

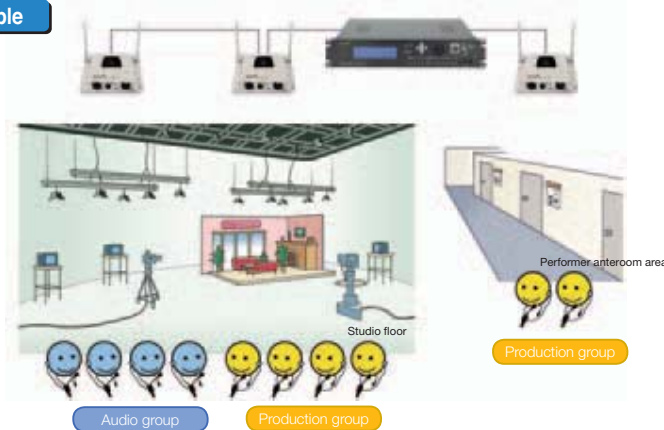
Digital Wireless Intercom System

Standard System



Leading the sector of simultaneous-call digital radio devices, Tamura's digital wireless intercom systems are used in a wide range of markets as highly reliable professional equipment. Their simple operability and stable communication performance, which Tamura has always paid special attention to since the early development stages, allow for a wide range of applications not only in broadcasting stations, halls and theaters, but also for industrial use.

1 System example



2 System features

- ▶ Radio station license is not required
- ▶ Communication of higher quality than analog system
- ▶ Quick connection
- ▶ Use of optional CS control unit (for long distance) enables extended connection between master unit and slave unit up to 800 m (standard: 150 m)
When the recommended cable [L-4E5C or DA206] is used

3 System standards

- 1) Used frequency: 1900 MHz band, 42 waves
- 2) Communication system: Multi-carrier TDMA-TDD system
- 3) Antenna power: 10 mW or less
- 4) Multiplicity: 4
- 5) Frequency switching: Synthesizer system by quartz control
- 6) Separation: 300 kHz (600 kHz separation in the same area)
- 7) Channel switching: MCA
- 8) Audio encoding system: 32 kbit/s ADPCM
- 9) Transmission rate: 384 kbit/s
- 10) Technical standard conformance: Conformity-certificated product
- 11) Radio station license: Not required

Base Station (BS) YFF-1870B



- Easily connected to wired intercom (2W/4W2 system)
- PGM input
- Independent use enabled using microphone/speaker
- Status display by LCD
- Up to 4 CS units can be connected
- Rack-mount type EIA=2U, JIS=2J

Specifications

Structure: Rack-mount type
 Power supply: AC 100 V~240 V
 Input/output: Microphone, SP, 2W/4W line, PGM, TEL
 Environment: -10~+50°C (excluding display panel (LCD) part)
 Weight: Approx. 7.0 kg
 Dimensions: Width: 480mm; height: 88mm; depth: 250mm
 (not including protruding portions)

Cell Station (CS) YRW-1870B



- Diversity system
- Compact and easily installed temporarily
- Operable with one microphone cable
(power supplied from BS)

Specifications

Structure: Wall-mounting and microphone stand mounting system
 Power supply: DC 24 V (supplied from the main device)
 DC 12V (external power supply)
 Number of calls: Simultaneous calls are possible in 1: 4
 Antenna: Diversity operation with shared transmission/reception and integrally structured case
 Channel setting: Multi-channel access system
 Standards: Technical standard conformance has been certificated
 Environment: -10~+50°C
 Weight: Approx. 430g (fittings included)
 Dimensions: Width: 153mm; height: 155mm; depth: 51mm
 (fittings included)

Power UNIT YPL-1800A Production on order



This product is necessary when five or more CS units are connected to one BS unit.

Specifications

Output voltage: 24V
Power supply: AC 100V
Environment: -10~+50°C
Weight: Approx. 6.0kg
Dimensions: Width: 480mm; height: 88mm; depth: 350mm
 (not including protruding portions)

Personal Station (PS) TWI-P190B



- Compact and Light focused on operability
- Operate with LR6 AA alkaline×2 or Nickel-hydrogen battery×2
- Big Volume Mode
*(Exclusive Headset is required Please ask us about details)
- Various kinds of setting information can be read and written using the Personal Station ID setting PC software.
- VOX Function (to Reduce Noise in Silence)
- Isolation Mode (with HS-316CTSW-002)
- CS by the main front of the switch, ID, can be set such as call group

Specifications

Structure: Compact, light, and Splash-proof IPX 4
 Power supply: AA alkali cell×2 or Nickel-hydrogen battery×2
 Continuous use time: 8 hours or more
 Call: Bidirectional call
 Antenna: Case-integrated (removal prohibited)
 Gain 2.14 dBi or less
 Channel setting: Multi-channel access system
 Standards: Technical standard conformance has been certified
 Environment: -10~+50°C
 Weight: Approx. 184g (batteries included)
 Dimensions: Width: 67.7mm; height: 127.2mm; depth: 25.5mm (including antenna)

HEADSET

HS-316C



Specifications (HS-316C)

Microphone part (condenser type)

Impedance: 1.6kΩ±30%
 Sensitivity: -73.0dB±4dB at 1kHz (0dB = 1V/0.5Pa)
 Frequency characteristics: 100Hz~10kHz

Receiver part

Impedance: 300Ω (cord resistance included)
 Rated input: 10mW
 Maximum permissible input: 300mW
 Output sound pressure level: 121dB at 1kHz (0dB=2×10⁻⁵ Pa)
 Frequency characteristic: 100Hz~3.5kHz

*HS-316C is exclusive for personal station

Battery pack

BH-190

AA alkali cell×2



* Batteries are not included

HS-126D



Specifications (HS-126D)

Microphone part (dynamic type)

Impedance: 200Ω±20% at 1kHz
 Inductance: 1.96mH±10%
 DC resistance: 190Ω±10%
 Sensitivity: -86dB±4dB at 1kHz (0dB = 1V/0.1Pa)
 Frequency characteristics: 100Hz~7kHz -10dB

Receiver part

Impedance: 8Ω±15%
 Inductance: 0.045mH±10%
 DC resistance: 7.7Ω±10%
 Maximum permissible input: 500mW
 Output sound pressure level: 112dB±4dB at 1kHz (0dB=2×10⁻⁵ Pa)
 Frequency characteristics: 50Hz~5kHz -20dB

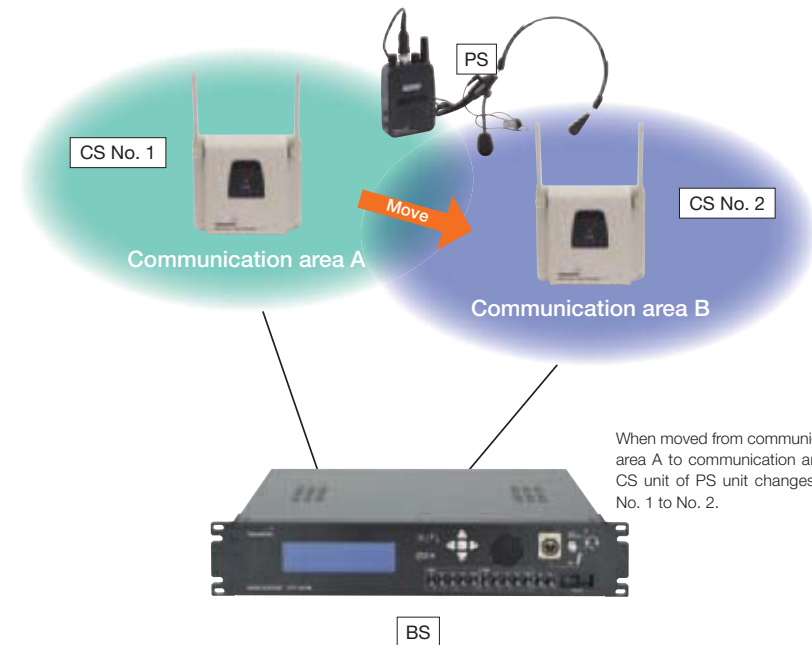
Outline of Digital Wireless Intercom System

- 1 One microphone cables connects between BS unit and CS unit, and between CS unit and CS unit
 Maximum 150 m between BS unit and CS unit, between CS units (recommended cable: CANARE L-4E5C or DA206)
- 2 Cascade connection up to 4 CS units is possible for one CS control unit in BS unit.
 Up to 4 CS control units can be mounted in one BS unit (When five or more CS units are connected to one BS unit, the Power UNIT [YPL-1800A] is necessary)
- 3 Up to 4 PS units can make a call to one CS unit.
- 4 PS units can be divided into 2 groups for use with one BS unit
- 5 No limit for use to the number of PS units dedicated for receiving command (When a PS unit dedicated for receiving command is used, the number of PS units that can be used is reduced by one)

Handover operation

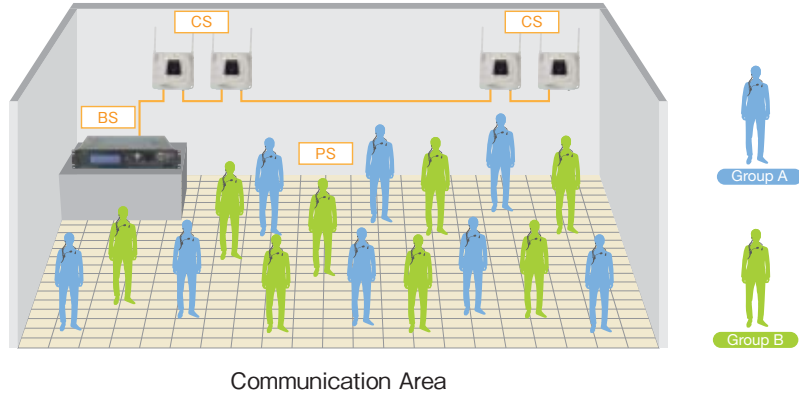
When the extension of communication area is desired, handover setting is available by the setting of PS unit.

Handover: The CS units to which a PS unit is connected are switched automatically



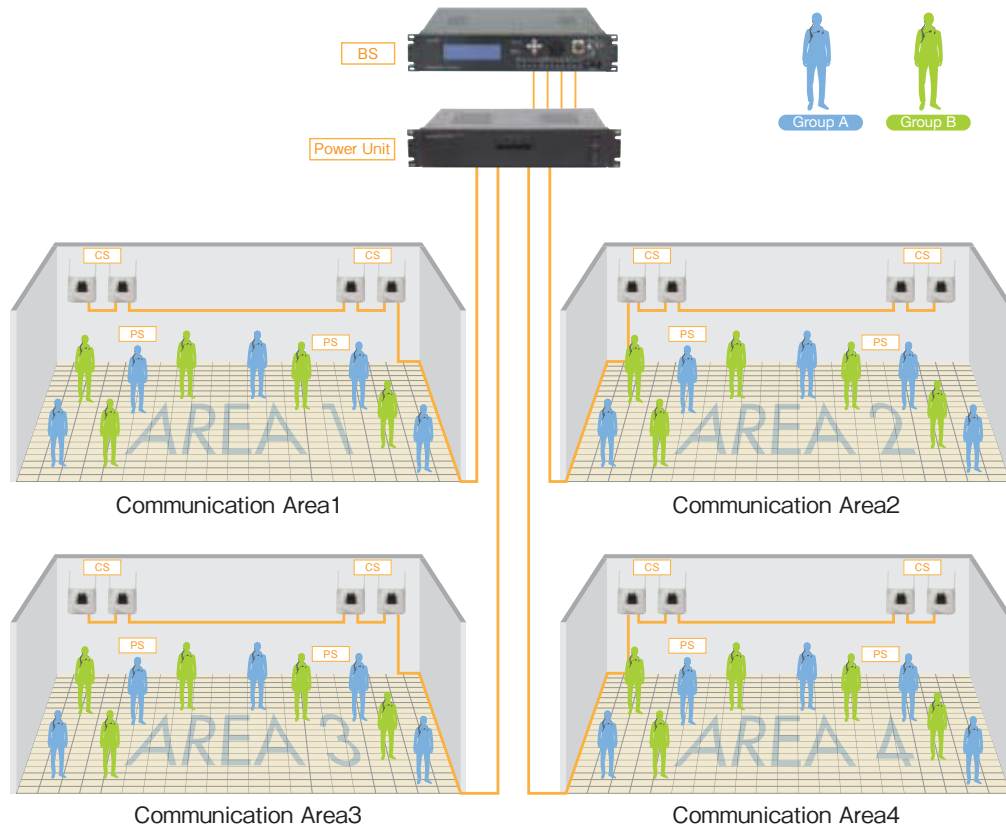
System example -1

BS: One unit CS: 4 units PS: 16 units



System example -2

BS: One unit Power Unit: One unit CS: 16 units PS: 40 units



Electrical characteristics

		BS YFF-1870B CS YRW-1870B	PS TWI-P190B
Common to high frequencies	Radio wave type	G7D, G7E, G7X, G1D, G1E, G1X	
	Antenna type	$\lambda/2$ sleeve antenna	Whip antenna
	Antenna impedance	50 Ω	
	Frequency range	1893.650~1905.950MHz	
	Number of frequencies	42 waves (control carrier 2 waves, communication carrier 40 waves)	
	Separation	300kHz	
	Oscillation system	Quartz control frequency synthesizer system	
	Frequency stability	Within $\pm 3 \times 10^{-6}$	
Transmission	Modulation accuracy	12.5% or less	
	Antenna power	10mW	
	Intensity of spurious radiation	2.5 μ W or less (beyond band) 250nW or less (within band)	
	Modulation system	$\pi/4$ shift QPSK	
	Audio frequency	3.4kHz or less	
	Neighboring channel leak power	600kHz mistuned 800nW or less, 900kHz mistuned 250nW or less	
Reception	Occupied frequency band area	Within 288 kHz	
	Reception system	Double superhetrodyne	
	Reception sensitivity	16 dB μ V or less (bit error rate 1×10^{-2})	
	Spurious sensitivity	47 dB or more	
	Neighboring channel selectivity	50 dB or more (600 kHz detuning)	
Common	Body radiation	4nW or less	
	Line frequency characteristic	3.4kHz or less	
	Line input/output	0dBm balanced	-
	Microphone input	-60dBm balanced	-60dBm unbalanced
	Speaker output	Inside 1W Outside 2W at 8 Ω	-
	External input	0dBm balanced	-
	Used power supply/ power consumption	AC100V $\pm 15\%$: 3A AC240V $\pm 15\%$ DC 12~24V: 1A (cell station only)	130 mA or less at DC 3V
	Use environment	Temperature: -10 ~ +50°C, Humidity: Within 30~90%	