

Kawachinagano City Board of Education

Building High-Performance GIGA School Concept Environments with Highly Reliable Category 6A UTP Cables from Panduit

A wiring solution from a single manufacturer delivers long-lasting, high-quality performance in the educational space.

Kawachinagano City Board of Education

Address:

1-1-1 Haracho, Kawachinagano City,
Osaka Prefecture

Number of schools:

20
(13 elementary, 7 junior high schools)

Number of students:

Approximately 6,658
(as of May 1, 2019)

<https://www.city.kawachinagano.lg.jp/>

About Kawachinagano City, GIGA School Concept

Situated in the southeast corner of Osaka Prefecture, Japan, Kawachinagano City occupies the third largest area in Osaka with a population of about 100,000. Approximately 70% of the city area is within forest, and with a long history extending beyond 1,000 years, the city has an abundance of cultural heritage sites nestled within the natural environment.

Kawachinagano City is the third city in Japan to declare education as a key priority. The GIGA School concept is aimed at improving educational institutions' information and communication technology (ICT) environments, supporting high-speed, high-performance data communications. In its early stage, the plan includes the use of tablet computers for elementary and middle school educators, installing projectors and large-screen TVs in classrooms, and offering international exchange classes using teleconferencing systems. With the COVID-19 pandemic, the need to speed up the upgrading of the school networks become even more important.

Strategic Objectives

An Aging Population and COVID-19 Pandemic Accelerate the Need for ICT In Education

Hiroo Yamasaki, Education General Affairs Section Manager for the Education Promotion Department of the Kawachinagano City Board of Education Office, explains how the project was implemented: “Our city has made use of the School New Deal policy enacted by the government in 2009 to create an ICT-friendly learning environment, ahead of other cities. The concerning trends of low birth rates and aging population prompted us to look for ways to advance the utilization of ICT for education amid shrinking tax revenues. And with the COVID-19 pandemic, the GIGA School concept is accelerated to move ahead of schedule.”

One Device per Student

To achieve one network device per student, Kawachinagano City needed to renovate the wireless networks within its schools and supply devices for the 80% of student enrollment that was not previously supplied – all by the end of 2020. Takuji Hayakawa, a data specialist for the Education General Affairs Section, Education Promotion Department, explains the criteria that were considered. “In our city, we have moved forward with a three-year expansion plan that started in 2016, establishing wireless LAN environments within our schools in line with the schedule laid out in the School New Deal policy. When it comes to the GIGA School concept of conducting classes using one terminal per student in all classrooms, however, that’s a completely different story. A fundamental revamp of our network infrastructure was necessary. On the assumption that students will be using digital textbooks and videos in the near future, we selected Chromebooks for our devices, and at the same time we wanted a high-speed, high-performance network that could fit within our budget. Nippon Dentsu, who maintained our existing network, advised that the wiring installation, and not just our access points, would be absolutely critical.”

Selection Process

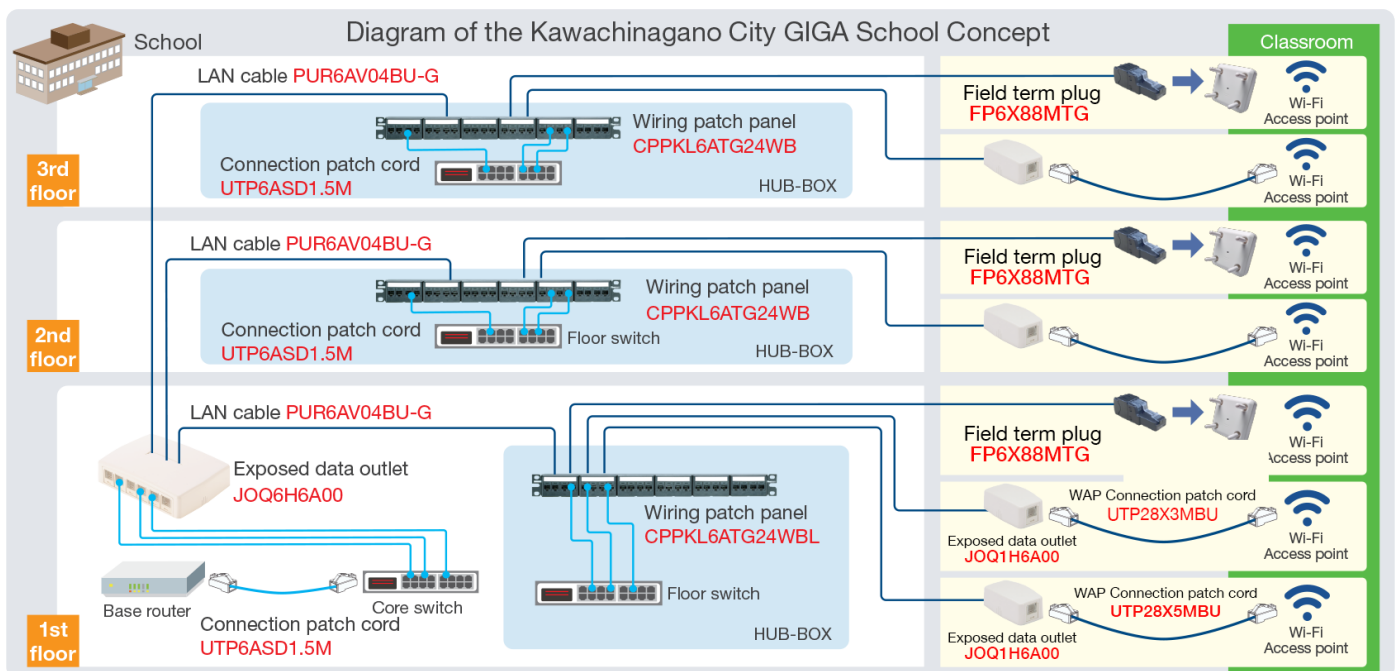
Wiring Quality is Critical to Maintain High-Speed Network Performance Over Time

The GIGA School concept standard specifications require the school networks to be Cat. 6A or better, capable of 10 Gbps connection, with wireless LAN access points in every classroom.

While trying to balance the cost of installation versus the long-term savings in future-proofing the network environment, Hayakawa highlighted the danger of just looking at cost. “Unlike a machine, the cabling inside a school building can’t be easily altered. Given the evolutionary progress around 5G, Wi-Fi 6, and other transmission technologies, we thought we should choose the highest-level, best LAN wiring that would enable us to easily accommodate current, and upcoming demands on the education network. Skimping on investment in this area not only impacts classroom transmission performance, it also raises concerns on installation costs for major upgrades in the future.”

In the end, the city emphasized quality as recommended by Nippon Dentsu, which it contracted for the installation work. They chose uniform use of Panduit products for all wiring materials and parts to be installed, including Cat 6A UTP cables, field term plugs, and patch cords connecting to floor switches and access points.

Panduit Cat. 6A 10Gig UTP Copper Cabling Systems incorporate patented MaTriX Technology and advanced connector compensation techniques for optimum network performance, design flexibility, and reliability to protect network investments well into the future. Each system provides users with headroom assurance that exceeds Channel Requirements of ANSI/TIA-568-C.2 Category 6A and ISO 11801 Class E_A Standards for supporting 10GBASE-T transmission over twisted pair cabling systems in a 4-Connector Configuration up to 100 meters.



Results



Hiroo Yamasaki

Manager
Education General Affairs Section,
Education Promotion Department,
Kawachinagano City Board of
Education Office



Takuji Hayakawa

Director
Education General Affairs Section,
Education Promotion Department,
Kawachinagano City Board of
Education Office

GIGA School Environment Construction Completed Ahead of Other Cities, Provides New Educational Standards on High-Quality ICT Infrastructure

Installation work scheduled for the summer break period in the initial Kawachinagano City municipal plan was implemented earlier than planned. Deployment at all schools was completed in July 2020.

Hayakawa noted that, “We started work earlier, anticipating a potential shortage of equipment and personnel once all cities implement this program nationwide. We moved the schedule forward, selecting a contractor from the bidding stage in April, then conducting our site inspections during the May break.”

The city is moving forward with procurement of the remaining devices for instructional use and plans to have the schools completely equipped within the year.

Yamasaki concludes that, “Equipping schools with the best ICT hardware for learning, within budget, is our professional duty. Not only did we complete ahead of other cities, we’ve also achieved high-quality ICT infrastructure for the GIGA School environment. Moving forward, we will work in partnership with the school, the related administrative divisions, and adjacent municipalities on putting this system to its fullest use in education. I look forward to the continued expansion of ICT use, as well as collaborative work with Nippon Dentsu and Panduit.”



Takeshi Komine

Platform Services Department Manager,
ICT Technology Headquarters,
Advanced Technology Operations Dept.



Yasuhide Tsujita

Public Sector Sales Group Senior
Manager and GIGA Schools
Promotion Office Director, Solution
Sales Dept., Advanced Technology
Operations Dept.

Construction Partner

Nippon Dentsu Corporation

“In order to build a GIGA School network environment for this project in line with the wishes of the Kawachinagano City Board of Education, we used Panduit products for all wiring materials including Cat. 6A UTP (10 Gbps) cables. High-quality installation was needed, and in order to maintain high performance over the long term, we thought the best choice would be to uniformly go with a single manufacturer, and to use Panduit products because they are the most reliable. Moreover, although Cat. 6A cables have wider outer diameters than Cat. 5e or Cat. 6 cables, which tends to make installation work cost more, Panduit Cat. 6A UTP cables are slimmer than those of other manufacturers, which heightened our cost-effectiveness. In realizing the GIGA School concept that will help children learn in the future, high-quality, highly reliable Panduit cable solutions are a promising presence, not just for the customers, but for our construction partners as well.”

<https://www.ndknet.co.jp/>

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