LOW NOISE BLOCKDOWN CONVERTER

■ EUROPE: LNB FOR BROADCASTING SATELLITE

◆ Features

(1) Wide band type receiving all broadcasting channels (analog & digital) of Europe. [Universal LNB]
(2) Originally developed feed-horn waveguide makes the wide-band, low-noise characteristics possible.
(3) One of the industry's most compact and lightweight package
(4) Low consumption current design for energy saving [80 mA (TYP.): BS1R5EL100A etc.]

◆ Specifications

Destination		Europe, Astra/Eutelsat Satellite etc.		
Receiving polarization		Horizontal/Vertical polarization		
Model No. <Type>		BS1R3EL400A <4 output>	BS1R5EL200A <2 output>	BS1R5EL100A <1 output>
Input frequency (GHz)		10.7 to 11.7 [Low band], 11.7 to 12.75 [High band]		
Output frequency (MHz)		950 to 1 950 [Low band], 1 100 to 2 150 [High band]		
Local oscillation frequency (GHz)		9.75 [Low band], 10.6 [High band]		
NF (dB)		0.8 (TYP.) [Low band], 0.7 (TYP.) [High band], (1.0 dB MAX.)		
Conversion gain (dB)		50 to 60	46 (MIN.)	
Phase noise		-60 dBc/Hz @1 kHz (TYP.)	-60 dBc/Hz @1 kHz (TYP.)	-75 dBc/Hz @1 kHz (TYP.)
Cross-polar discrimination (dB)		25 (TYP.)/20 (MIN.)		
Supply voltage (V DC) (Polarization switching voltage)	Vertical polarization	11.5 to 14.0 (0/22 kHz)		
	Horizontal polarization	16.0 to 19.0 (0/22 kHz)		
Power consumption (mA)		180 (TYP.)/250 (MAX.)	150 (TYP.)/250 (MAX.)	80 (TYP.)/110 (MAX.)
Waveguide		Feed-horn (F/D=0.6)		
Output impedance (Ω)		75		
Output connector (F-type)		4-output (H/V, High and low switching)	2-output (H/V, High and low switching)	1-output (H/V, High and low switching)
Outline dimensions (mm)		62.8 × 143.2 × 165.5	61.5 × 135.6 × 129.5	140.0 × 60.0 × 60.0
Weight (g)		Approx. 530	Approx. 430	Approx. 180

BS1R3EL400A

BS1R5EL200A

BS1R5EL100A

■ U.S.A.: LNB FOR BSS SATELLITE BROADCAST

◆ Specifications

Destination		U.S.A. DBS-1 to DBS-3 (Direc-TV Satellite) etc.
Receiving polarization		Right/Left circular polarization
Model No. <Type>		BS1H3UP200A <2 output>
Input frequency (GHz)		12.2 to 12.7
Output frequency (MHz)		950 to 1 450
Local oscillation frequency (GHz)		11.25
NF (dB)		0.6 (TYP.) / 1.1 (MAX.)
Conversion gain (dB)		50 to 62 (TYP.)
Phase noise		-65 dBc/Hz @1 kHz (TYP.)
Cross-polar discrimination (dB)		30 (TYP.)/25 (MIN.)
Supply voltage (V DC) (Polarization switching voltage)	Right circular polarization	11.8 to 14.0
	Left circular polarization	16.0 to 19.0
Power consumption (mA)		120 (TYP.)/180 (MAX.)
Waveguide		Feed-horn (F/D=0.6)
Output impedance (Ω)		75
Output connector (F-type)		2-output (R/L switching)
Outline dimensions (mm)		135 × 117 × 63
Weight (g)		Approx. 300

BS1H3UP200A

Notice
In the absence of confirmation by device specification sheets, SHARP takes no responsibility for any defects that may occur in equipment using any SHARP devices shown in catalogs, data books, etc. Contact SHARP in order to obtain the latest device specification sheets before using any SHARP device.

LOW NOISE BLOCKDOWN CONVERTER

☆New product

■ JAPAN/ASIA/AUSTRALIA: LNBs FOR CS DIGITAL SATELLITE BROADCAST

◆ Specifications

Destination		Japan, Asia, Australia, CS Satellite
Receiving polarization		Horizontal/Vertical polarization
Model No. <Type>		BS1R5AQ100A
Input frequency (GHz)		12.25 to 12.75
Output frequency (MHz)		950 to 1 450
Local oscillation frequency (GHz)		11.3
NF (dB)		0.6 (TYP.) / 1.1 (MAX.)
Conversion gain (dB)		50 (MIN.)
Phase noise		-75 dBc/Hz @1 kHz (TYP.)
Cross-polar discrimination (dB)		25 (TYP.)/20 (MIN.)
Supply voltage (V DC) (Polarization switching voltage)	Vertical polarization	11.5 to 14.0
	Horizontal polarization	16.0 to 19.0
Power consumption (mA)		80 (TYP.)120 (MAX.)
Waveguide		Feed-horn (F/D=0.6)
Output impedance (Ω)		75
Output connector (F-type)		1-output (H/V switching)
Outline dimensions (mm)		140 × 60 × 60
Weight (g)		Approx. 180

BS1R5AQ100A

■ JAPAN: LNBs FOR CS/BS 110° SATELLITE BROADCAST

◆ Features

(1) Can receive 2 satellite broadcasts of 110° BS/CS digital
[Employs wide-band (1 GHz) circular → linear polarization conversion technology (septum waveguide structure)]

(2) Outstanding noise figure (NF) characteristics enabling compact design of antenna diameter. [NF: 0.6dB (TYP.)]

(3) Low current consumption design for improved energy saving. [80 mA (TYP.)]

◆ Standard Specifications

Destination		Japan CS/BS 110° Satellite	
Receiving polarization		Right circular polarization	Right/Left circular polarization
Model No.		BS1F6JP300A	☆ BS1F6JP100A
Input frequency (GHz)		11.71023 to 12.751	
Output frequency (MHz)		1 032.23 to 2 073	
Local oscillation frequency (GHz)		10.678	
NF (dB)		0.7 (TYP.) / 1.1 (MAX.)	
Conversion gain (dB)		48 to 60	
Phase noise		-75 dBc/Hz @1 kHz (TYP.)	
Cross-polar discrimination (dB)		25 (TYP.)/20 (MIN.)	
Supply voltage (V DC) (Polarization switching voltage)	Right circular polarization	9.5 to 18.0	13.5 to 16.5
	Left circular polarization	—	9.5 to 12.0
Power consumption (mA)		80 (TYP.)/120 (MAX.)	
Waveguide		Feed-horn (F/D=0.5)	
Output impedance (Ω)		75	
Output connector (F-type)		1-output	1-output (R/L switching)
Outline dimensions (mm)		96 × 53.07 × 71	
Weight (g)		Approx. 165	

BS1F6JP300A

* Outer cabinet is made upon request.

LOW NOISE BLOCKDOWN CONVERTER

■ JAPAN: LNB FOR DUAL CS BROADCAST

◆ Specifications

Destination		Japan, CS satellite (SKY PerfecTV)
Receiving polarization		Horizontal/Vertical polarization
Model No.		BS1D1JP100A
Input frequency (GHz)		12.2 to 12.75
Output frequency (MHz)		1 000 to 1 550
Local oscillation frequency (GHz)		11.2
NF (dB)		0.7 (TYP.)
Conversion gain (dB)		50 (MIN.)
Phase noise		-60 dBc/Hz @1 kHz (TYP.)
Cross-polar discrimination (dB)		25 (TYP.)/20 (MIN.)
Supply voltage (V DC) (Polarization switching voltage)	Vertical polarization	9.5 to 12.0
	Horizontal polarization	13.5 to 16.5
Power consumption (mA)		120 (TYP.)/150 (MAX.)
Waveguide		Dual type feed-horn
Output impedance (Ω)		75
Output connector (F-type)		1-output (H/V switching)
Outline dimensions (mm)		56.2 x 78.2 x 121.56
Weight (g)		Approx. 280

BS1D1JP100A

* Outer cabinet is made upon request.

■ JAPAN: LNB FOR BS DIGITAL BROADCAST

◆ Specifications

Destination	Japan
Receiving system	BS digital (BSAT-2a)
Receiving polarization	Right circular polarization
Model No.	BS1F5JR100A
Input frequency (GHz)	11.71023 to 12.01325
Output frequency (MHz)	1 032.23 to 1 335.25
Local oscillation frequency (GHz)	10.678
NF (dB)	0.6 (TYP.)/0.9 (MAX.)
Conversion gain (dB)	48 to 60
Phase noise	-60 dBc/Hz @1 kHz (TYP.)
Cross-polar discrimination (dB)	25 (TYP.) /20 (MAX.)
Supply voltage (V DC)	9.5 to 18.0
Power consumption (mA)	120 (TYP.)/150 (MAX.)
Waveguide	Feed-horn (F/D=0.5)
Output impedance (Ω)	75
Output connector (F-type)	1-output
Outline dimensions (mm)	43.0 x 101.3 x 43.0
Weight (g)	Approx. 110

BS1F5JR100A

*Outer cabinet is made upon request.

■ U.S.A.: LNB FOR FSS BROADCAST

◆ Specifications

Destination	U.S.A.
Receiving system	FSS
Receiving polarization	Horizontal/vertical polarization
Model No.	BS1C1UR100A
Input frequency (GHz)	11.7 to 12.2
Output frequency (MHz)	950 to 1 450
Local oscillation frequency (GHz)	10.75
NF (dB)	0.6 (TYP.)/0.9 (MAX.)
Conversion gain (dB)	50 (MIN.)
Phase noise	-60 dBc/Hz @1 kHz (TYP.)
Cross-polar discrimination (dB)	—
Supply voltage (V DC)	12 to 24
Power consumption (mA)	120 (TYP.)/150 (MAX.)
Waveguide	WR-75
Output impedance (Ω)	75
Output connector (F-type)	1-output
Outline dimensions (mm)	48.6 × 96.3 × 45.5
Weight (g)	Approx. 150

BS1C1UR100A

■ DIGITAL DBS FRONT-END UNITS

DBS front-end unit for digital broadcasting features high quality of signal transmission and improved elimination ability of various kinds of rejection thanks to using Sharp's original ICs.

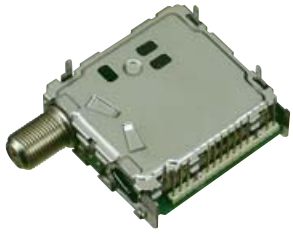
◆ Features

(1) Equipped with a direct conversion IC developed by Sharp. Reliability is improved by reducing power consumption and component counts.
(2) Compact and thin design enabling installation on a personal computer PCI card. [Thickness: 12.9 mm (MAX.)]
(3) Wide-band reception design also covering CS broadcast band. [Reception frequency: 950 to 2,150 MHz]
(4) Wide product line-up of LINK integrated types for contributing to set development time reduction. [Compatible with QPSK/8PSK demodulation]
(5) User support tools can be provided. [Sample/evaluation boards and software are available.]

◆ Standard Specifications

Destination		Europe/U.S.A./Japan		
Input type		1-input	1-input, single distribution output	1-input
Model No.		BS2S7VZ1204	BS2S7VZ0204	BS2S7HZ1204
Input frequency (MHz)		950 to 2 150		
Input signal level (dBm)		–65 to –25		
The 1st intermediate frequency (MHz)		Zero-IF (Direct conversion)		
Base band frequency bandwidth		10 to 30, 2.5 MHz step (BB LPF)		
RF input local leak (dBm)		–63 (MAX.)		
AGC linearity (dB/V)		40		
PLL phase noise (dBc/Hz)	10 kHz offset	–78 (TYP.)		
	1 kHz offset	–60 (TYP.)		
Output type		I/Q		
Channel selection system		PLL (I^2C-bus)*1		
Noise figure (dB)		12 (MAX.)		
Tuning voltage (V DC)		30		
Supply voltage (V DC)		5, 3.3		
LNB power supply		DC 25 V, 400 mA (MAX.)		
Input impedance (Ω)		75		
Outline dimensions (mm)		39.8 × 35.9 × 11.0		

BS2S7VZ0204



BS2S7HZ1204

※ Contact Sharp for custom design product.
*1 I^2C-bus is a trademark of Philips Corporation.

DIGITAL DBS FRONT-END UNIT

■ DIGITAL DBS FRONT-END UNITS <QPSK Demodulator Circuit Built-in Type>

◆ Specifications <QPSK Demodulator Circuit Built-in Type>

Destination	Europe/U.S.A./Japan		Europe/Japan
Input type	1-input	1-input/RF with loop through	1-input
Model No.	BS2F7VZ1080	BS2F7VZ0184	BS2F7VG0054
Input frequency (MHz)	950 to 2 150		
Input signal level (dBm)	–65 to –25		
The 1st intermediate frequency (MHz)	Zero-IF (Direct conversion)		479.5
IF bandwidth (MHz)	10 to 30, 2.5 MHz step (BB LPF)		36
RF input local leak (dBm)	–63 (MAX.)		
AGC linearity (dB/V)	40		
The 2nd local control method	—		Fixed
Output type	8-bit transport		
Symbol rate (M baud)	30 (MAX.)	45 (MAX.)	30 (MAX.)
BER (Viterbi output)	Eb/No = 5.5 dB (Max.) [PR = 3/4, BER = 2 x 10^{-4}]		
Channel selection system	PLL (I^2C-bus)*1		
Noise figure (dB)	12 (MAX.)		
Image rejection (dB)	—		30 (MIN.)
Tuning voltage (V DC)	30		
Supply voltage (V DC)	5, 3.3	5, 3.3, 2.5	5, 3.3
LNB power supply	DC 25 V, 400 mA (MAX.)		
Input impedance (Ω)	75		
Outline dimensions (mm)	70.0 × 35.9 × 11.0		95.0 × 42.0 × 11.0

BS2F7VZ1080

BS2F7VZ0184

❊ Contact Sharp for custom design product.

*1 I^2C-bus is a trademark of Philips Corporation.

■ DIGITAL DBS FRONT-END UNIT <8 PSK Demodulator Circuit Built-in Type>

◆ Specifications <8 PSK Demodulator Circuit Built-in Type>

Destination	Japan
Input type	1-input, single distribution output
Model No.	☆ BS2F7VZ0440
Input frequency (MHz)	950 to 2 150
Input signal level (dBm)	–65 to –25
The 1st intermediate frequency (MHz)	Zero-IF (Direct conversion)
Base band frequency bandwidth	25 (BB LPF)
RF input local leak (dBm)	–63 (MAX.)
AGC linearity (dB/V)	40
Output type	8-bit transport
Symbol rate (M baud)	28.86
Channel selection system	PLL (I^2C-bus)*1
Noise figure (dB)	8 (TYP.)
Tuning voltage (V DC)	30
Supply voltage (V DC)	5, 3.3, 1.5
LNB power supply	DC 25 V, 400 mA (MAX.)
Input impedance (Ω)	75
Outline dimensions (mm)	70.0 × 35.9 × 11.0

BS2F7VZ0440

*1 I^2C-bus is a trademark of Philips Corporation.

■ DBS FRONT-END UNITS WITH BUILT-IN FM DEMODULATOR <ANALOG>

Wide lineup of DBS front-end units to cover worldwide broadcasting regulations and specifications for satellite receiving systems.

◆ Features

(1) A super-compact size to facilitate to make the VCR with the built-in BS compact and to build into the television set. [volume: 22 cm^3]
(2) Low-voltage drive, low-power consumption design
(3) Design with the built-in digital AFC output and keyed AFC circuit suitable for HDTV

◆ Specifications

Destination	Europe		Japan (For TV)
Type	1-input (wide band)	2-input (wide band)	BS 1-input (1-band)
Model No.	BS2D7VG1111	BS2D7VG2121	BS2T1VE1016
Input frequency (MHz)	900 to 2 150		1 035.98 to 1 331.5
Input signal level (dBm)	–60 to –30		–65 to –28
Output baseband frequency	50 Hz to 10.5 MHz		50 Hz to 9 MHz
Intermediate frequency (MHz)	479.5		402.78
IF Bandwidth (MHz)	27	27/18	31
Channel selection system	PLL (I^2C-bus)*3		
Input terminal isolation (dB)	–	40 (TYP.)	–
S/N (C/N = 14 dB) (dB)	35 (MIN.)		37 (MIN.)
Image rejection (dB)	40 (TYP.)		55 (MIN.)*1
Video output level (Vp-p)	–		1.0
DET output level (Vp-p)	–		1.34
Audio output level (Vrms) (FS)	–		0.85
Tuning voltage (V DC)	30		12*2
Supply voltage (V DC)	5		
LNB power supply	DC 25 V 400 mA (MAX.)		DC 15 V, 350 mA (MAX.)
Input impedance (Ω)	75		
Outline dimensions (mm)	51.5 × 41.4 × 10.4		70.0 × 42.0 × 11.0

<22 cm^3> 2-input type

<32 cm^3>
Video and audio processing type

*1 A value specified in "Satellite Broadcasting Receiving Equipment Test", Vol. 3 issued by Dempa Gijutsu Kyokai Inc.
*2 DC 9 V type of tuning voltage is also available.
*3 I^2C-bus is a trademark of Philips Corporation.

Note:
• Standard test signals are as follows. Japan: NTSC dev. = 17 MHzp-p / Europe: PAL dev. = 16 MHzp-p / USA: NTSC dev. = 21.5 MHzp-p.
• Custom specs for models other than those listed above, including an introduction to our current 35 cm^3 (35 cc) type models, can be arranged through special consultation. ["Custom specs" refers to whether LT (low threshold), a prescaler (including difference of dividing ratios) or a PLL are necessary or not, what the IF band width should be, and other features that differ from the standard specs.]

☆New product
★Under development

■ FRONT-END UNITS FOR DTV

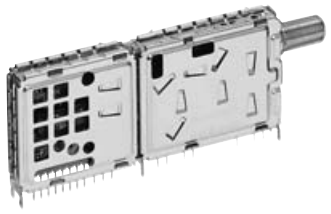
◆ Features

(1) Baseband, low-IF and direct-IF output systems are available.
(2) High interruption protection performance thanks to the double conversion system and built-in SAW filter.
(3) High output voltage level which can be directly input to an A/D converter.

◆ Specifications

Destination	U.S.A./Korea/Taiwan		
Model No.	VA1D3UF1009	VA1D2UF3003	VA1D1UF3012
Input frequency (MHz)	54 to 806		
Output	Differential baseband output	Differential Low-IF output (5.38 MHz)	Differential IF output (44 MHz)
Noise figure (dB)	10 (MAX.)		
Phase noise	–82 dBc/Hz @ 20 kHz offset (MAX.)		
Image rejection (dB)	55 (MAX.)		
AGC range	70 dB (MIN.) RF AGC + IF AGC		
Channel selection/control system	PLL (I^2C-bus)*1		
Supply voltage (V DC)	5, 9, 32		5, 32
Outline dimensions (mm)	94.0 x 40.9 x 13.0		

*1 I^2C-bus is a trademark of Philips Corporation.



VA1D3UF1009

■ FRONT-END UNITS FOR DVB-T/DVB-C

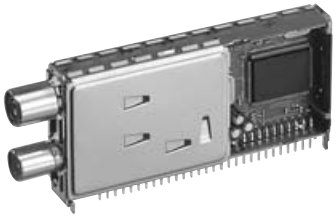
◆ Features

(1) Transport stream output front-end units with built-in OFDM demodulation IC and FEC IC. [VA1T5ED5018]
(2) Transport stream output front-end units with built-in QAM demodulation IC and FEC IC. [VH2K3ED7028]
(3) Covering all European regions by 2k (U.K.) and 8k (outside U.K.) Standards compatibility [Front-end units for DVB-T].
(4) Compact, low power consumption.
(5) Compatible with various types of chassis forms (vertical, horizontal type), loop-through circuit (with/without), input connectors (F connectors/DIN connectors) etc.

◆ Standard Specifications

Destination	Europe/Asia	Europe/Asia	Europe/China
Product name	DVB-T front end	DVB-T front end (RF only)	DVB-C front end
Model No.	☆ VA1T5ED5018	★ VA1S1ED5010	☆ VH2K3ED7028
Input frequency (MHz)	47 to 862	47 to 862	110 to 860
Output	Transport stream (Built-in OFDM demodulation)	Direct IF	Transport stream (Built-in QAM demodulation)
Mode	2k, 8k	—	16, 32, 64, 128, 256 QAM
Input sensitivity	–78 dBm (TYP.) [at 8k, 64QAM]	—	–20 dBmV (TYP.) [at 64QAM, C/N = 28 dB]
Noise figure (dB)	6 (TYP.)		
Phase noise	60 dBc/Hz @ 1 kHz offset (TYP.)	65 dBc/Hz @ 1 kHz offset (TYP.)	60 dBc/Hz @ 1 kHz offset (TYP.)
Image rejection (dB)	65 (TYP.)		
C/N	19.2 dB (TYP.) input level: –50 dBm	—	24.8 dB (TYP.) input level: 0 dBmV
Channel selection/control system	I^2C-bus*1		
Power consumption (W)	2.4	0.6	1.6
Supply voltage (V DC)	5, 3.3, 2.5, 30	5, 30	5, 3.3, 30
Outline dimensions (mm)	87.2 x 37.2 x 12.0	50.6 x 43.3 x 13.4	87.2 x 37.2 x 12.0

*1 I^2C-bus is a trademark of Philips Corporation.



VA1T5ED5018

DIGITAL CATV FRONT-END UNIT

☆New product
★Under development

■ DIGITAL CATV FRONT-END UNITS <Single Conversion Type>

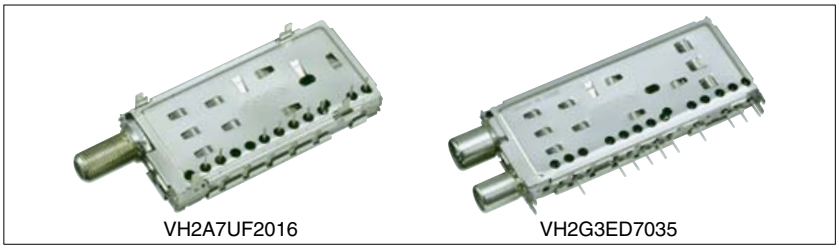
◆ Features

(1) Miniaturization for thin and compact configuration of onboard sets
(2) Built-in diplexer, input buffer amp and SAW filter.
(3) Conformable to the DOCSIS standards (for USA models)

◆ Specifications

Destination	U.S.A.				Europe
Model No.	☆ VH2A7UF2016	VH2F7UF2021	☆ VH2G7UF2047	★ VH2N7MF2101	☆ VH2G3ED7035
Features	Direct IF output	Direct IF output Built-in SAW, IF amp.	Direct IF output Built-in SAW, IF AGC amp.	Direct IF output Built-in return pass amp. Built-in DC-DC	Direct IF output with Loop through
Input frequency (MHz)	54 to 860		88 to 860		47 to 866
Output frequency (MHz)	43.75			43.75	36.15
Conversion gain (dB)	28 (MIN.)	28 (MIN.)	60 (MIN.)	70 (MIN.)	60 (MIN.)
Return pass voltage gain (dB)	–			26 (MIN.)	–
Noise figure (dB)	7 (TYP.)			7.5 (TYP.)	7 (TYP.)
Return pass frequency (MHz)	5 to 42				–
Cross modulation rejection (dBc)	–50 (MAX.)				
Intermodulation (dBc)	–50 (MAX.)				
Input return loss (dB)	6 (MIN.)				
Phase noise (dBc/Hz)	–90 (TYP.) at 10 kHz offset			–92 (TYP.) at 10 kHz offset	–90 (TYP.) at 10 kHz offset
Return pass harmonic distortion (dB)	–			–47 (MAX.)	–
Channel selection system	PLL (I^2C-bus)*1				
Supply voltage (V DC)	B: 5, BT: 30			B: 5	B: 5, BT: 30
Outline dimensions (mm)	70.0 × 32.0 × 9.2	85.0 × 32.0 × 9.2		85.0 × 36.0 × 11.8	85.0 × 32.0 × 9.2

*1 I^2C-bus is a trademark of Philips Corporation.



VH2A7UF2016 VH2G3ED7035

■ DIGITAL CATV FRONT-END UNIT <Double Conversion Type>

◆ Features

(1) Thin and compact configuration (Volume for circuit portion: 23 cm^3, thickness: 13 mm)
(2) Conformable to the set-top box standards (open cable)
(3) Wide reception bandwidth (54 to 860 MHz) for digital service band area
(4) Low power consumption design for energy savings (1.3 W TYP.)

◆ Specifications

Destination	U.S.A.
Model No.	VH1B1UF3006
Features	Built-in upstream/downstream terminals
Input frequency (MHz)	54 to 860
Upstream frequency range (MHz)	5 to 27
Downstream frequency range (MHz)	70 to 130
Output frequency (MHz)	44
Conversion gain (dB)	30 (TYP.)
Noise figure (dB)	10 (MAX.)
Cross modulation rejection (dBc)	–60 (TYP.)
Intermodulation (dBc)	–60 (TYP.)
Input return loss (dB)	7 (MIN.)
Phase noise (dBc/Hz)	–84 (MAX.) at 10kHz offset
PLL interface	I^2C bus*1
Supply voltage (V DC)	5, 9, 30
Outline dimensions (mm)	69.4 × 36.6 × 9.2

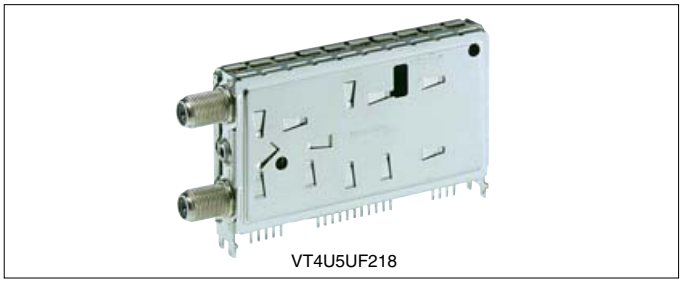
*1 I^2C-bus is a trademark of Philips Corporation.

VH1B1UF3006

THREE-IN-ONE RF UNIT

■ THREE-IN-ONE RF UNITS (RF FRONT-END UNIT + PIF UNIT + RF MODULATOR* INTEGRATED UNIT)

A composite unit of integrating three units of the RF front-end unit, the PIF unit and the RF modulator, being high-frequency basic circuits of the video deck, etc., unite in a compact configuration. It helps to save the set's space, shorten the development period and improve the design flexibility and productivity.



VT4U5UF218

✻ Some models do not integrate RF modulator.

◆ Features

(1) A compact all-in-one RF unit has achieved drastic saving of the set's space.

(2) Enables to shorten the development period for the set and to eliminate adjustment work in the production process. [Matching (PIF frequency/delay AGC) adjustment of the three units are not necessary]

◆ Specifications

TV system			PAL B/G			NTSC-M (US)		
Model No.			VTDT5ED204			VT4U5UF218		
Receiving channels (ch)			VHF		UHF	VHF		UHF
			Air	CATV	21 to C57	Air	CATV	14 to 69
			1A to 12	X to S41		2 to 13	A5 to W+84	
Band split			VL: 1A to S7 VH: S8 to S37 UHF: S38 to C57			VL: 2 to 6 VH: 7 to 13 UHF: 14 to 69		
Intermediate frequency (MHz)		Video	38.9			45.75		
		Audio	33.4			41.25		
Channel selection system			PLL(I^2C)*1					
Detection system			PLL synchronization detection system, Inter-carrier sound receiving system					
RF front-end	Image rejection (dB)		Air: 65 CATV: 60		65	Air: 65 CATV: 60		55
	IF rejection (dB)		VL: 60 VH: 100		100	VL: 75 VH: 90		90
IF	Video output level (Vp-p)		1.0			1.0		
	Video output S/N (dB)		46			47		
	Audio output level		2.19 Vp-p			480 mVrms		
	Audio output S/N (dB)		49			52		
Modulator	Video output modulation (%)		78			77		
	Video output S/N (dB)		50			55		
	Audio output modulation (kHz)		±40			±22.5		
	Audio output S/N (dB)		50			56		
	RF output P/S (dB)		16			16		
	Transmitting channel		22 to 68			3, 4		
	Output channel switching type		PLL frequency synthesizer (I^2C)*1			Electronic switch		
Supply voltage (V DC)			BT: 32/BP, BM, BP: 5			BT: 33/BM, BP, B: 5		
Outline dimensions (mm)			85.8 × 43.0 × 11.2			85.8 × 43.0 × 11.2		

✻ Figures in brackets indicate the dimensions including PCB overhang.

*1 I^2C-bus is a trademark of Philips Corporation.

■ TWO-IN-ONE RF UNITS (RF FRONT-END UNIT + PIF UNIT)

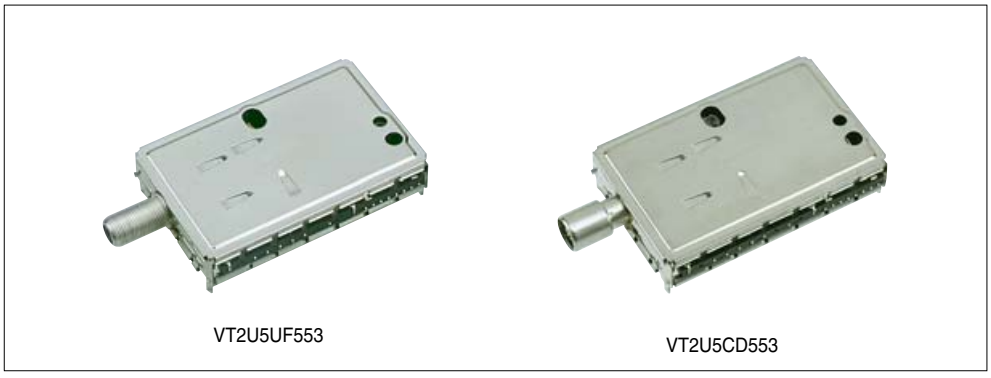
◆ Features

(1) High performance RF front-end unit and PIF unit are integrated in one unit, resulting in a short developing time.
(2) A composite unit structure improves operability during mounting.
(3) Line-up includes horizontal shaped models for LCD TVs/LCD Monitors.

◆ Specifications

TV system			Japan				U.S.A.				Asia			
Model No.			VT2U5JF553				VT2U5UF553				VT2U5CD553			
Receiving channels (ch)			VHF		UHF		VHF		UHF		VHF		UHF	
			Air	CATV	CATV	Air	Air	CATV	CATV	Air	Air	CATV	CATV	Air
			1 to 12	C13 to C38	—	13 to 62	2 to 13	A-5 to W+11	W+12 to W+84	14 to 69	1 to 12	1A, Z1 to Z33	Z34 to Z38	13 to 57
Band split			BL: 1 to 3, C13 to C22 BH: 4 to 12, C23 to C38 BU: 13 to 62				BL: 2 to 6, A-5 to B BH: 7 to 13, C to W+11 BU: 14 to 69, W+12 to W+84				BL: 1 to 5, 1A, Z1 to Z4 BH: 6 to 12, Z5 to Z33 BU: 13 to 57, Z34 to Z38			
Intermediate frequency (MHz)		Video	58.75				45.75				38.0			
		Audio	54.25				41.25				D/K: 31.5, I: 32.0, B/G: 32.5, M/N: 33.5			
Detection system			Pseudo synchronization detection system, split-carrier audio receiving system											
Terminals			Input: F-type junction				Input: F-type junction				Input: DIN type terminal			
Input impedance (Ω)			75											
B voltage (V DC)			BM: 5/BP: 5/BT: 31.5				BM: 5/BP: 5/BT: 31				BM: 5/BP: 5/BT: 31			
RF front-end	Noise figure (dB)		4	5	5	4.5	5	6	6	6	5	6	6	7
	Type		CATV compatible											
	Channel selection system		PLL frequency synthesizer (I^2C)*1											
	Image rejection (dB)		V_L: 85, V_H: 75			75	V_L: 75, A5 to I: 85, J to W+84: 60			60	V_L: 70, V_H: 70			60
	IF rejection (dB)		V_L: 100, V_H: 100			100	V_L: 90, V_H: 100			100	V_L: 50 to 70, V_H: 90			90
IF	Video output level (Vp-p)		1.8				1.0				1.0			
	Video output S/N (dB)		46				46				44			
	Noise limit sensitivity (dBμ) at S/N = 30 dB		44				44				42			
	Audio output level (mVrms)		290				290				290			
	Audio output S/N (dB)		55				52				45			
	Audio frequency characteristics (at 70 kHz)		–0				–2				–0			
Outline dimensions (mm)			70.0 × 43.3 × 12.0											

*1 I^2C-bus is a trademark of Philips Corporation.



VT2U5UF553

VT2U5CD553

☆New product

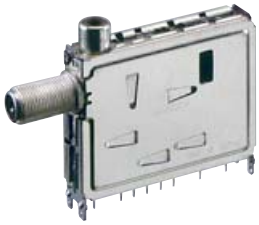
■ RF FRONT-END UNITS <VTST Series>

◆ Features

(1) Miniature size achieved using thin profile, low height design in industry standard RF front-end unit (terminal shape and terminal pin arrays) (Circuit area of 20 cm^3 contributes to space saving, miniature design in onboard set products)

(2) Model lineup corresponding to domestic product standards of Europe, China, Japan and the United States.

F-type junction input type



With RF output terminal type

◆ Specifications (Major models of VTST series)

Destination	Europe			U.S.A.			China			Japan					
Type	Hyper, for frequency synthesizer			With PLL, for frequency synthesizer, F-type junction input			CiSPR-compatible, hyper, for voltage synthesizer			With PLL, for frequency synthesizer			With PLL, for frequency synthesizer, with RF output		
Model No.	VTST5HD970			VTST5UF740			VTST5HD950			VTST5JF540			VTST5JB540		
Receiving channel (ch)	VHF		UHF	VHF		UHF	VHF		UHF	VHF		UHF	VHF		UHF
	Air	CATV	21 to C57	Air	CATV	14 to 69	Air	CATV	13 to 57 Z34 to Z38	Air	CATV	13 to 62	Air	CATV	13 to 62
	2 to 12	X to S41		2 to 13	A–5 to W + 84 (A–8)		1 to 12	Z1 to Z33		1 to 12	C13 to C38		1 to 12	C13 to C38	
Band split	B1: 2 to S6 B2: S7 to S36 B3: S37 to C57			B1: 2 to B B2: C to W+11 B3: W+12 to 69			B1: 1 to 5, Z1 to Z4 B2: 6 to 12, Z5 to Z33 B3: Z34 to Z38			BL: 1 to C14 BH: C15 to C38		BU:	BL: 1 to C14 BH: C15 to C38		BU:
Intermediate frequency (MHz) Video	38.9			45.75			38.0			58.75					
Intermediate frequency (MHz) Audio	33.4			41.25			31.5			54.25					
B voltage (V DC)	5			5			5			5					
Input impedance (Ω)	75														
VSWR	2	2	2	1.5	1.5	1.5	2	2	2	2	2	2	2	2	2
Noise figure (dB)	5	7	6	5	6	5	5	7	6	4	5	4.5	8	9	8.5
Power gain (dB)	40	38	40	39	39	37	40	38	40	40	37	40	36	33	36
Image rejection (dB)	VL: 70 VH: 65		60	VL: 70 VH: 65		70	VL: 70 VH: 65		60	VL: 85 VH: 85		80	VL: 85 VH: 85		80
IF rejection (dB)	VL: 70 VH: 90		90	VL: 70 VH: 90		90	VL: 60 VH: 90		90	VL: 80 VH: 100		100	VL: 85 VH: 100		100
Outline dimensions (mm)	53.0 × 39.5 × 11.5														

■ ULTRA COMPACT FRONT-END UNITS <VT2V Series>

◆ Features

(1) Compact and thin design suitable for building into a portable unit with LCD monitor. (Circuit area of 11.4 cm^3)

(2) Contribute to simplifying developing process and saving space thanks to the built-in VIF/SIF circuit.

◆ Specifications

Destination	Japan		Japan/U.S.A.			
Model No.	☆ VT2V5JP5550		☆ VT2V8UP5510			
Receiving channel	VHF	UHF	VHF	UHF	CATV	FM Radio
	1 to 12	13 to 62	JPN: 1 to 12 USA: 2 to 13	JPN: 13 to 62 USA: 14 to 69	JPN: C13 to C63 USA: A-5 to W+84	JPN: 76 to 90 MHz USA: 88 to 108 MHz
The 1st intermediate frequency (MHz) Video	58.75		45.75			
The 1st intermediate frequency (MHz) Audio	54.25		41.25			
Supply voltage (V DC)	5, 31		5 single (DC-DC converter)			
Power consumption (W)	0.75 (TYP.)		0.8 (TYP.)			
Input impedance (Ω)	75					
Video S/N (dB)	50 (TYP.)		50 (TYP.)			
Audio S/N (dB)	48 (TYP.)		53 (TYP.)			
Noise limit sensitivity (dB)	42 (TYP.)		42 (TYP.)			
Video frequency characteristics	–1.0 dB (TYP.) at 3.58 MHz		–1.0 dB (TYP.) at 3.58 MHz			
Audio frequency characteristics	0 dB (TYP.) at 80 kHz		–1.5 dB (TYP.) at 80 kHz			
Outline dimensions (mm)	49.9 × 28.0 × 7.7					

VT2V8UP5510

★Under development

■ RF MODULATORS

Various types with a modulator function adding RF switch, booster mixer functions are available. The compact design that enables direct mounting on the mother board in the set allows a wider application to VCRs, video disks, BS and CATV equipment.

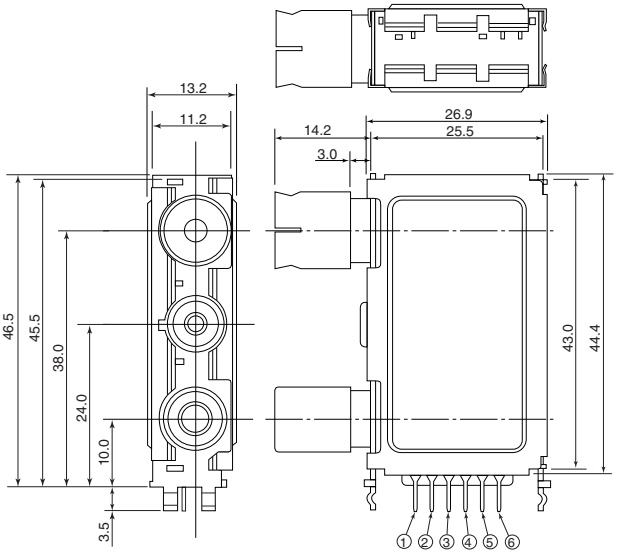
◆ Specifications

Destination		Multi (4-broadcast type)		U.S.A.
Type		Compact with PLL	Compact with PLL, Tuner out	Compact, electrical switch type
Model No.		VT5F1YT0005	VT5F1YT0024	★ VT5F9MN0027
TV system broadcast method		PAL-G/I/K/M		NTSC-M
General	ANT input	UHF/VHF		
	Output impedance (Ω)	75 unbalanced		
	Output channel (ch)	21 to 69 variable		US 3, 4
	Audio carrier frequency (MHz)	4.5/5.5/6.0/6.5		4.5
	Supply voltage (V DC)	5, 30		5
Video	Video modulation (%)	80 ±6		78 ±7
	S/N (dB)	45 (MIN.)		50 (MIN.)
	V/S	V/S = 7/3		V/S = 7/3
Audio	Audio modulation (%)	M: 100 ±28 (100% = ±25 kHz) G/I/K: 100 ±24 (100% = ±50 kHz)		100 ±20 (100% = ±25 kHz)
	S/N (dB)	45 (MIN.)		47 (MIN.)
	Distortion (%)	3.0 (MAX.)		3.0 (MAX.)
Outline dimensions (mm)		43 × 25.5 × 11.2 (circuit portion)		

VT5F1YT0024

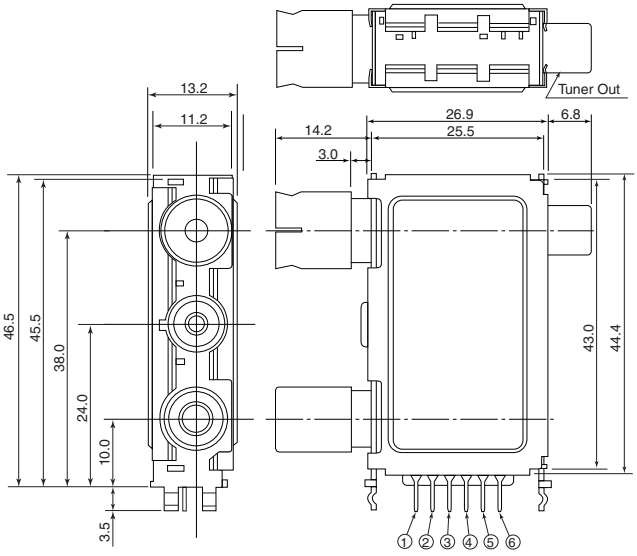
◆ Outline Dimensions

VT5F1YT0005/(VT5F9MN0027)



TERMINAL No.	1	2	3	4	5	6
TERMINAL NAME	BT	+B	SDA	SCL	AUDIO IN	VIDEO IN

VT5F1YT0024



TERMINAL No.	1	2	3	4	5	6
TERMINAL NAME	BT	+B	SDA	SCL	AUDIO IN	VIDEO IN

SS WIRELESS COMMUNICATION UNIT

☆New product

■ SS WIRELESS COMMUNICATION UNITS

◆ Features

(1) Achieves high-speed communication conforming to wireless LAN standard IEEE 802.11b [11 Mbps: DC2A1AZ014]

(2) Compact package for compact equipment design (10.5 cm^3: DC2A1AZ004/DC2A1AZ014)

(3) Improved phasing resistance characteristics by using equalizer circuit base band IC [DC2A1AZ014]

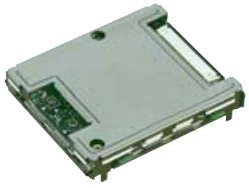
(4) Improves throughput of communications, thanks to a unique multiple channel system (2 Mbps × 7 (23 channels*1) multiple channels: DC2A1AZ001)

(5) Low power consumption for battery operation of portable equipment

◆ Specifications

Compatible standards	IEEE 802.11 compatible	IEEE 802.11 compatible	IEEE 802.11b compatible
Model No.	DC2A1AZ001	DC2A1AZ004	☆ DC2A1AZ014
Communication frequency range (GHz)	2.400 GHz to 2.497 GHz	2.400 GHz to 2.497 GHz	2.400 GHz to 2.497 GHz
No. of communication channels*1	7 ch at 2471-2497 MHz band 23 ch at 2400-2483.5 MHz band	3 ch	14 ch (channel span over 30 MHz)
Transmission output (mW/MHz)	10 or less		
Communication system	Half duplex		
Modulation system	Wave width phase modulation system		CCK, DQPSK, DBPSK
Spectrum distribution system	Delay multiple system with direct distribution		Direct distribution system
Distribution ratio	×11 (baseband)		
Data transfer rate (Mbps)	2 (MAX.)	10 (MAX.)	11 (MAX.)
Multi rate (by multiple channel selection)	200 kbps/400 kbps/600 kbps/800 kbps 1.0 Mbps/1.2 Mbps/1.6 Mbps/2.0 Mbps	1/2/3/4/5/6/8/10 Mbps	1/2/5.5/11 Mbps
Communication distance*2	Indoor: 50 m/Insight: 100 m (TYP.)	Indoor: 30 m/Insight: 50 m (TYP.)	Indoor: 30 m/Insight: 50 m (TYP.)
Supply voltage (V DC)	3.3		
Current consumption	Transmission: 280 mA (TYP.) Reception: 170 mA (TYP.) Sleep: 10 mA (TYP.)	Transmission: 380 mA (TYP.) Reception: 240 mA (TYP.) Sleep: 15 mA (TYP.)	Transmission: 290 mA (TYP.) Reception: 170 mA (TYP.) Sleep: 15 mA (TYP.)
Outline dimensions (mm)	51.3 × 42.3 × 7.6 (Excluding bumps and others)	51.3 × 41.9 × 4.9 (Excluding bumps and others)	51.3 × 41.9 × 5.0 (Excluding bumps and others)
Weight (g)	Approx. 24	Approx. 17	Approx. 17

*1 Number of channels which can be used may differ according to the country's laws.
*2 Communication distances may differ due to the conditions to be used. Take the values herein as references.



DC2A1AZ001

DC2A1AZ004

DC2A1AZ014

☆New product

■ SS WIRELESS LAN CARDS

◆ Features

(1) Achieves high-speed communication conforming to wireless LAN standard IEEE 802.11b [11 Mbps: DC2B1AZ019]
(2) Improved phasing resistance characteristics by using equalizer circuit base band IC [DC2B1AZ019]
(3) Compact design with built-in diversity antenna [PCMCIA Type II compatible]
(4) Low power consumption

◆ Specifications

Compatible standards etc.	IEEE 802.11 compatible	IEEE 802.11b compatible
Model No.	DC2B1AZ010	☆ DC2B1AZ019
Communication frequency range (GHz)	2.400 GHz to 2.4835 GHz	2.400 GHz to 2.497 GHz
No. of communication channels*1	3 ch	
Transmission output (mW/MHz)	10 or less	
Communication system	Half duplex	
Modulation system	Wave width phase modulation system	BPSK, QPSK, CCK
Spectrum distribution system	Delay multiple system with direct distribution	Direct distribution (DSSS) system
Data transfer ratio (Mbps)	10 (MAX.)	11 (MAX.)
Data transfer rate (Mbps)	1 (DBPSK)/2 (DQPSK)/10 (Sharp's system)	1 (DBPSK), 2 (DQPSK), 5.5/11 (CCK)
Communication distance*2	Indoor: 50 m/Insight: 100 m (TYP.) — at 2 Mbps mode Indoor: 30 m/Insight: 50 m (TYP.) — at 10 Mbps mode	Indoor: 50 m/Insight: 100 m (TYP.) — at 2 Mbps mode Indoor: 35 m/Insight: 60 m (TYP.) — at 11 Mbps mode
Antenna system	Diversity with built-in 2 PIFA antenna (With external antenna connector)	Diversity with built-in 2 antenna
Supply voltage (V DC)	5.0	3.3
Current consumption	Transmission: 430 mA (TYP.) Reception: 340 mA (TYP.) Sleep: 120 mA (TYP.)	Transmission: 330 mA (TYP.) Reception: 190 mA (TYP.)
Outline dimensions (mm)	125.5 × 54.0 × 9.0	110.1 × 54.0 × 7.2
Weight (g)	Approx. 60	Approx. 40

*1 Number of channels which can be used may differ according to the country's lows.
*2 Communication distances may differ due to the conditions to be used. Take the values here in as references.

DC2B1AZ010

DC2B1AZ019

BLUETOOTH™ CF CARD/MODULE

☆New product
★Under development

■ Bluetooth™ CF CARD TYPES

◆ Features

(1) Bluetooth™ standard v1.1 compatible
(2) Built-in super compact antenna
(3) CompactFlash standard ver.1.4 compatible

◆ Specifications

Compatible standards	Bluetooth™ standard v1.1 Power Class 3	Bluetooth™ standard v1.1 Power Class 1
Model No.	☆ DC2C1BZ001	★ DC2C1BZ002
Communication frequency range (MHz)	2,402 to 2,480	
No. of communication channels	79 ch	
Channel interval	1 MHz	
Transmission output (dBm)	0 or less	20 or less
Modulation system	GFSK	
Communication system	TDD	
Distribution system	Frequency hopping: 1600 hops/s	
Data transfer ratio (MAX.)	1 Mbit/s	
Antenna system	Built-in inverted F type antenna	
Communication distance*1	10 m (TYP.)	Insight: 100 m (TYP.)
Supply voltage (VDC)	3.3	
Current consumption (mA)	Transmission: 85, Reception: 86	Transmission: 165, Reception: 86
Outline dimensions (mm)	42.8 × 49.4 × 3.3	
Weight (g)	Approx. 13	Approx. 13

*1 Communication distances may differ due to the conditions to be used. Take the values herein as references.
Note: CompactFlash is a trademark of SanDisk Corporation.

DC2C1BZ001

■ Bluetooth™ MODULES

◆ Features

(1) Bluetooth™ standard v1.1 compatible
(2) Super compact, surface mount type
(3) Compatible with 2 types of interface
Model for UART*2 → DC2D1BZ001
Model for USB*3 → DC2D1BZ003

◆ Specifications

Compatible standards	Bluetooth™ standard v1.1 power class 3		
<Type>	<built-in base band>		<without base band>
Model No.	☆ DC2D1BZ001	☆ DC2D1BZ003	☆ DC2D1BZ002
Communication frequency range (MHz)	2,402 to 2,480		
No. of communication channels	79 ch		
Channel interval	1 MHz		
Transmission output	0 or less		
Receiving sensitivity	–85 dBm (TYP.)/(target)		
Modulation system	GFSK		
Communication system	Half duplex		
Distribution system	Frequency hopping: 1600 hops/s		
Antenna	External		
Supply voltage (VDC)	3.0		
Current consumption (mA)	Transmission: 85, Reception: 85		Transmission: 46, Reception: 57
Output interface	UART*2	USB*3	Sharp specification
Outline dimensions (mm)	15.5 × 15.5 × 2.5		16.0 × 13.8 × 2.5

*2 UART: Universal Asynchronous Receiver Transmitter
*3 USB: Universal Serial Bus
Bluetooth is a property owned by its trademark right holders.

DC2D1BZ001

DC2D1BZ002

RF Components