TOSHIBA

Strata® CIX™ Product Bulletin

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Announcing the GIPU VoIP Card for CIX40

Toshiba is pleased to introduce the GIPU8 for the CIX40 platform. The GIPU8 card in addition to Release 5.1 software gives the CIX40 a cost-effective solution that provides IP User Mobility, Redundancy at the desktop and Over-provisioning. The GIPU card, with a new generation DSP, provides robust performance and support up to 8 ports using G.711 or G.729. In addition, the GIPU also supports SIP Trunking.

Overview and Compatibility

The GIPU card is only available in one configuration.

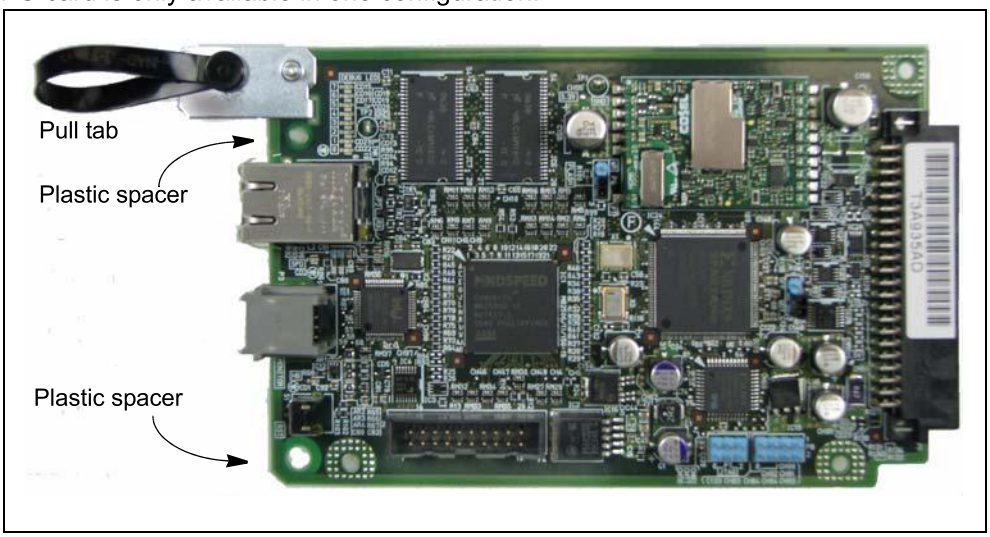

Figure 1GIPU8 Card

Card	Channels	Part Number	Systems
GIPU8	8	GIPU8-1A	CIX40 R1 or R2 with R5.2 MT009 software or later

The GIPU card supports:

- IP Mobility
- Redundancy at the Desktop
- Over-Provisioning
- SIP Trunking

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Product Positioning

With the GIPU card, CIX Release 5.1 provides IP solutions such as IP desk phones, SoftIPT phones, SIP phones, Wireless SIP Phones, IP User Over-provisioning, IP User Mobility, Redundancy at the desktop, Strata Net via VoIP Networking. In addition, the GIPU card supports SIP Trunking.

The GIPU like the MIPU cards is the next generation VoIP card for the CIX40 platform in the Toshiba product line. The GIPU card is compatible with LIPU,GIPH and MIPU cards for Strata Net environments.

New Features

The GIPU features include:

- Compatibility with MIPU, backward compatibility with LIPU and GIPH
- Designed specifically for the CIX40
- Log files collected remotely from the GIPU
- GIPU card uses one IP address.
- Tail-length echo cancellation increased from 32 ms to 64 ms (G.711 and G.729a)
- Quality of Service (QoS) threshold alarm notification and measurement
- IP Mobility support
- Connect between a node using G.711 A-Law codec and a node using G.711 Mu-Law codec.
- The maximum transmission interval of voice packet at using G.711 codec is 40ms. (It is 80ms in LIPU and GIPH)
- RTP ports used by IPTs can be user modified
- Continuous rebooting (even after six failed attempts)

Comparison Table

Table 1 Circuit Card Comparison Table

Feature	LIPU/GIPH	MIPU	GIPU8
Channels	GIPH: 8 Channels LIPU: 16 channels LIPU + LIPS = 32 channels	MIPU16: 16 channels MIPU24: 24 channels	GIPU8: 8 channels
Channel Limitation When LIPU tail length echo canceller is set to 32 ms with G.729a	GIPH: 6 channels LIPU:12 channels LIPU+LIPS: 24 channels	Not limited	Not limited
Voice Code	G.711 (Mu-law/A-law), G.729a	Same	Same
Echo Canceller	G.168 (04/2000) Tail Length is MAX 32ms	G.168 (04/2000) Tail Length is MAX 64ms	G.168 (04/2000) Tail Length is MAX 64ms
IP Address to use	GIPH and LIPU: 1 LIPU + LIPS: 2	One	One
RTP Packet Transmission Interval	20/30/40/80 ms	G.711: 20/30/40ms G.729a: 20/30/40/80 ms	G.711: 20/30/40ms G.729a: 20/30/40/80 ms
VoIP Protocol Support	Megaco+, SIP (Terminal), Strata Net IP	Megaco+, SIP (Terminal) Strata Net IP and SIP Trunking	Megaco+, SIP (Terminal) Strata Net IP and SIP Trunking
Priority Control	Diffserv, IEEE802.1q	Same as LIPU/GIPH	Same as LIPU/GIPH
NAT Traversal	xIPU does not support NAT Traversal	Same as LIPU/GIPH	Same as LIPU/GIPH
VLAN	LIPU and LIPS cards can be set separately	All channels are set the same	All channels are set the same
QoS Measurement	LIPU to IPT, Between IPT and IPT	Between MIPU and IPT Between IPT and IPT Between MIPU	Between GIPU and IPT Between IPT and IPT Between GIPU

Restriction

- GIPU does not support the IPT1000 series telephones
- Strata Net Nodes using LIPU/LIPS and GIPH cards must be running CIX Release 4.0 software or later software.
- The GIPU has a single IP interface. Programming parameter LAN IF:1 is used to configure the card
- (MIPU16 or MIPU24) parameter LAN IF:2 is disregarded. The following are set per card:
  - Priority Control (Diffserve, IEEE802.1p)
  - VLAN
  - IP Address
- The maximum voice packet transmission interval of G.711 is changed from 80ms to 40ms.

Card Type Programming (Program 100)

The card type specified in Program 100 is as follows

Hardware	Programming
GIPU8	GIPU8 (037)

GIPU Power Factors

The table below shows the GIPU PCB power factors

PCB	+5 V PF	-24 V PF
GIPU8	0.2	2.3

Strata Net IP

All of the Strata Net IP channels on a GIPU8 will be supported by one channel group.

Cabinet Card Slot

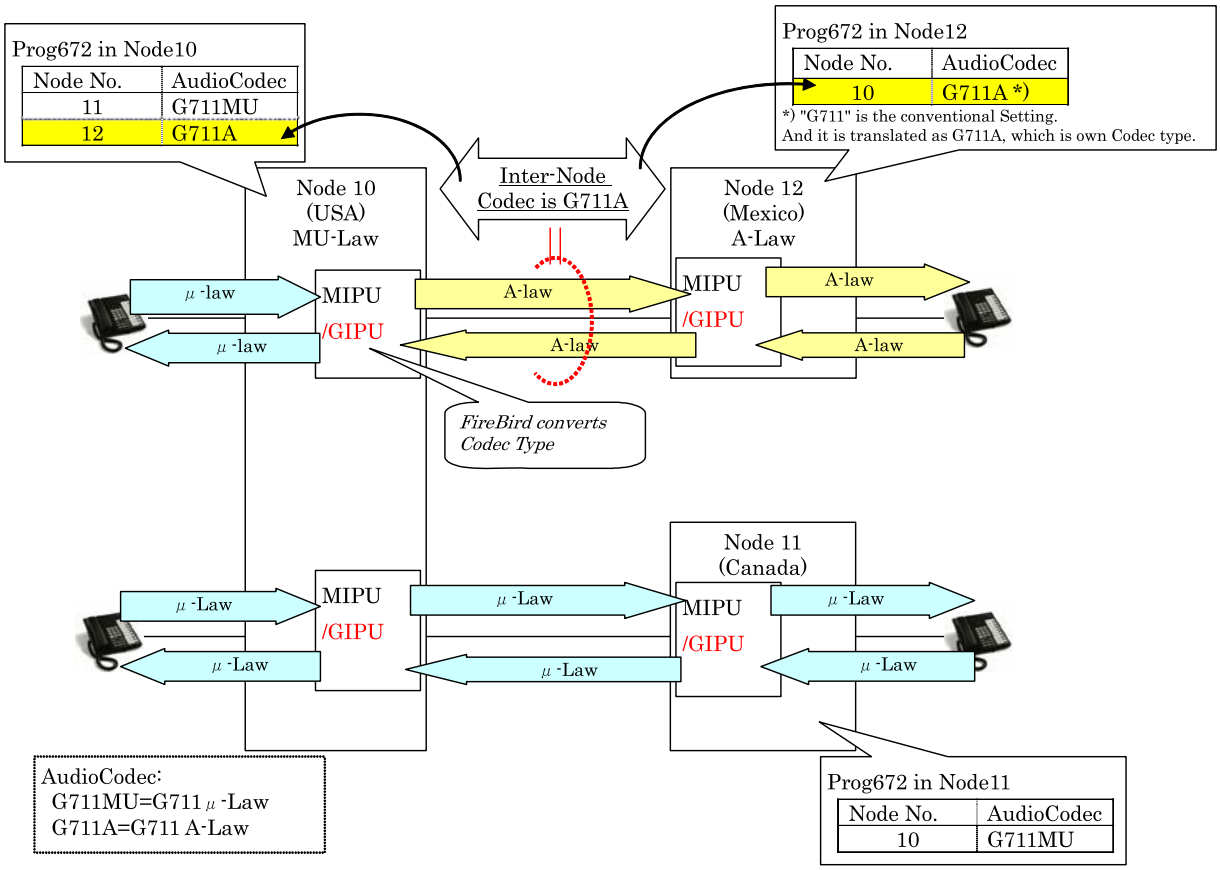
System	IP Ports		
	MIPU16	MIPU24	GIPU8
CIX40 R1	16	16	8
CIX40 R2	16	24	8

Important! If an MIPU24 is inserted into a card slot programmed as an MIPU16 it will operate as an MIPU16. An MIPU16 in a card slot programmed as an MIPU24 will not operate at all, it will be put into a fault-make-busy state.

Connection between G.711 A-Law and G.711

Mu-Law Nodes

In CIXR4.1MN0 and earlier software, the CODEC programming concerning G.711 Mu-Law or A-Law was based on the programming of the CODEC on the HW of that node. If the G.711 A-law/Mu-law codec setting was different than the other node, the voice communication had the problem. To avoid this problem G.729a must be selected as the inter-node codec. To connect between the nodes that are different in codec law, a new function is provided G.711 Mu-law and G.711 A-law are added into the list of codec types in parameter FK6 in Program 672. This is redefined as the codec type between own node and the other node which is described by FK0 in this program.



Remote Collection of GIPU Log Files

GIPU can collect log files and store the files for remote access through the LAN interface using FTP, the same as the firmware updating procedure.

There are three Log Files, Trace, Error and QoS. The QoS log is described in the QoS Measurement (QoS Alarm). section of this document.

eManager controls the procedure and the parameters, as follows:

- FTP Server Information: User Name, Password, Filename (this is only for Immediately mode). 10 sets of FTP server settings can be stored in the CIX database.
- GIPU Information: Slot position
- Transfer modes are: Immediately, Automatically or Stop

Mode	Sending timing	valid period
Immediately	When this mode is set log files start sending immediately. The file is sent one time, then returns to the previous status when it is finished.	Until finished sending (only one time)
Automatically	When any log file is full	Until the mode is set as “Stop”
Stop	Changes the mode from “Automatically” to “Stop” does not to stop sending files if files are being sent.	Until the mode is set to “Automatically” or, if in “Immediately”, when finished sending.

Rule of automatically transferred File Name is shown below.

Type of Log	Prefix	Unique Information	Time	Suffix
Error	ipuerror	[ID][Cabinet Slot]	[MM][DD][YY][HH][FF][SS]	log
Trace	iputrace			
QoS	ipuqos			

Unique Information is ID:CIX-ID, Cabinet Slot: cabinet and slot number.

Time means MM: month, DD: day, YY: year, HH: hour, FF: minutes, SS: second

(Example of transferred file name) CIXID:1, S102, at 10/16 17:30:15

Error Log file: ipuerror_0010102_1016173015.log

Trace Log file: iputrace_0010102_1016173015.log

QoS Log File: ipuqos_0010102_1016173015.log

GIPU Log Collection

The procedure of setting is shown below.

- CIX is set FTP server information. (The maximum number of this setting is 10)
  (Each setting has a setting number)
- CIX is set the transfer mode and FTP setting number about the target GIPU
- CIX relay these setting to the target GIPU. Then this GIPU works as this setting.

When GIPU restarts, the setting of this feature is recovered after it starts working.

Error Codes

When an error occurs, the error code detected in the GIPU is reported in the Error log in the SD card on the CIX40 processor and in the Error Management Information Block (MIB) variable for this feature.

Error Code is from 3xx to 5xx: Same as FTP error code.

Error Code	Meaning
0xx	**(Original Error Code)**
0	IDLE: Initial or ready to send in auto mode. (Not error)
1	SETTING: CIX is setting specified mode to GIPU (Not error)
2	SENDING: GIPU is sending log files. (Not error)
3xx	**Positive Intermediate reply**
332	Need account for login.
4xx	**Transient Negative Completion reply**
421	Service not available, closing control connection. This may be a reply to any command if the service knows it must shut down.
425	Can't open data connection.
426	Connection closed; transfer aborted.
5xx	**Permanent Negative Completion reply**
500	Syntax error, command unrecognized. This may include errors such as command line too long.
501	Syntax error in parameters or arguments.
530	Not logged in.
550	Requested action not taken. File unavailable (e.g., file not found, no access).
552	Requested file action aborted. Exceeded storage allocation (for current directory or dataset).
553	Requested action not taken. File name not allowed.

RTCP

GIPU supports RTCP protocol to RTP handled by GIPU. The action of RTCP on GIPU is as follows. The CIX40 does not have programming items for RTCP on GIPU.

- The RTCP port number is equal to RTP port number + 1.
- The packet interval of RTCP is equal to 5 second.
- GIPU does not support RTCP Extended Report (RFC3611).
- NAT traversal of RTCP is not supported.

The following table shows the pair of endpoints that transmit RTCP packets to each other.

RTP session supported RTCP

Endpoint of RTP / Session	IPT	SIP[1]	Media Gateway	Strata Net IP
IPT	X	X	X	–
SIP[1]	X	X	X	–
Media Gateway	X	X	–	–
IP-QSIG	–	–	–	X

[1] Depends on SIP terminal specifications.

QoS Measurement (QoS Alarm)

QoS Measurement

The QoS statistics information of each RTP session is collected and recorded. The following table shows the endpoint pairs that support QoS measurement.

When the RTCP is not guaranteed (ex. NAT traversal), the QoS statistics are not guaranteed.

	Destination Endpoints				
Measurement Target	IPT	IPT(NAT)	SIP	Strata Net IP	Media Gateway
IPT	OK	NG[1]	OK	_[2]	OK
IPT(NAT)	NG	NG	NG	–	NG
SIP	N/A[3]	N/A	N/A	–	N/A
IP-QSIG	–	–	–	OK	–
Media Gateway	OK	NG	OK	–	–

[1] Measurement statistics are Not Guaranteed

[2] Nonexistent case

[3] Not Available

When RTP session is disconnected, QoS statistics information is recorded. The information recorded by this feature, is as follows.

```
long    sent;                   // The number of packets sent
long    received;               // The number of packets received
long    delay;                  // The average delay time
long    jitter;                 // The average jitter
long    lossOfFraction, lossOfWhole;    // Ratio of packet loss
```

- QoS statistics information is recorded to file for QoS measurement.
- The file for QoS measurement can be get by the same way as that of getting log file remotely.
- The format of file for QoS measurement is comma-separated test. The following table shows the recorded information to this file.

Table 2 QoS Report Format and Syntax

Field No	value	format	Max number of character	Notes
1	Data type	A	1	“ “: normal “A”: Alarm
2	protocol	X	1	X=0~4 0: Media Gateway 1: IPT 2: IP-QSIG
3	Time Stump	MO/DD HH:MI:SS	14	MO=month (01~12) DD=day (00~31) HH=hour (00~23) MI=minute (00~59) SS=second (00~59)
4	Local IP Address	XXX.XXX.XXX.XXX	15	XXX=0~255
5	Local RTP port	XXXXX	5	XXXXX=0~99999
6	Remote IP Address	XXX.XXX.XXX.XXX	15	XXX=0~255
7	Remote RTP port	XXXXX	5	XXXXX=0~99999
8	Number of send packet	XXXXXXXXXX	10	XXXXXXXXXX= 0~4294967295
9	Number of receive packet	XXXXXXXXXX	10	XXXXXXXXXX= 0~4294967295
10	Jitter	XXXXXXXXXX	10	XXXXXXXXXX= 0~4294967295
11	Delay	XXXXXXXXXX	10	XXXXXXXXXX= 0~4294967295
12	Packet loss	XXXXXXXXXX	10	XXXXXXXXXX= 0~4294967295

Record Format Example

A,1, 06/28 12:10:50, 192.168.0.100,16384,192.168.1.200,16385, 1234567890, 1234567890,1234567890,

,1234567890,1234567890, ↓

QoS Alarm

Strata Net IP, Media Gateway

The thresholds to the following parameters can be programmed by Program 152. When which of these values exceeds the threshold value, and when these values return to normal value (less than threshold value), the event is recorded in the CIX40 error log and GIPU error log.

- Packet Loss Ratio
- Jitter
- Delay

IPT

The threshold programming (Program 152) is the same as that of Strata Net IP or Media Gateway. But an IPT cannot detect abnormal values of QoS parameters in a timely manner. Because the IPT sends the QoS statistics information to the xIPU when the RTP session is disconnected, the xIPU checks the QoS information at this time, and if there are any values beyond the threshold, the event is recorded in the CIX40 error log and the GIPU error log.

Specification of DSP Parameters Configuration

The DSP on the GIPU is configured by downloading a DSP Configuration File from the eManager computer to the GIPU. This process is more efficient and more accurate than using an eManager command. The GIPH parameters can be set by using Program 163 from a DKT, IPT or eManager, the GIPU DSP parameters can only be set with a Configuration file from eManager. The new process, compared with the GIPH process, is shown in Figure 4 on Page 15. The DSP configuration file can be saved in the system backup memory or on the eManager computer.

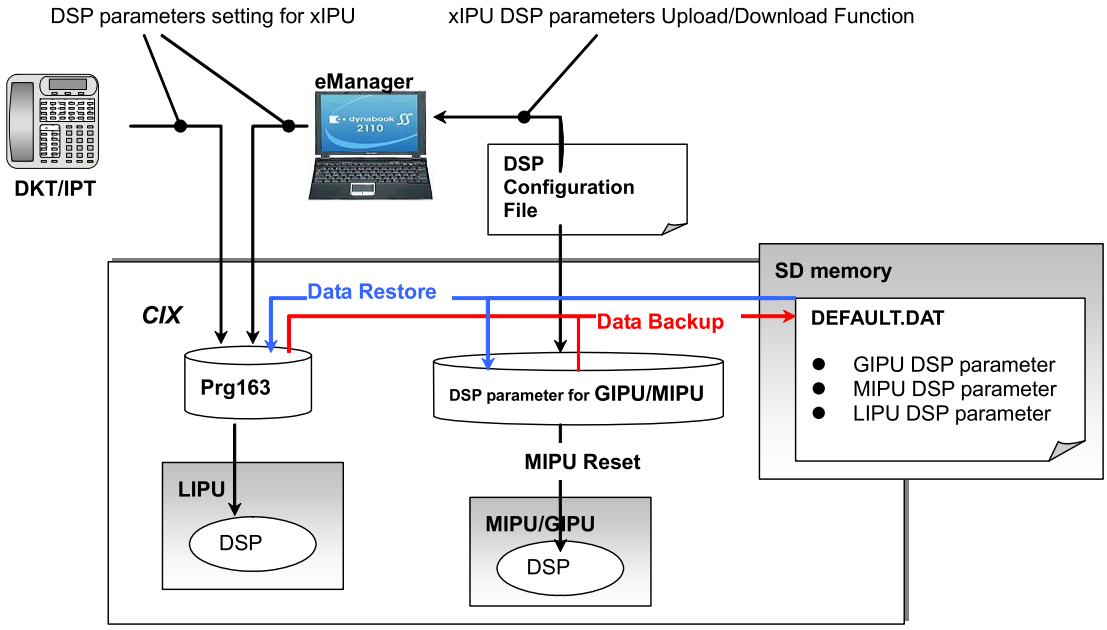


Figure 2 DSP Configuration File Load

Using eManager to set the DSP parameters by configuration file has the following features:

- eManager can convert the current DSP parameters to an MIB.
- eManager can monitor the CRC and stop the download if there is a mismatch
- CIX can backup the DSP parameters from the GIPU to the SD/SM card.
- The DSP parameter can be restored from the SD/SM card.

The version number of the DSP Configuration File can be displayed using eManager, Program 161 FK-19 as a part of firmware version. The GIPU version will display as MIPU_XX_XXY_AZXX

- MIPUXX_XX: firmware version
- Y: Boot loader version
- AZXX: DSP Configuration File version

  A: Country

  Z: Major version 0 ~ 9

  XX: Minor version 00 ~ 99

GIPU Program Update

The address for downloading the DSP Configuration file is:

ftp://GIPU IP Address/update/mipu/Configuration File Name

eManager will need to set the DataFileName as shown below.

Table 3 Mandatory Variables for updIpDkuGetFile

updIpDkuCommand	updIpDkuFtp-IpAddress	FTP Server Information		
		User Name	Password	Data FileName
updIpDkuGetFile	M	M	M	M
(Sample 1)	133.114.38.25	toshiba	tais	ftp://133.114.38.25/update/
(Sample)	133.114.38.25	toshiba	tais	ftp://133.114.38.25/update/lipx52

Voice Parameter Programming

How to use the voice parameter

New voice parameters for GIPU are added, because the GIPU hardware is different from that of GIPH. New voice parameters for the GIPU are the same as the MIPU.

The CIX programming items concerned with voice parameters are as followings.

- Program 107: PAD table assignment Programming PAD table to decide PAD value to the pair of connection of endpoint type.
- Program 150 FK19: Echo Canceller Tail Length for GIPU
- Program 152: Voice Packet Configuration Assignment Programming of Packet interval, QoS threshold, and so on. The index linked with these tables that are set to each IP stations and nodes.
- Program 250 FK07: Voice Packet Configuration Table Index Programming Voice configuration table index programming for IPT. This index is linked with index of Program 152.
- Program 672: Node ID Detail Information Table Assignment Voice configuration table index (linked with Program 152) Programming for the destination node of Strata Net IP connection.

PAD table

PAD Table for Strata Net IP on GIPU:

Program 107 PAD Table

		PAD Device or Group Number of Receiver (Listener)																
		Analog Telephone	DKT	Analog Trunk	T1 Trunk	ISDN Station	ISDN Trunk	CONF Bridge	Music Source	Ext. Paging	IPT1000 Telephone	IPT2000 Telephone	LIPU Strata Net	BIPU Strata Net	PRI Strata Net	MIPU/GIPU-IPT2000	MIPU/GIPU Strata Net	MIPU/GIPU SIP Trunk
PAD Device No. of Sender (Speaker)		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Analog Telephone	0	0	0	6	6	6	X	-	0	0	0	0	0	0	0	0	0
2	DKT	0	0	0	6	6	6	0	-	0	3	0	0	0	0	0	0	0
3	Analog Trunk	0	0	6	6	6	6	X	-	6	0	0	0	0	0	0	0	0
4	T1 Trunk	6	6	6	0	0	0	0	-	6	3	0	0	0	0	0	0	0
5	ISDN Station	6	6	6	0	0	0	0	-	6	3	0	0	0	0	0	0	0
6	ISDN Trunk	6	6	6	0	0	0	0	-	6	3	0	0	0	0	0	0	0
7	Conference Bridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Music Source	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Ext. Paging	0	0	6	6	6	6	0	0	0	0	0	0	0	0	0	0	0
10	IPT1000 Telephone	-6	3	-6	0	0	0	-6	-	-6	0	0	0	0	0	0	0	0
11	IPT2000 Telephone	12	3	12	12	12	12	12	-	6	0	0	0	0	0	0	0	0
12	LIPU Strata Net	12	0	12	12	12	12	12	6	6	0	0	0	0	0	0	0	0
13	BIPU Strata Net	0	0	-3	-3	-3	-3	-3	-3	-3	0	0	0	0	0	0	0	0
14	PRI Strata Net	3	3	3	3	3	3	3	3	3	0	0	0	0	0	0	0	0
15	MIPU/GIPU IPT2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	MIPU/GIPU Strata Net	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	MIPU/GIPU SIP Trunk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Change of voice attribute table

Program 163 now has voice attribute table for IPTs, SIP stations and Strata Net IP connected to xIPU. The cases of each endpoints connected to MIPU/GIPU will be added to this table.

Additional Definition: IPT, SIP station, Strata Net IP connected to an MIPU/GIPU

Voice Processor (VP141) Control Parameters Table for IPT connected to GIPH –X

		Echo Cancellation					Gain Control				Echo Cancellation2						
							CGC		VGC		Beta		Abs Th			Hang	IPT
No.	Device Type*1	NLP	Th	ADPT	CNG	BYPASS	En	De	In	Out	Mant	Exp	1st	2nd	Rel Th	Time	Mode
1	IPT (connected to BIPU-M)	Enable	2	Inhibit	Disable	Not Bypass	9	11	7	9	4	4	4	4	3	1	4
2	DKT	Enable	2	Always	Disable	Not Bypass	9	11	8	9	4	4	4	4	3	1	4
12	IP TRUNK (connected to LIPU-X)	Enable	2	Always	Disable	Bypass	9	9	9	9	4	4	4	4	3	1	4
13	IP TRUNK (connected to LIPU-X as "BIPU mode")	Enable	2	Always	Disable	Bypass	9	9	9	9	4	4	4	4	3	1	4
14*2	External paging device	Enable	4	Always	Disable	Not Bypass	11	9	4	9	4	4	4	4	1	1	4
15*2	Paging Group	Enable	2	Always	Disable	Not Bypass	9	11	7	9	4	4	4	4	1	1	4
16	IPT (connected to MIPU)	Enable	2	Always	Disable	Bypass	9	9	9	9	4	4	4	4	3	1	4
17	SIP (connected to MIPU)	Enable	2	Always	Disable	Bypass	9	9	9	9	4	4	4	4	3	1	4
18	IP-QSIG (connected to MIPU)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4
19	IP-QSIG (connected to MIPU as "BIPU mode")	Enable	2	Always	Disable	Bypass	9	9	9	9	4	4	4	4	3	1	4

GIPU Compatibility

Compatibility with Existing Services

GIPU offer the same services as GIPH, except for new additional services and modification for changing DSP. New additional services or modification of GIPU/MIPU are applied only to GIPU/MIPU, not to GIPH.

Compatibility in an IP System

- The CIX40 software must be version R5.2 or later.
- The existing IP terminals (IPT, SIP) can be installed on GIPU cards.
- GIPU, MIPU or GIPH can be installed in the CIX40 system.
  - User Mobility allows IPTs to move between LIPU,GIPU and MIPU.
  - Strata net between LIPU, GIPH, GIPU and MIPU is supported.
- Strata Net IP (Strata Net IP)
  - Updating all nodes: No problem.
  - Updating only one node of Strata net: No problem.
  - Adding one new node with an MIPU to existing Strata Net: No problem. If an MIPU24 is added, the 24 channels of the MIPU cannot be divided between Channel Groups.

IP Port Assignment:

- The number of UDP ports required for the MIPU, GIPU is different than the LIPU, GIPH, refer to the table below.

Function	Protocol Name	Ports	Type
Connection Request	Strata Net	4029	TCP
Call Control Channel	Strata Net	4096 - 8191	TCP
Registering IPT	RAS (H225.0)	1718, 1719	UDP
Call Control Channel	MEGACO+	2944	TCP
SIP Trunking Call Control Channel	SIP	5060	UDP
SIP Trunking Media Channels	RTP/RTCP	16384 - 65488	UDP
Media Channel for TDM Routing	RTP RTCP	16384 - 16511	UDP
Media Channel for NAT Traversal (See Note)	RTP	20480 - 20991	UDP
Media Channel for Strata Net IP	RTP RTCP	20992 - 24575	UDP

Hardware Compatibility

- MIPU or GIPU can be used on existing CIX40 hardware.

When used is a system that is a node in a Strata Net IP network the LIPU, GIPH and BIPU must be at the revision (or later) shown below.

- For Strata Net IP LIPX53, LIPU_01_03 or LIPU_02_01
- For Strata Net IP BIPU9G

Software Compatibility

CIX Software

The CIX40 software must be updated to R5.2 or later to support the GIPU.

Compatibility of CIX40 Programming Data

- New CIX configuration items for GIPU are added and some existing configuration items are modified. Configuration data used for these items cannot be taken over old CIX40 software that does not support MIPU.
  - Program 161 about LAN IF:2 is not used.
  - Program 325 about LAN IF:2 is not used.
- New CIX40 configuration items for GIPU are added and some existing configuration items are modified. So CIX40 configuration data to use these items cannot be taken over old CIX40 software that does not support the GIPU.
- The MIPU24 has a single IP Address. The LIPU/LIPS card set has 32 channels and uses two IP Addresses. The LIPU IP address in program parameter LAN IF:1, the LIPS IP address in LAN IF:2. Programming parameters for the LIPU/LIPS is not compatible with the MIPU.

Compatibility of Firmware of IPU

- The GIPU firmware is not compatible with the LIPU/GIPH.
- If LIPU/GIPH firmware is written to an GIPU by mistake the GIPU will not be damaged. The GIPU will reject the update and flag the attempt as a failure to update.

Automatic configuration of GIPU and IPT

- On initial boot, CIX40 configures the items concerned with the GIPU automatically. The initial value of IPU IP address is decided by the order of slot positions of xIPU cards.

CIX40 Software Requirement

GIPU installation requires CIX40 software R5.2 or later.

Updating CIX40 Software

- CIX40 system running R4.0 and later software can update to R5.2.
- CIX28 systems cannot update to R5.2

Programming a CIX40 When Replacing a GIPH with a GIPU

The programming process to replace an GIPH with an GIPU is as follows.

1. Remove all resources programmed on the GIPH.
2. Change the card type from GIPH to GIPU (Program 100.)
3. Change the System IP Data and Voice Packet Configuration as necessary. (Program 150, Program 152).

New Installation to CIX40

There are two methods for recognizing GIPU card.

- Manually configuring the programming card type
- Automatic Configuration, before power on, insert the GIPU card into a card slot.

After the GIPU is installed, the GIPU program the following as appropriate:

- IP address programming on Program 161. (IP address of LAN IF 2 is discarded
- IPT programming on Program 260. (Max 8 terminals can be set to use LAN IF 1).
- Strata Net IP (Strata Net IP) programming on Program 325. (Up to 8 channels can be set on LAN IF 1).

GIPU IP Address Assignment

The GIPU can be assigned a static IP address or it can use DHCP. The dynamic address option (DHCP) is only for SIP Trunk applications. GIPU cards used as IP Telephone interfaces must have a static IP Address.

- To assign a static IP Address enter the address, subnet mask, and default gateway data into FK01, FK02 and FK03 in program 161.
- To assign DHCP set FK21 to Enable and leave FK01 ~ FK03 blank. After the you click on the Submit button FK01 ~ FK03 will display the current DHCP address assignments.

Additional and Changed Programming Commands for the GIPU

Program	FK	Parameter	Value	Default
100	FK1	PCB Type	Added – GIPU8 The accommodation condition of GIPU is the same as GIPH with the same number of channels.	-
107	FK1	PAD Sender Device	Added - 15:MIPU/GIPU_IPT2000, and 16:MIPU/GIPU _STRATA NET, and 17: SIP Trunk	-
	FK2	PAD Receive Device	Added 15:MIPU/GIPU _IPT2000, and 16:MIPU/GIPU _STRATA NET, and 17: SIP Trunk	-
150	FK19 (new)	Echo Canceller Tail Length for GIPU	1:echoCancel 16ms 2:echoCancel 32ms 3:echoCancel 64ms Only for MIPU/GIPU. (BIPU, LIPU and GIPH use FK10)	(refer to modified command spread sheet)
152	FK8 (new)	Packet Interval for GIPU	1:10ms/ 2: 20ms/ 3:30ms/ 4:40ms/ 5:80ms (“80ms” is treated as “40ms” if the codec is selected as G.711). (Corresponding to FK1)	2:20ms
	FK9 (new)	Jitter Buffer Type for GIPU	1: Fixed / 2: Adaptive (Corresponding to FK2)	2: Adaptive
	FK10 (new)	Jitter Buffer Length for GIPU	0 to 200 ms (Corresponding to FK3)	100 ms
	FK11 (new)	Maximum Acceptable for GIPU	10 to 400 ms (Corresponding to FK4)	200 ms
	FK12 (new)	Packet Loss Ratio for GIPU	0 to 10% (Corresponding to FK6)	5%
	FK13 (new)	Packet Loss Threshold for GIPU	0 to 10% (Corresponding to FK7)	1%

161	FK7	LIPU Version Number Display1	MIPUXXXX-AYZZ (15 digits) MIPUXXXX: firmware version AYXX: DSP Configuration File version (Y: Major version 0~9, XX: Minor version 00~99)	-
	FK21	DHCP for GIPU	Enable: GIPU can get an IP Address via DHCP. Disable: IP Address must be assigned. Note: LIPU, LIPS, GIPH and BIPU do not support DHCP.	-
163	FK0	Device Type	Added 16: IPT (connected to GIPU) 17: SIP (connected to GIPU) 18: IP TRUNK (connected to GIPU) 19: IP TRUNK (connected to GIPU as “BIPU mode”) 20: SIP Trunk	-
	FK43	Security Code	My Phone Manager Password IP Mobility: DN Login Password (Refer to FK49)	-
	FK49	Use Login Authentication	Enabled: Password required to login DN Disabled: No password required to login DN	-
200	FK50	Use Transfer Registration	Enabled: (Allow IP Mobility) This DN can be logged in at another station Disabled: (IP Mobility not allowed for this DN) This DN cannot be logged in at another station	-
	FK51	Connecting Equipment Number	Display Only --Displays the equipment number of the xIPU this DN is connected to.	-
260	-	-	The maximum number of IPTs programmed on one GIPU/MIPU (MIPU24 is 24, GIPU is 8).	-
672	FK6	Voice Codec Type	Added 3:G.711MU and 4:G.711A 1:G.711 is kept to maintain interchangeability. When installing a new card or changing, 1:G.711 is not used as much as possible.	2 (G.711)

Table 4 GIPU and GIPH Reset Differences

		CASE	GIPH	GIPU
LAN network parameters	Program 161-FK1	“IP Address” is changed	Reset	Reset
	Program 161-FK2	“Subnet Address” is changed	Reset	Reset
	Program 161-FK3	“Default Gateway” is changed	Reset	Reset
	Program 161-FK4	“IP Address” is changed (LIPS)	Reset	Not Used
	Program 161-FK5	“Subnet Address” is changed (LIPS)	Reset	Not Used
	Program 161-FK6	“Default Gateway” is changed (LIPS)	Reset	Not Used
	Program 161-FK21	“DHCP Client” is changed.	Not Used	Reset
	N/A	GIPU gets new IP Address, Subnet Address or Default Gateway from DHCP Server.	Not Used	Reset[1]
Program update	-	After Program update is finished	Reset	Reset
Changing DSP parameters	Program 163	DSP parameters are changed from eManager or DKT/IPT	Not Reset	Not Used
	MIPU DSP configuration	DSP parameters are changed from eManager.	Not Used	Reset
Restoring DSP parameter from default.dat	Program 163	Restoring the programming data	Not Reset	Not Used
	MIPU DSP configuration	Restoring the programming data[2]	Not Reset	Reset

1 If “Default Gateway” is already set on Program 161 FK3, MIPU doesn’t reset.

2 CIX40 R5.2 has the DSP parameters database. CIX40 can backup the MIPU/GIPU DSP parameters to the default.dat file, and restore the MIPU/GIPU DSP parameters from the default.dat file. If you restore the default.dat to the CIX40 system, the MIPU/GIPU DSP parameters in the CIX40 database are downloaded to MIPU/GIPU, and the MIPU/GIPU will be restarted automatically. (The MIPU/GIPU will be restarted every time the restore is done, even if the DSP parameters in CIX40 database are default.) User Backup/Restore operations are the same.

Licensing

No new licensing for IP Mobility or SoftIPT 2.0. SIP Trunking will require a license: LIC-CIX-SIPT-CH

Training

Training will be available as a Tech Summit.

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