

Using Geneos Devices and NK Series Devices in the Same Routing System

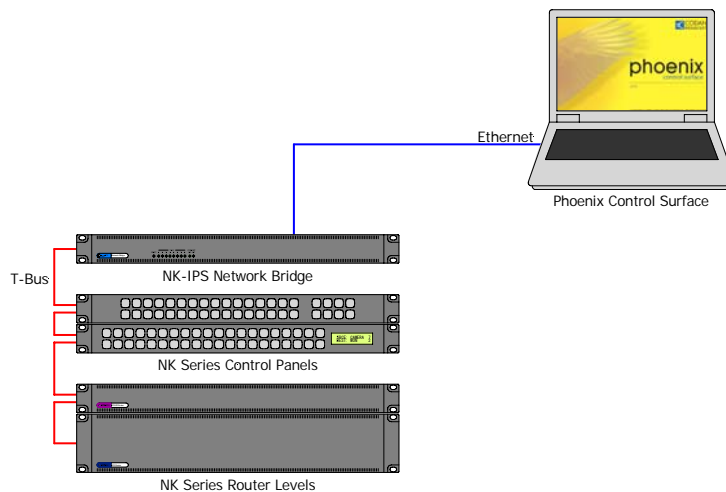
Introduction

The flexibility of the Codan Broadcast range of routing system components allows a choice of control systems (NK Series or Geneos), control panels (native NK or Geneos) and router level types (native NK or Kondor 2). This application note discusses possible system configurations and control options, while highlighting the differences between NK Series and Geneos control systems.

A Codan Broadcast routing system is defined by its control system and inherent architecture as either NK Series or Geneos. An NK Series system is characterized by its distributed control architecture, where each device incorporates its own control processor. A Geneos system on the other hand has a centralized architecture with a central CPU. A Codan Broadcast routing system can use both NK Series and Geneos devices, but must be controlled using either NK Series or Geneos as the control system, but not both.

NK Series System

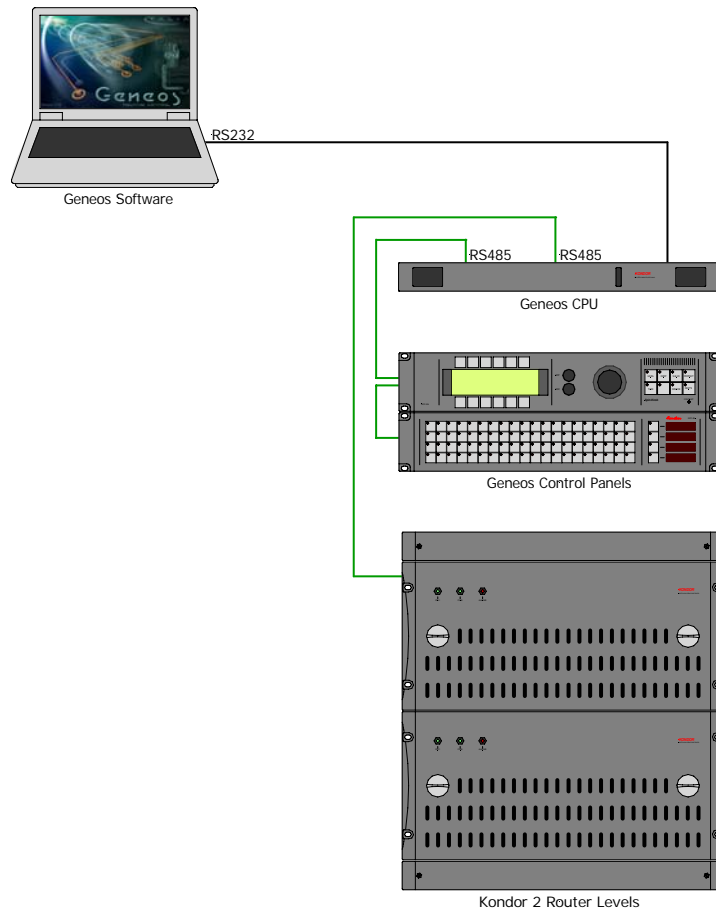
An NK Series routing system typically consists of NK Series control panels, router levels, and an NK-IPS Network Bridge. NK Series devices communicate via serial RS485-based connections which form the basis of the T-Bus distributed control system. Each device incorporates its own control processor and communicates using the T-Bus protocol specific to NK Series devices. System configuration, monitoring and control are via Phoenix Control Surface software.



NK Series Routing System

Geneos System

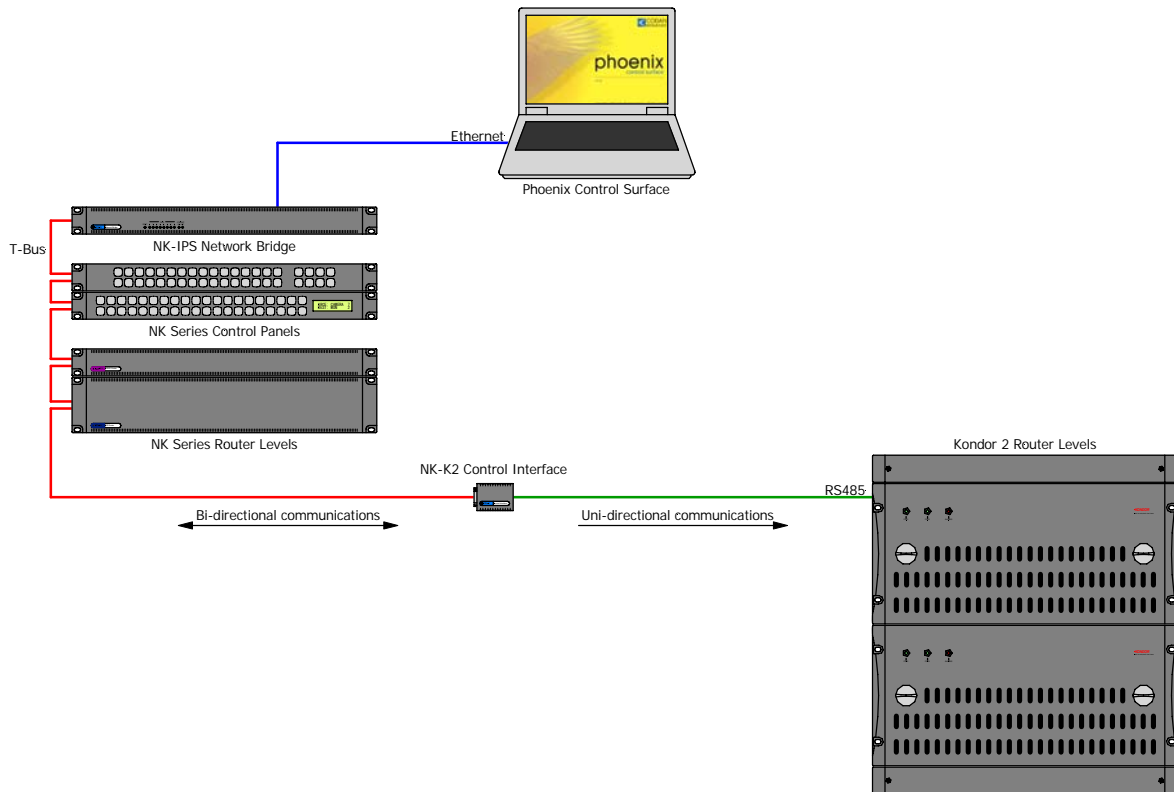
A Geneos routing system typically consists of a Geneos CPU, Geneos control panels and Kondor 2 router levels. Geneos devices communicate via RS485 connections with the Geneos CPU functioning as the central controller. Geneos control panels and Kondor 2 router levels communicate with the CPU using dedicated ports. System configuration, monitoring and control is via Geneos software.



Geneos Routing System

NK Series System with Kondor 2 Router Levels

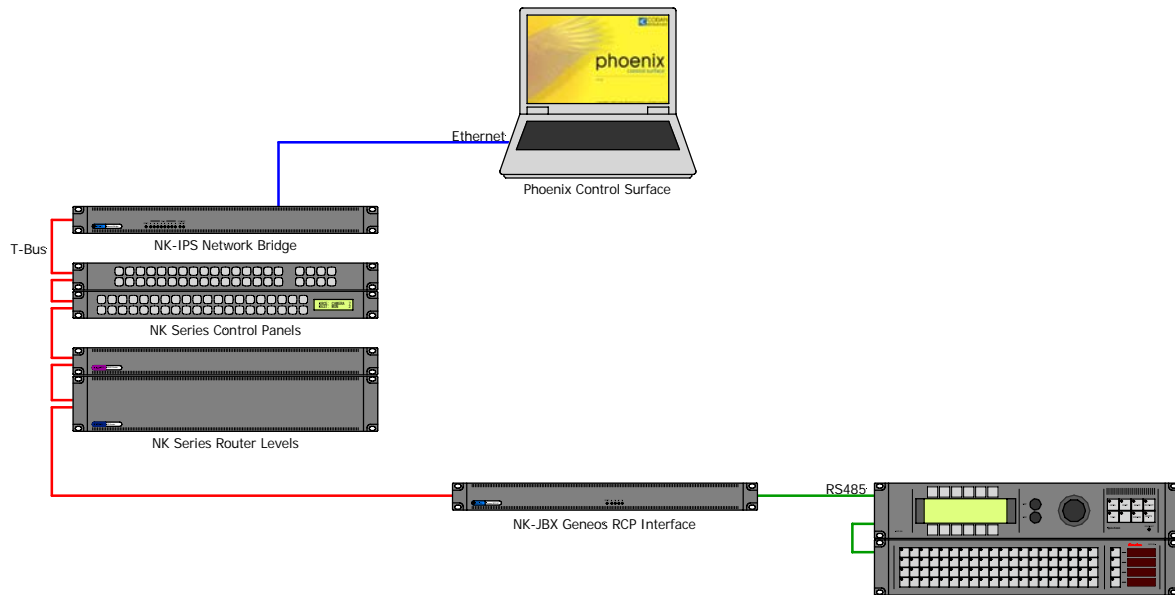
An NK Series routing system can be expanded to up to 256x256 (SDI and HDTV) and 128x128 (AES/EBU, Analog Audio and Analog Video) using Kondor 2 router levels. An NK-K2 Control Interface allows the Kondor 2 to be controlled by the T-Bus control system. The T-Bus control system issues switch commands to Kondor 2 router levels and requests the crosspoint status of the Kondor 2, which is held in the non-volatile memory of the NK-K2 Control Interface. The NK-K2 translates the T-Bus switch commands to the Geneos control protocol of the Kondor 2.



NK Series System with Kondor 2 Router Levels

NK Series System with Geneos Control Panels

Geneos control panels can be used with an NK Series routing system using an NK-JBX Geneos RCP Interface. The NK-JBX translates the protocol of the Geneos control panels to T-Bus so that they effectively function as native control panels within an NK Series system. Up to 252 Geneos panels can be connected to a single NK-JBX.

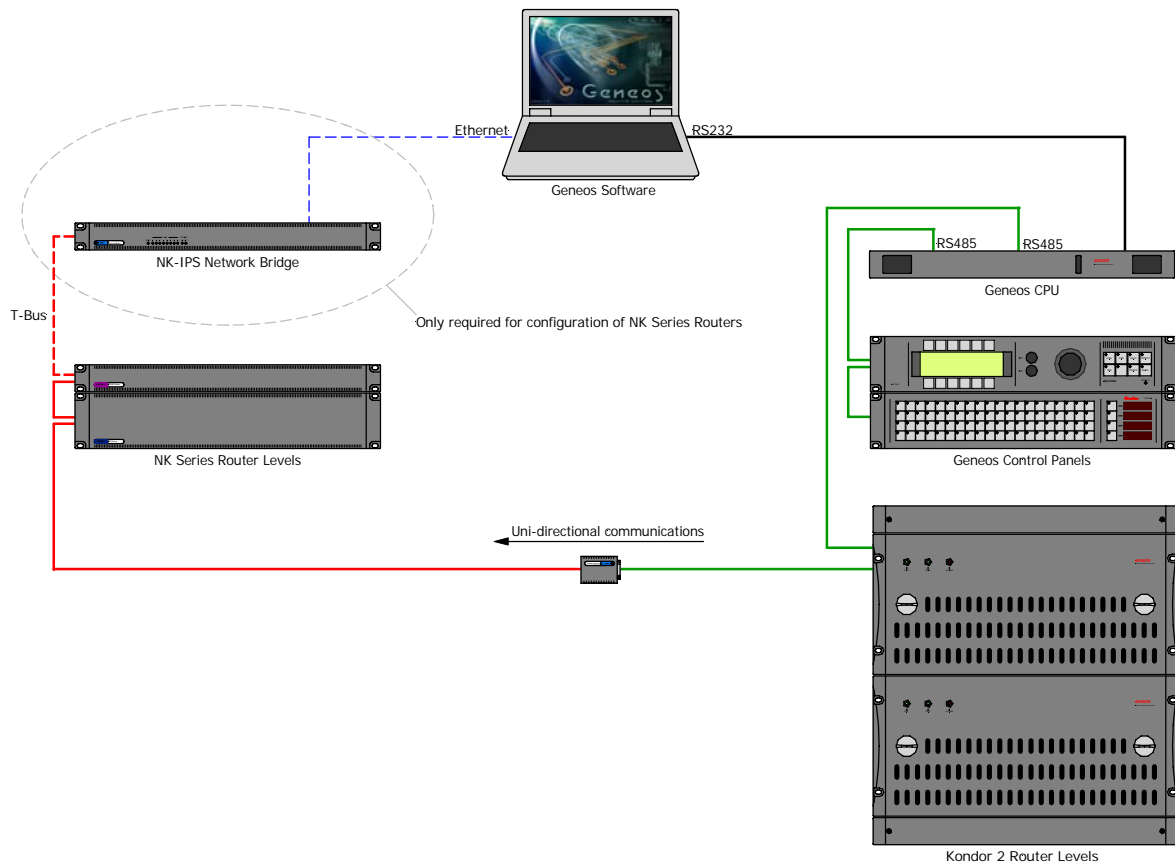


NK Series System with Geneos Control Panels

Geneos System with NK Series Router Levels

NK Series routers can be used as additional levels in a Geneos system using an NK-SCP/K2 Control Interface. The Geneos CPU issues switching commands to the NK Series router levels via the NK-SCP/K2 using a uni-directional connection. The NK Series router crosspoint status is held in the Geneos CPU and the NK-SCP/K2 translates the Geneos switch commands to the T-Bus control protocol of the NK Series routers.

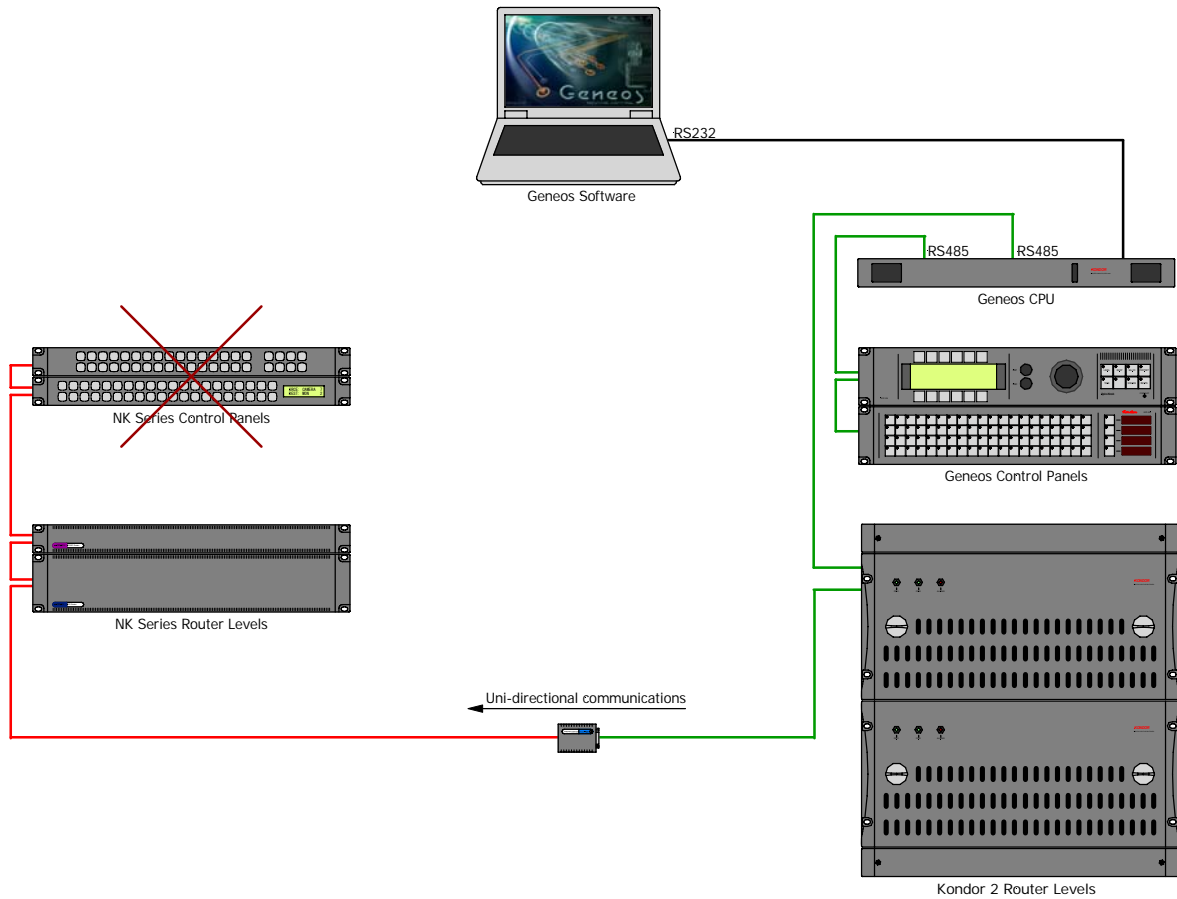
If required, NK Series routers may be configured using a web browser via an NK-IPS. In most cases this will not be necessary as the router levels can be simply mapped from Geneos.



Geneos System with NK Series Router Levels

Geneos System with NK Series Control Panels

It is **not recommended** for NK Series control panels to be used in a Geneos system where there is a Geneos CPU as the system controller. When a switch is made from an NK Series control panel, it is not possible for the updated crosspoint status to be received by the Geneos CPU due to the uni-directional nature of the communications between system devices. In other words, the Geneos CPU does not “know” a switch has been made from an NK Series control panel.



Geneos system with NK Series control panels (not recommended)

Summary

The following table summarizes the recommended Geneos and NK Series system configurations:

Control System	Software	Control Panels	Router Levels
NK Series	Phoenix	NK Series Geneos ^(Note 1)	NK Series Kondor 2 ^(Note 2)
Geneos	Geneos	Geneos	Kondor 2 NK Series ^(Note 3)

Notes:

1. Requires an NK-JBX Geneos RCP Interface, allowing up to 252 Geneos panels.
2. Requires an NK-K2 Control Interface.
3. Requires an NK-SCP/K2 Control Interface.