit from access via the existing remote access channels. Hence, a new channel is implemented so called 'Revers IP access'. For more informations ask the manufacturer.

1.5. Remote acces via Telnet channel of AS55X

An AS55X with Telnet can now directly and without a virtual COM port be used as hardware for a remote access session via GSM data. For use of this feature, Telnet must be selected instead of a COM port with the 'Via' selector.

1.6. Optimisation of the FAX stack

There are optimisations of the FAX stack done. Especially an intermediate quality check is ought to increase the probability of a successful transmission.

2. Problem solution

2.1. Short message sending problem with MC55

With MC55 GSM modules the sent short message could be corrupted. This problem is solved.

2.2. ISDN Sending complete in ISDN

Receiving the Sending Complete information element in ISDN will now override the expectation of further suffix digits in PassThrough mode. This is for better interception of calls with different called number lengths.

2.3. Park extension in SIP

Some PBXs assume an error if it parks a SIP connection and the peer entity does not stop sending the audio stream immediately. The AS55X takes account of now.

2.4. WLL550, Telephone rings instead of FAX device

In some cases if the calling FAX device does not send the CLIP to the WLL550 via GSM, the call was not assumed correctly as FAX call and the telephone was ringing. This problem is solved.

2.5. Charge signal only for outgoing calls

The charge signal for AS55X PRI and BRI was generated for outgoing calls to and incoming calls from GSM. This is corrected and from now on only present for outgoing calls to GSM.

2.6. BRI synchronisation problem

In single cases, call activities on that line, used for Synchronisation of the BRI interfaces could disturb the normal operation of the AS55X This problem is solved.

2.7. Blocking of BRI interface

There can occur an error situation, triggered by data communication errors between PBX and AS55X BRI, that make the AS55X remind in a permanent error state and block all calls. This problem is solved.

2.8. GSM netcode error

With Firmware version 3.14 the GSM netcode did not work in every cases, this is corrected.

Firmware and Service Software 3.16

1. New and improved features

1.1. Restrict speech codecs

In some areas there is audio distortion based on the usage of a specific codec in GSM network. With this firmware release, the allowed codecs can be restricted by settings of unnamed byte 122.

0: All codecs allowed

hexadecimal 81: AMR disabled

hexadecimal 82: HR disabled

hexadecimal 80: AMR and HR disabled

1.2. Star hash codes enabled for WLL

It is possible now to enter start hash codes e.g. to switch call forwarding in gsm networks. All codes beginning with a star can be entered normally. But all codes beginning with a hash must be entered in a special manner as the beginning with a hash will result in a conflict with DTMF commands of the WLL. For codes beginning with one hash please enter '1#', for codes beginning with two hashes please enter '2#'. E.g. to switch call forwardings off, '2#002#' has to be entered. To enable this feature, unnamed byte 9 must be set to 0 and unnamed bit 75 must be set.

1.3. CLIR with FAX calls

Outgoing FAX calls present the voice number instead of the FAX number of the SIM. This can result into confusion by the recipient, which number should be used for a reply. If unnamed bit 74 is set, the presentation of the number will be restricted, even if it is requested for voice calls.

1.4. Support of firmware version 03.001 of PH8 module

1.5. Simplified internet access of the WLL550

As long as internet access is not set by service software, the acces can be enabled by the DTMF code #721# and disabled by the code #720#. This setting will be removed with a cold start.

1.6. Support of WLL550 PCB revision 2

2. Problem solution

2.1. Suppression of FAX error correction

If the receiving FAX device provides polling, the suppression of error correction by the WLL550 did not work properly. This is corrected.

2.2. Improvement of the DHCP server

For WLL550 the DHCP server is improved for better handling of a changed IP address by the wireless network.

2.3. Very long boot time of GSM module

In some cases the GSM module needs very long time to start with reaction of commands and later to return the IMSI of the SIM. This is due to handling much data from the SIM. This will be tolerated now.

2.4. SMS callback request and VPN prefix

If the VPN prefix was used, SMS callback request did not work. This problem is solved.

2.5. SMS callback request with calling number missing

If the short message callback request was activated, the placeholder for the calling number was used and if the calling number actually was not present, the device could perform a restart. This problem is solved.

Firmware and Service Software 3.17

1. New and improved features

1.1. Support of PLS8

The firmware now supports the PLS8 module. With the AS550 WLL, download is possible with LTE speed.

1.2. APN list enhanced

For dialing in to wireless internet, the APN list contains the following entries (netcode,APN,username,password):

```
26201,internet.t-d1.de,td1,gprs
26202,web.vodafone.de,-,-
26203,internet.eplus.de,eplus,gprs
26207,internet,,
20404,web.vodafone.nl,vodafone,vodafone
20408,internet,KPN,gprs
20412,internet,,
20420,internet,t-mobile,t-mobile
20601,internet.proximus.be,-,-
20610,internet.be,mobistar,mobistar
22801,gprs.swisscom.ch,gprs,gprs
22802,internet,internet,internet
22803,internet,,
23201,a1.net,ppp@a1plus.at,ppp
23203,gprsinternet,gprs,
23205,web.one.at,web,web
23207,web,web@telering.at,web
```

If this list ought to be used, checking of 'Go online' in 'Wireless internet access' or entering the DTMF code '#721#' will be enough. If another or an alternative data set is necessary, it can be entered via 'Wireless internet access'. For Provider SimSwitch, please enter a '?' as APN in order to use this list.

1.3. SIP instant messaging

For sending of short messages, the SIP method MESSAGE is implemented. By default, the AS55X immediately answers with 202 final response (Accepted) after it received and accepted a message request. This behaviour can be changed with the unknown byte 127. With value 1, the AS55X will first send a provisional response and a final response, when the short message sending is completed. With value 2, the provisional response will be omitted.

2. Problem solution

2.1. FAX call handshake problem if sending FAX has no sender identification

In this case the handshake failed. This problem is solved.

2.2. No startup with TC63i and some SIM types

There are some kinds of SIMs, the TC63i driver did not proper startup with. This problem is solved.

2.3. Reverse IP remote access with WLL

The reverse IP remote access with WLL failed, if a user has internet access concurrently. This problem is solved.

2.4. Enhanced DNS server entries

For all AS55X devices that have the DNS server enabled (mostly AS550 WLL), it is no longer necessary to know the IP address in order to start a service session. Instead of the IP address, one of the device type names 'kuhnt.wll550', 'kuhnt.as550' or 'kuhnt.as551' can be entered as remote IP address.

Firmware and Service Software 3.19

1. New and improved features

1.1. Redesign and enhancements of short message features

Sending and receiving of short messages is possible now via a web server over all GSM channels of the AS55X. A full conversion of the character tables from/to GSM is implemented. With the configuration, a remote IP address can be linked to a dedicated GSM channel of the AS55X or a login with a set of username and password can be used to address a GSM channel. Either a short message handling parallel or concurrently to voice calls can be configured.

Sending and receiving of short messages with more than 160 characters is possible now via the SMS API as well as using of the alphabet conversion from/to GSM. Short message callback can also be used now with the WLL550.

1.2. Support of PLS8 Version 2

This firmware supports the PLS8 module version 2 with voice calls and short message services.