

Version Up Information of 2020

Release Note

NX-3000/5000 series

KAIROS DMR Repeater System

KPG-1013GW IP Gateway

KAS-20S /KAS-20C AVL/Dispatch System Software

KMC-60/62 Hand Microphone Series

Last Updated: July. 30. 2020

Language: English

Document No. RN-20-0001

Revision History

Version	Date of issue	Note
1.00	July. 03. 2020	First edition
1.01	July. 30. 2020	Revise Figure of System Structure.

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1. Release information

1.1. Product version and new products

Below table is listed version for each product that is used for July 2020 new function, and it is also described new products.

Products	Supported Version in this Release	
NX-5000 series	V4.30	
NX-3000 series	V3.30	
KAIROS System	Main Firmware	1.6.B.2_stable
	Controller Firmware	1.0.6.0_stable
	DSP Firmware	4.64
	PLD Firmware	After 4.13
	Operating System Firmware	01.08
	KAIROS Manager	1.7.10
IP Gateway (KPG-1013GW)	KPG-1013GW Version 1.20	
KAS-20C/KAS-20S	KAS-20S/KAS-20C Version 3.10	
New Products	Description	
KMC-60/62 Hand Microphone Series	KMC-60/62 Hand Microphone series will be released for successor model as KMC-30/32 series.	

1.2. Features

New features of July 2020 Version up are below. These features are able to work by this update.

- KPG-1013GW IP Gateway is able to connect to SIP Server, and NX-3000/5000 series support PABX and PSTN service.
- Function of "Call interruption (From KAS-20C)" can be used on DMR Tier II Conventional KAIROS System.
- "Individual Call between Consoles" is supported. A Console is able to call the other Console via IP Gateway server.
- SNMP Manager software is able to get SNMP MIB information from IP Gateway server.

1.2.1. Supported to the SIP Server system

DMR System is supported the function to connect to the Phone via SIP Server. KAIROS DMR based Trunking System and TIER II Conventional System are able to connect to the Phone System via IP Gateway (KPG-1013GW) Server. IP Gateway is able to connect to PABX or PSTN via SIP Server (e.g. Asterisk Version16).

1.2.2. "Call Interruption" Function for KAIROS DMR TIER II System

AVL/Dispatch System Software (KAS-20C/S) is able to use "Call Interruption" Function on DMR TIER II System from this update. IP Gateway and KAS-20C/S will be enabled this function, and KAIROS is able to support for their procedures.

1.2.3. Individual Call between Consoles

From this update, "Individual Call between Consoles" Function is supported to all DMR based system (S-Trunking, TIER III Trunking, TIER II Conventional). The function is able to call individual from one Dispatch console to another one Dispatch console. This call function is managed by IP Gateway. Each console is registered on IP Gateway, when one console request to connect another console ID, then IP Gateway responses each console, and it makes join consoles to the same RTP stream. Consoles will be able to communicate to each other by these procedures.

1.2.4. SNMP For IP Gateway

IP Gateway (KPG-1013GW) is supported SNMP from this update. SNMP Manager will be able to get the part of "ucdavis" subtree and so on. "snmpTraps" subtree also supported from this update.

1.2.5. Supported Feature List

Below table describes feature list of each product.

Products	Features			
	Supported to the SIP Server system	Tier II Call Interruption	Individual Call between Consoles	SNMP
NX-5000 series	✓	✓*1	-	-
NX-3000 series	✓	✓*1	-	-
KAIROS System	✓	✓*1	-	-
IP Gateway (KPG-1013GW)	✓	✓*1	✓	✓
KAS-20C/KAS-20S	✓*2	✓	✓*1	-

*1: It is already supported.

*2: Serial Connection does not support.

"-": Not available or Non-Support or No Relation

1.3. System Diagram

Outline of this version up is described in Figure 1.

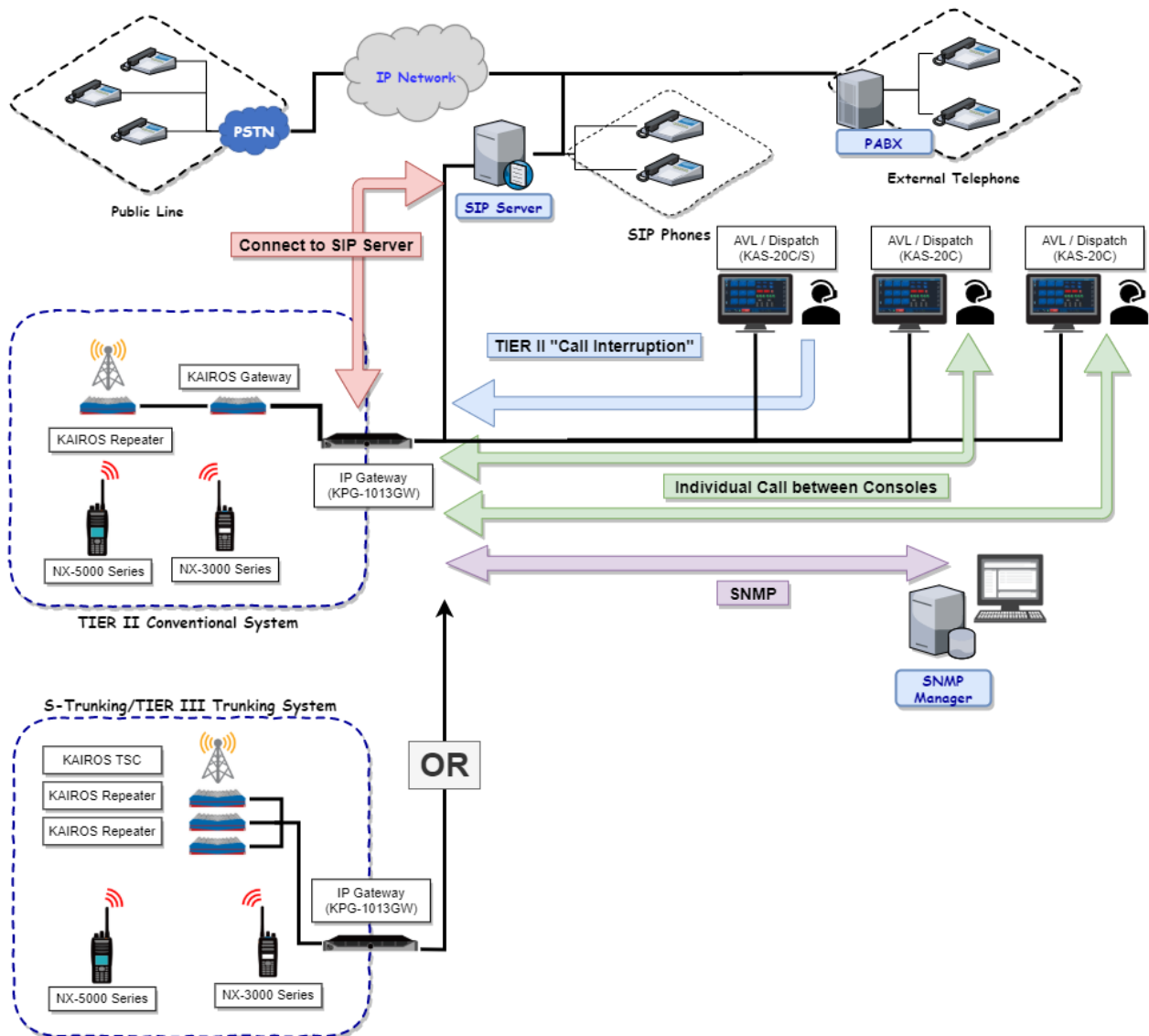


Figure 1: System structure

2. IP Gateway (KPG-1013GW)

2.1. License

IP Gateway will be supported new SIP Server Access License in this update.

➤ New license "KWD-1013SP"

This license is new license for IP Gateway that is able to connect SIP Server. If One license is applied on the IP Gateway Server, The DMR system will be able to connect simultaneously 10 lines to the PABX or PSTN Phone System via IP Gateway Server. Maximum up to 10 licenses will be able to install to IP Gateway Server. Therefore, maximum capacity of phone lines are 100 lines. This license does not depend on system type. Any system types (e.g.: TIER II Conventional, TIER III Trunking, S-Trunking) can apply this license on the IP Gateway Server.

2.2. Features

In this update, IP Gateway is able to access SIP Server mainly. Below is function list that is supported by this version up.

Features	S-Trunking	DMR TIER III	DMR TIER II	Note
Registration	✓	✓	✓	
Group Registration	✓	✓	✓	
Individual Call	✓	✓	✓	
Group Call	✓	✓	✓	
All Groups Call	✓	✓	✓	
Broadcast Call	✓	✓	✓	
Emergency Call	✓	✓	✓	
Paging Call	N/A	N/A	✓	TIER II Function
Unaddressed Call	N/A	N/A	✓	TIER II Function
Status Call	✓	✓	✓	
Short Data Call	✓	✓	✓	
Long Data Call	✓	✓	✓	
Voice with Data Call	✓	✓	✓	
Remote Control	✓	✓	✓	Stun / Kill / Revive
Individual Call between Consoles	✓*2	✓*2	✓*2	No PCH assignment.
Telephone Call / SIP Phone	✓*2	✓*2	✓*2	IP Gateway must connect to SIP Server.
Call Interruption	✓	✓	✓	TIER II: JVCKENWOOD Original Protocol S-Trunking/TIER III: Standard Protocol

Features	S- Trunking	DMR TIER III	DMR TIER II	Note
Open Voice Channel Mode (OVCM)	N/A	N/A	✓	TIER II Function
Scrambler	✓	✓	✓	
AES/DES Encryption	✓	✓	✓	
ARC4 Encryption	N/A	✓	✓	
Voice Logging	✓	✓	✓	
GPS Poling	✓*1	✓	N/A	USBD *1
Busy Monitoring	N/A	N/A	✓	Console is able to request to get busy status of KAIROS.
Supported SNMP	✓*2	✓*2	✓*2	It will be able to get MIB information by SNMP manager software.

*1: KAIROS DMR Repeater does not support on S-Trunking.

*2: This function is available from V1.20.

➤ Supported SNMP OID

Supported OID's are below.

OID	Describes	Supported SNMP Version
1.3.6.1.4.1.2021.4	Memory usage	SNMPv1 SNMPv2c
1.3.6.1.4.1.2021.9.1	Disk statistics	
1.3.6.1.4.1.2021.10.1.3	Load averages	
1.3.6.1.2.1.25.1.1	System uptime (Different from sysUpTime in the SNMPv2-MIB)	
1.3.6.1.2.1.2.2.1	Interface Information	
1.3.6.1.6.3.1.1.5	"snmpTraps" subtree	

3. KAIROS DMR Repeater

In this update, KAIROS Repeater is able to support PABX/PSTN Call via IP Gateway. Due to this KAIROS update, It will easy operation to clear call on TIER II Conventional system.

Also, KAIROS S-Trunking/TIER III Trunking System are able to recognize PABX/PSTN via IP Gateway, therefor the radio is able to call to the Phone.

3.1. Supported to PABX/PSTN (TIER II Conventional)

To support SIP Feature of KAIROS TIER II Conventional System was already described on the Application Note "AN-18-012". However, KAIROS System did not support the procedures of "Clear down" operation of the radio at that time^{*1}. In this update, KAIROS System is able to accept the "Clear down" operation by using the IP Gateway Server together, and you can configure the "Clear" button to the radio by FPU.

*1: If the radio would like to disconnect Phone call, PTT is pushed 3 times continuously.

3.2. Supported to PABX/PSTN (DMR Based Trunking)

KAIROS DMR based Trunking System (S-Trunking or TIER III Trunking) will able to communicate with the PABX/PSTN Phone system via IP Gateway Server. In this update, KAIROS System can be recognized and treated PABX/PSTN as the special DMR ID number to KAIROS DMR based Trunking System.

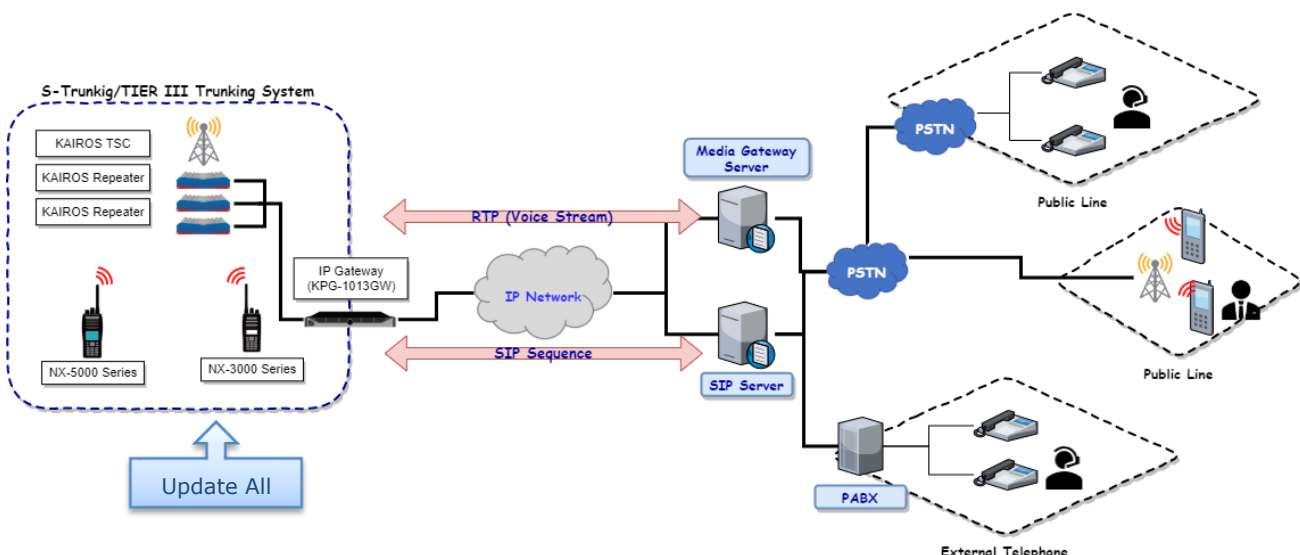


Figure 2: Outline of System structure that include PABX/PSTN System

If this PABX/PSTN call function needs to use, all firmware of NX series, and IP Gateway Software, and KAIROS Repeater firmware must be update.

(Refer section 1.1. Product Version)

4. AVL/Dispatch System Software (KAS-20C/KAS-20S)

4.1. Operating System and SQL Server

In this update, KAS-20C/S is able to support to bellow version of Operation system and SQL Server.

Products	Operation system	SQL Server
KAS-20C	Windows7 Windows8.1 Windows10	N/A
KAS-20S	Windows7 Windows8.1 Windows10 Windows Server 2012 R2 Windows Server 2016 Windows Server 2019	SQL Server 2014 SP3 Express SQL Server 2014 SP3 SQL Server 2016 SP2 Express SQL Server 2016 SP2 SQL Server 2017 Express SQL Server 2017 SQL Server 2019 Express (New) SQL Server 2019 (New)

4.2. Features

KAS-20 AVL/Dispatch System Software V3.10 is able to work bellow functions on the IP Network System. On the TIER II Conventional System, KAS-20 is able to interrupt another radio's transmitting. And also, if the system uses the new version of IP Gateway (V1.20), A KAS-20C is able to call directly another KAS-20C via IP Gateway. (Individual Call between Consoles)

Features	S-Trunking	DMR Tier III	DMR Tier II
Group Call	✓	✓	✓
Individual Call *1	✓	✓	✓
Broadcast Call	✓	✓	✓
All Call	✓	✓	✓
Status Message	✓	✓	✓
Emergency Status Message	RX Only	RX Only	RX Only
Short Data Message	✓	✓	✓
GPS Data Message	RX Only	RX Only	RX Only
Voice with GPS Report	RX Only	RX Only	RX Only
Long Data Message	✓	✓	✓
Enhanced (ARC4)	N/A	✓	✓

Features		S-Trunking	DMR Tier III	DMR Tier II
Transmit Interrupt (Call Interruption)		TX Only	TX Only	<u>TX Only</u>
Priority Call		N/A	✓	N/A
Emergency Call		RX Only	RX Only	RX Only
Emergency Alarm		RX Only	RX Only	RX Only
Dialing (Fleet Dialing Plan)		RX Only	RX Only	N/A
Radio Check		TX Only	TX Only	TX Only
Remote Control (Stun/Kill/Revive)		TX Only	TX Only	TX Only
Over-the-Air Alias		✓	✓	✓
Patch	Same Protocol	✓	✓	✓*3
	Different Protocol	✓	✓	✓*3
	Patch On/Off	✓	✓	✓*3
<u>PABX/PSTN Call</u> *2		RX Only	RX Only	RX Only
Voice Logging		✓	✓	✓*3
Map function (AVL Window)		✓	✓	✓

*1: "Individual Call between Consoles" is also supported.

*2: Console is able to receive only Group Call.

*3: Serial Connection does not support.

5. KMC-60/62 Hand Microphone series

KMC-60 / KMC-62 Hand Microphone series are released that are as the successor of KMC-30/KMC-32 Microphone series. These series can be selected on FPU Software "Microphone Type 2".

