# Notice for TAIYO YUDEN Products

Please read this notice before using the TAIYO YUDEN products.

## REMINDERS

Product information in this catalog is as of October 2018. All of the contents specified herein are subject to change without notice due to technical improvements, etc. Therefore, please check for the latest information carefully before practical application or use of our products.

Please note that TAIYO YUDEN shall not be in any way responsible for any damages and defects in products or equipment incorporating our products, which are caused under the conditions other than those specified in this catalog or individual product specification sheets.

- Please contact TAIYO YUDEN for further details of product specifications as the individual product specification sheets are available.
- Please conduct validation and verification of our products in actual condition of mounting and operating environment before using our products.
- The products listed in this catalog are intended for use in general electronic equipment (e.g., AV equipment, OA equipment, home electric appliances, office equipment, information and communication equipment including, without limitation, mobile phone, and PC). Please be sure to contact TAIYO YUDEN for further information before using the products for any equipment which may directly cause loss of human life or bodily injury (e.g., transportation equipment including, without limitation, automotive powertrain control system, train control system, and ship control system, traffic signal equipment, disaster prevention equipment, medical equipment classified as Class I, II or III by IMDRF, highly public information network equipment including, without limitation, telephone exchange, and base station).

Please do not incorporate our products into any equipment requiring high levels of safety and/or reliability (e.g., aerospace equipment, aviation equipment, medical equipment classified as Class IV by IMDRF, nuclear control equipment, undersea equipment, military equipment).

When our products are used even for high safety and/or reliability-required devices or circuits of general electronic equipment, it is strongly recommended to perform a thorough safety evaluation prior to use of our products and to install a protection circuit as necessary.

Please note that unless you obtain prior written consent of TAIYO YUDEN, TAIYO YUDEN shall not be in any way responsible for any damages incurred by you or third parties arising from use of the products listed in this catalog for any equipment requiring inquiry to TAIYO YUDEN or prohibited for use by TAIYO YUDEN as described above.

- Information contained in this catalog is intended to convey examples of typical performances and/or applications of our products and is not intended to make any warranty with respect to the intellectual property rights or any other related rights of TAIYO YUDEN or any third parties nor grant any license under such rights.
- Please note that the scope of warranty for our products is limited to the delivered our products themselves and TAIYO YUDEN shall not be in any way responsible for any damages resulting from a fault or defect in our products. Notwithstanding the foregoing, if there is a written agreement (e.g., supply and purchase agreement, quality assurance agreement) signed by TAIYO YUDEN and your company, TAIYO YUDEN will warrant our products in accordance with such agreement.
- The contents of this catalog are applicable to our products which are purchased from our sales offices or authorized distributors (hereinafter "TAIYO YUDEN's official sales channel"). Please note that the contents of this catalog are not applicable to our products purchased from any seller other than TAIYO YUDEN's official sales channel.
- Caution for Export
  Some of our products listed in this catalog may require specific procedures for export according to "U.S. Export Administration Regulations", "Foreign Exchange and Foreign Trade Control Law" of Japan, and other applicable regulations. Should you have any questions on this matter, please contact our sales staff.

## Wireless Module

Our recommended Line Up of Bluetooth®, W-LAN & GPS Module

■ For Smartphone Peripheral & IoT Solution

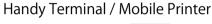






Bluetooth® low energy Module

For Industrial Market











WLAN (+BT)
Original or ON-board Antenna & FPC Connector

For IoT Solution & Industrial















GPS Full Module





Support for 2.4GHz & 5GHz BT+WLAN Module

\*As some of the Wireless Modules listed above are still under development, the specification is subject to change without prior notice. We also have Evaluation Kits for our modules.

For the latest information, please visit our web site at http://www.ty-top.com/ or feel free to contact our sales department.

\*\*The Bluetooth\*\* word mark and logos are owned by the Bluetooth SIG, Inc. and any use of such marks by TAIYO YUDEN CO., LTD. is under license. Other trademarks and trade names are those of their respective owners.

<sup>▶</sup> This catalog contains the typical specification only due to the limitation of space. When you consider the purchase of our products, please check our product specification sheets. For details of each product (characteristics graph, reliability information, precautions for use, and so on), see our website (http://www.ty-top.com/).

■ Bluetooth® low en	ergy N	/lodul	le																									
						F	uncti	on									I/F				Mod	dule t	ype	Ty	/pe a	pprov	/al	
Part number	BLE	ВТ	ANT	NFC	802.11a	802.11b	802.11g	802.11n	802.11ac	802.15.4 (Thread)	802.15.4g	GPS	GLONASS	UART	USB	PCM	SPI	12C	12.8	OIGS	SMD	Connector	Antenna	Japan	FCC	IC	CE	Remark
EYSKBNZWB	0		O	0						0				0	0		0	0	0		0		0	0	0	0	0*	32k X'tal,256k RAM, BT5(Full)
EYSLSNZWW	0		O											0			0	0			0		0	0	0	0	ô*	Ultra Small,24k RAM、BT5
EYSHSNZWZ	0		0*	0										0			0	0	0		0		0	0	0	0	0*	Ultra Small,64k RAM, BT5
EYSHJNZWZ	0		0*	0										0			0	0	0		0		0	0	0	0	ô*	64k RAM、BT5
EYSGJNZXX	0													0			0	0			0		0	0	0	0	0*	16k RAM
EYSGJNZWY	0													0			0	0			0		0	0	0	0	ô*	32k RAM
EYSGJNAWY-WX	0													0							0		0	0	0	0	0*	TY's APP
EYSLCNZWW	0		O											0			0	0			0		0	0	0	0	0*	32k X'tal,24k RAM、BT5
EYSHCNZWZ	0		0*	0										0			0	0	0		0		0	0	0	0	0*	32k X'tal,64k RAM、BT5
EYSGCNZXX	0													0			0	0			0		0	0	0	0	0*	32k X'tal,16k RAM
EYSGCNZWY	0													0			0	0			0		0	0	0	0	ô*	32k X'tal,32k RAM
EYSGCNAWY-WX	0													0							0		0	0	0	0	0*	32k X'tal,TY's APP

<sup>\*</sup>Softdevice S332

\*ETSI EN 300 328 v2.1.1 Conducted Test Report Available

■ Bluetooth®	low	energy	&	ANT	Module

						F	uncti	on									I/F				Мо	dule t	уре	Ty	уре а	ppro	val	
Part number	BLE	ВТ	ANT	NFC	802.11a	802.11b	802.11g	802.11n	802.11ac	802.15.4g	802.15.4g	GPS	GLONASS	UART	USB	PCM	SPI	12C	12.8	SDIO	SMD	Connector	Antenna	Japan	FCC	IC	CE	Remark
EYAGJNZXX	0		0											0			0	0			0		0	0	0	0	ķO	32k RAM

\*ETSI EN 300 328 v2.1.1 Conducted Test Report Available

#### ■ Bluetooth® Dual Mode Module

						F	unctio	on									I/F				Mod	dule t	ype	Ty	/pe a	ppro	/al	
Part number	BLE	ВТ	ANT	NFC	802.11a	802.11b	802.11g	802.11n	802.11ac	802.15.4g	802.15.4g	GPS	GLONASS	UART	USB	PCM	SPI	12C	12.8	OIGS	SMD	Connector	Antenna	Japan	FCC	IC	CE	Remark
EYSGCCAXX	0	0												0							0		0	0	0	0	0*	
EYSGCCSXX	0	0													0						0		0	0	0	0	0*	

\*ETSI EN 300 328 v2.1.1 Conducted Test Report Available

#### Sub-1GHz Module

						F	uncti	on									I/F				Mod	dule t	ype	Ty	уре а	ppro	/al	
Part number	BLE	ВТ	ANT	NFC	802.11a	802.11b	802.11g	802.11n	802.11ac	802.15.4g	802.15.4g	GPS	GLONASS	UART	USB	PCM	IdS	12C	128	SDIO	SMD	Connector	Antenna	Japan	FCC	IC	CE	Remark
SYSFCSAXX-XX											0			0							0		0	0				32k X'tal,32k RAM、31Multihop

### CPU Embedded WLAN Module

						F	uncti	on									I/F				Mod	dule t	ype	Ty	/pe a	pprov	/al	
Part number	BLE	ВТ	ANT	NFC	802.11a	802.11b	802.11g	802.11n	802.11ac	802.15.4g	802.15.4g	GPS	GLONASS	UART	USB	PCM	SPI	12C	128	SDIO	SMD	Connector	Antenna	Japan	FCC	10	CE	Remark
WYSACVLXY-XZ						0	0	0						0							0		0	0	0	0	0*	w/Cortex M4, 4M-Flash ROM
WYSACVLXY-XX						0	0	0						0							0		0	0	0	0	0*	TY's APP

\*ETSI EN 300 328 v2.1.1 Conducted Test Report Available

#### WLAN or WLAN+BT Module

							F	unctio	on									I/F				Mod	dule t	ype	Ty	pe a	pprov	/al	
Part n	number	BLE	ВТ	ANT	NFC	802.11a	802.11b	802.11g	802.11n	802.11ac	802.15.4g	802.15.4g	GPS	GLONASS	UART	USB	PCM	SPI	12C	128	SDIO	SMD	Connector	Antenna	Japan	FCC	IC	CE	Remark
WYSA	GVDXG	0	0			0	0	0	0	0							0				0	0		0	0	0	0	*	Dual Band Antenna(Chip)
WYSE	GVDXG	0	0			0	0	0	0	0							0				0	0		0	0	0	0	o*	RF Connector, (Limited antenna)
WYSB	HVGXG	0	0			0	0	0	0	0							0				0	0							
WYSA	GVDX7						0	0	0												0		0	0	0	0	0		
WYSA	AVDXB		0			0	0	0	0								0				0		0	0	0				

\*ETSI EN 300 328 v2.1.1 Conducted Test Report Available

#### ■GNSS Module

						F	unctio	on									I/F				Mod	dule t	уре	T	уре а	pprov	/al	
Part number	BLE	18	ANT	OHN	802.11a	802.11b	802.11g	802.11n	802.11ac	802.15.4g	802.15.4g	SdD	GLONASS	UART	USB	MOd	IdS	12C	128	oids	GWS	Connector	Antenna	Japan	FCC	IC	30	Remark
GYSFDMAXB												0		0								0	0					12x12x4mm Patch antenna

 $<sup>^{\</sup>triangle}\text{Plan}$  to support soft devices.

<sup>▶</sup> This catalog contains the typical specification only due to the limitation of space. When you consider the purchase of our products, please check our product specification sheets. For details of each product (characteristics graph, reliability information, precautions for use, and so on), see our website (http://www.ty-top.com/).

Bluetooth® low e Part number	Function	Module type	I/F	Feature	Outline [mm] (Height : Maximum)
EYSKBNZWB	Bluetooth® low energy v5.0(Full)	BLE Slave and Master	UART	w/CPU (Cortex M4F)	15.4 x 10.0 x 2.0
(nRF52840)	& 802.15.4 (Thread)	NFC-A Type-2	USB	32kHz Crystal	A A E
	& NFC-A Type-2	SMD type	I2C	Antenna	0
			SPI	1MB Flash	0.0
			I2S	256KB RAM	8
			PDM	FCC/IC/Japan certified	
			46 GPIO	ETSI EN 300 328 v2.1.1 Conducted	
EYSLSNZWW	Plustanth® law anamy vE 0	BLE Slave and Master	UART	Test Report Available w/CPU (Cortex M4)	8.55 × 3.25 × 1.0
(nRF52810)	Bluetooth® low energy v5.0	SMD type	I2C	Antenna	6.55 X 5.25 X 1.0
(IIRF32010)	(2Mbps Data Rate suppurt)	SMD type	SPI		
				192KB Flash	
			PDM	24KB RAM	
			15 GPIO	FCC/IC/Japan certified ETSI EN 300 328 v2.1.1 Conducted	
				Test Report Available	
EYSHSNZWZ	Bluetooth® low energy v5.0	BLE Slave and Master	UART	w/CPU (Cortex M4F)	8.55 × 3.25 × 0.85
(nRF52832)	& NFC-A Type-2	NFC-A Type-2	I2C	Antenna	
	,	SMD type	SPI	512KB Flash	
			I2S	64KB RAM	
			PDM	FCC/IC/Japan certified	
				ETSI EN 300 328 v2.1.1 Conducted	
			15 GPIO	Test Report Available	
EYSHJNZWZ	Bluetooth® low energy v5.0	BLE Slave and Master	UART	w/CPU (Cortex M4F)	11.3 x 5.1 x 1.3
(nRF52832)	& NFC-A Type-2	NFC-A Type-2	I2C	Antenna	[Page 1
		SMD type	SPI	512KB Flash	
			I2S	64KB RAM	D. [1]
			PDM	FCC/IC/Japan certified	
			15 GPIO	ETSI EN 300 328 v2.1.1 Conducted	64
				Test Report Available	
EYSGJNZXX	Bluetooth® low energy v4.2 (*)	BLE Slave and Master	UART	w/CPU (Cortex M0)	11.3 x 5.1 x 1.3
(nRF51822)		SMD type	I2C	Antenna	Tr/ all
			SPI	256KB Flash	
			14 GPIO	16KB RAM	E   E
				FCC/IC/Japan certified	
				CE Conducted test report available	
EYSGJNZWY	Bluetooth® low energy v4.2 (*)	BLE Slave and Master	UART	w/CPU (Cortex M0)	11.3 x 5.1 x 1.3
(nRF51822)		SMD type	I2C	Antenna	- all
			SPI	256KB Flash	E 18 18
			14 GPIO	32KB RAM	2   1
				FCC/IC/Japan certified	
				ETSI EN 300 328 v2.1.1 Conducted	[LL] , S4
				Test Report Available	
EYSGJNAWY-WX	Bluetooth® low energy v4.1	BLE Slave and Master	UART	w/CPU (Cortex M0)	11.3 x 5.1 x 1.3
(nRF51822)		SMD type		Antenna	Em/
		Taiyo Yuden Software Embedded		FCC/IC/Japan certified	<u> </u>
				ETSI EN 300 328 v2.1.1 Conducted	D. [1]
				Test Report Available	
EYSLCNZWW	Bluetooth® low energy v5.0	BLE Slave and Master	UART	w/CPU (Cortex M4)	12.9 × 9.6 × 2.0
(nRF52810)	(2Mbps Data Rate suppurt)	SMD type	I2C	Antenna	12.9 X 9.0 X 2.0
(1111 32010)	(ZIVIDPS Data Nate support)	SIMID type	l l		0.00 A A
			SPI	192KB Flash	
			PDM	24KB RAM	1.4
			30 GPIO	32kHz Crystal	1 1 2
				FCC/IC/Japan certified ETSI EN 300 328 v2.1.1 Conducted	
				Test Report Available	
EYSHCNZWZ	Bluetooth® low energy v5.0	BLE Slave and Master	UART	w/CPU (Cortex M4F)	12.9 × 9.6 × 2.0
(nRF52832)	& NFC-A Type-2	NFC-A Type-2	I2C	Antenna	# Commonwealth Com
/		SMD type	SPI	512KB Flash	*** FI
		Sino typo	I2S	64KB RAM	
			PDM	32kHz Crystal	[4]
				FCC/IC/Japan certified	
			JU GPIU	ETSI EN 300 328 v2.1.1 Conducted	
				Test Report Available	
			1	1	
EYSGCNZXX	Bluetooth® low energy v4.2 (*)	BLE Slave and Master	UART	w/CPU (Cortex M0)	12.9 x 9.6 x 2.0
(nRF51822)		SMD type	I2C	Antenna	production and the second of t
-			SPI	256KB Flash	N F
			29 GPIO		
				32kHz Crystal	
				FCC/IC/Japan certified	
				ETSI EN 300 328 v2.1.1 Conducted	0 1-0
			1	Test Report Available	
			<u> </u>		
EYSGCNZWY	Bluetooth® low energy v4.2 (*)	BLE Slave and Master	UART	w/CPU (Cortex M0)	12.9 x 9.6 x 2.0
(nRF51822)		SMD type	I2C	Antenna	
			SPI	256KB Flash	- N
			29 GPIO	32KB RAM	
				32kHz Crystal	1.9
				FCC/IC/Japan certified	
				ETSI EN 300 328 v2.1.1 Conducted	E ° 20
				Test Report Available	
	1		1		

<sup>▶</sup> This catalog contains the typical specification only due to the limitation of space. When you consider the purchase of our products, please check our product specification sheets. For details of each product (characteristics graph, reliability information, precautions for use, and so on), see our website (http://www.ty-top.com/).

Part number	Function	Module type	I/F	Feature	Outline [mm] (Height : Maximum)
EYSGCNAWY-WX	Bluetooth® low energy v4.1	BLE Slave and Master	UART	w/CPU (Cortex M0)	12.9 x 9.6 x 2.0
(nRF51822)		SMD type		Antenna	Programme and the second
		Taiyo Yuden Software Embedded		32kHz Crystal	*** A
		Talyo Tudeli Gortware Ellibedded			
				FCC/IC/Japan certified	
				ETSI EN 300 328 v2.1.1 Conducted	
				Test Report Available	
					0 00
	(*)Supported by S130				
■ <i>Bluetooth</i> ® low e	nergy & ANT Module				
Part number	Function	Module type	I/F	Feature	Outline [mm] (Height : Maximum)
EYAGJNZXX	Bluetooth® low energy v4.2	BLE Slave	UART	w/CPU (Cortex M0)	11.3 x 5.1 x 1.3
(nRF51422)	& ANT	ANT	I2C	Antenna	ent a
		SMD type	SPI	256KB Flash	<u> </u>
			14 GPIO	32KB RAM	5"   1
			14 01 10		
				FCC/IC/Japan certified	
			1	ETSI EN 300 328 v2.1.1 Conducted	
				Test Report Available	
■ Bluetooth® Dual		lu	- /=	le .	lo 5 1/11 1
Part number	Function	Module type	I/F	Feature	Outline [mm] (Height : Maximum)
EYSGCCAXX	Bluetooth® Classic and BLE	SMD type	UART	Integrated System Clock	15.4 x 10.0 x 2.0
			1	Antenna	
			1	FCC/IC/Japan certified	
			1	ETSI EN 300 328 v2.1.1 Conducted	
			1	Test Report Available	
				Tose Report / Wallable	
	1		1	1	
EYSGCCSXX	Bluetooth® Classic and BLE	SMD type	USB	Integrated System Clock	15.4 x 10.0 x 2.0
			1	Antenna	
			1	FCC/IC/Japan certified	
				ETSI EN 300 328 v2.1.1 Conducted	
				Test Report Available	
				Tose Report / Wallable	•
Sub-1GHz Module	Function	Madula tropa	I/F	Feature	Outline [mm] (Height : Maximum)
SYSFCSAXX-XX		Module type			
SYSFUSAXX-XX	IEEE802.15.4g	SMD type	UART	w/CPU (Cortex M3)	30.0 × 21.0 × 2.6
		Taiyo Yuden Software Embedded		Antenna	
				256KB Flash	
				32KB RAM	
				Japan certified	
■CPU Embedded W	/LAN Module				
Part number	Function	Module type	I/F	Feature	Outline [mm] (Height : Maximum)
WYSACVLXY-XZ	IEEE802.11b/g/n	SMD type	UART	Integrated System Clock	21.4 x 14.0 x 2.4
			SPI	Antenna	
			J		
			1	Supprt Micro AP	
			1	Supprt WiFi Direct	15
		İ	1	FCC/IC/Japan certified	8
			1	ETSI EN 300 328 v2.1.1 Conducted	[7]
				Test Report Available	To the state of th
				rest report Available	12
				rest Report Available	
				rest report Available	
WYSACVI XV-YY	IFFF802 11b/a/n	SMD type	IJART.		214×140×24
WYSACVLXY-XX	IEEE802.11b/g/n	SMD type	UART SDI	Integrated System Clock	214×140×24
WYSACVLXY-XX	IEEE802.11b/g/n	SMD type Original Software Embedded	UART SPI	Integrated System Clock Antenna	21.4 × 140 × 2.4
WYSACVLXY-XX	IEEE802.11b/g/n			Integrated System Clock	21.4 × 140 × 2.4
WYSACVLXY-XX	IEEE802.11b/g/n			Integrated System Clock Antenna	21.4 × 14.0 × 2.4
WYSACVLXY-XX	IEEE802.11b/g/n			Integrated System Clock Antenna Supprt Micro AP	
WYSACVLXY-XX	IEEE802.11b/g/n			Integrated System Clock Antenna Supprt Micro AP FCC/IC/Japan certified	21.4 × 14.0 × 2.4
WYSACVLXY-XX	IEEE802.11b/g/n			Integrated System Clock Antenna Supprt Micro AP FCC/IC/Japan certified ETSI EN 300 328 v2.1.1 Conducted	
WYSACVLXY-XX	IEEE802.11b/g/n			Integrated System Clock Antenna Supprt Micro AP FCC/IC/Japan certified ETSI EN 300 328 v2.1.1 Conducted	
WYSACVLXY-XX	IEEE802.11b/g/n			Integrated System Clock Antenna Supprt Micro AP FCC/IC/Japan certified ETSI EN 300 328 v2.1.1 Conducted	

<sup>▶</sup> This catalog contains the typical specification only due to the limitation of space. When you consider the purchase of our products, please check our product specification sheets. For details of each product (characteristics graph, reliability information, precautions for use, and so on), see our website (http://www.ty-top.com/).

Part number	Function	Module type	I/F	Feature	Outline [mm] (Height : Maximum)
WYSAGVDXG	IEEE802.11ac/a/b/g/n+ <i>Bluetooth</i> ® 4.2 (Chip antenna Type)	SMD type	SDIO PCM	Integrated System Clock 2.4GHz & 5GHz 11ac(HT80) Antenna FCC/IC/Japan certified ETSI EN 300 328 v2.1.1 Conducted	26.0 x 12.0 x 2.0
Wysegvdxg	IEEE802.11ac/a/b/g/n+ <i>Bluetooth</i> ® 4.2 (RF connector Type)	SMD type	SDIO PCM	Integrated System Clock 2.4GHz & 5GHz 11ac(HT80) External Antenna FCC/IC/Japan certified ETSI EN 300 328 v2.1.1 Conducted Test Report Available (Limited antenna)	26.0 × 12.0 × 2.0
WYSBHVGXG	IEEE802.11ac/a/b/g/n+Bluetooth® 4.2	SMD type	SDIO PCM	Integrated System Clock 2.4GHz & 5GHz 11ac(HT80)	12.6 x 8.9 x 1.9
WYSAGVDX7	IEEE802.11b/g/n	Connector type	SDIO	Integrated System Clock Antenna FCC/IC/Japan certified	20.0 x 11.0 x 2.15
WYSAAVDXB	IEEE802.11 a/b/g/n+ <i>Bluetooth</i> \$ 3.0	Connector type	SDIO PCM	Integrated System Clock Dual Band Antenna HT40 Japan certified	30.0 x 15.0 x 2.45
■GNSS Module					
Part number	Function	Module type	I/F	Feature	Outline [mm] (Height : Maximum)
GYSFDMAXB	GPS Full Module NMEA Output	Connector type	UART	Patch Antenna TCXO RTC LNA SAW On-chip Logger	23.2 x 15.3 x 6.9

<sup>▶</sup> This catalog contains the typical specification only due to the limitation of space. When you consider the purchase of our products, please check our product specification sheets. For details of each product (characteristics graph, reliability information, precautions for use, and so on), see our website (http://www.ty-top.com/).