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Products Guide

PIMD Analyzer

The PIMD (Passive Inter-Modulation Distortion) problem is increasing in the wide band and high speed mobile communication network system. It makes the users and the service providers have many problems.

To measure and analyze the IMD characteristic for the passive components and the wireless communication system is the important issue. AWT has developed various models to measure PIMD for the GSM, WiBro, UMTS/IMT2000, DCS1800/PCS, PCS1900, AMPS/CDMA, EGSM, WiMAX, LTE, etc. For the global market, AWT is ready to design and manufacture PIMD Analyzer according to the custom-specifications.

Customer Benefits

▷Intuitive User interface
Get the function with the very intuitive icons and menus for setting and operation
▷Customizable
In addition to convenient usage, the operation software is highly customizable depending on the end-user's needs
▷Mobility
To operate for the various testing purposes at the base station or faciliy, the operator can move it to the site easily
The operator can move it to the place easily. It has the guards to protect the unit and users from the damage

Portable PIMD Analyzer

Electrical Characteristic

▷Output Power : +44 dBm maximum (Option : +46 dBm)
▷Reverse / Forward IMD Measurement
▷Measurement Level : Up to -175 dBc
▷Noise floor : -140 dBm (@Filter BW : 300 Hz)
▷Measure the Distance to Faulty PIM Position (Portable Option)
▷Measure the Distance to Faulty VSWR Position (Portable Option)

Convenient User Interface

▷The user interface can be modified easily by users
▷Development Mode (Frequency / Time / Sweep) and Production Mode Selectable
▷Reflect (Reverse) / Forward selection
▷Measurement data can be reported in the format of text or JPG
▷History and Built in Test

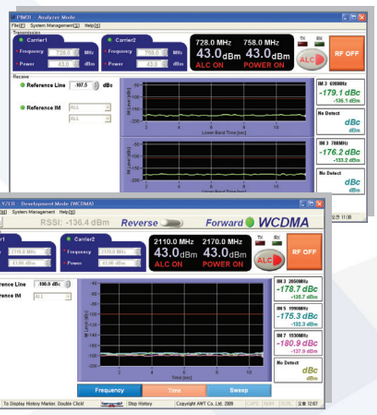


Expandable PIMD Analyzer Standard PIMD Analyzer Single / Dual PIMD Analyzer

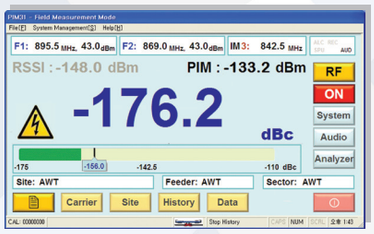
Band Selection Table

Models	Transmit Band	Receive Band
AMPS / CDMA (850)	869 ~ 896 MHz	824 ~ 851 MHz
AWS	2010 ~ 2155 MHz	1710 ~ 1755 MHz
DCS (1800)	1805 ~ 1880 MHz	1710 ~ 1785 MHz
E-GSM (900)	925 ~ 960 MHz	880 ~ 915 MHz
E-TETRA	420 ~ 430 MHz	410 ~ 412 MHz
GSM	935 ~ 960 MHz	890 ~ 915 MHz
IMT-E (2600)	2620 ~ 2690 MHz	2500 ~ 2570 MHz
LTE-JPA	1488 ~ 1520 MHz	1456 ~ 1480 MHz
LTE-JPC	1475 ~ 1511 MHz	1427 ~ 1463 MHz
LTE-US (700-L)	728 ~ 759 MHz	698 ~ 716 MHz
LTE-US (700-U)	728 ~ 759 MHz	776 ~ 788 MHz
LTE-US (700-UL)	728 ~ 759 MHz	776 ~ 788 MHz 698 ~ 716 MHz
PCS (1900)	1930 ~ 1990 MHz	1850 ~ 1910 MHz
TD-SCDMA (2000)	2010 ~ 2025 MHz	1900 ~ 1920 MHz
TETRA	390 ~ 400 MHz	380 ~ 390 MHz
UMTS / WCDMA (2100)	2110 ~ 2170 MHz	1920 ~ 2060 MHz
WCDMA-JP	2150 ~ 2170 MHz	2110 ~ 2140 MHz
WiBro-KR	2110 ~ 2170 MHz 2300 ~ 2390 MHz	1910 ~ 1990 MHz

* Any combination of band can be provided on request

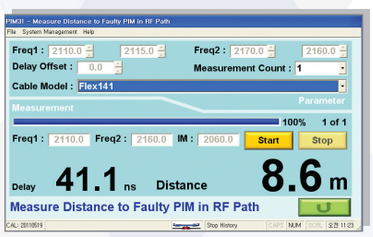


Expandable PIMD Application



Portable PIMD Application

PIMD Accessory



Distance to Faulty PIM measurement

Specifications

Transmit Specification	
Frequency Increment / Accuracy / Tuning Lock Time	100 KHz / ±2 ppm typical / 1ms typical
Carrier Power Adjustable Level	+20 dBm ~ 44 dBm (Option : +46 dBm)
Carrier Power Increment / Accuracy (@ 44 ~ 20 dBm)	0.25 dB / ±0.35 dB
Reverse Power Protection	+43 dBm minimum
Receiver Specification	
Average Noise Floor	- 140 dBm (When select smallest digital filter : 300 Hz)
Dynamic Range / Accuracy	96 dB, typical / ±0.1 dB (-70 dBm reference)
Effective IF Bandwidth	300, 600, 1.2 K, 2.4 K, 5 K, 10 K, 12 K, 15 K, 25 K, 50 KHz
Maximum Operational Input Power	-44 dBm RMS
Maximum Survival Input Power	10 dBm
Measurement Interval	100 ~ 350 ms (Alteration according to kind of digital filter)
IM Measurement Residual IM Measured with Two 43 dBm (20 Watt) Carriers	
Reflect (Reverse) IM	-129 dBm (-172 dBc), typ.
Forward IM	-125 dBm (-168 dBc), typ.
Warm-Up Time	
10 minutes for specified accuracy	
Environmental	
Operating Temperature	14° to 104°F (-10°C to 40°C), 80% RH (non-condensing)
Protection	Indoor Use / Outdoor Use (Portable type)
Ingress Protection	IP20 / IP66 (with lid closed / with lid open)
Power Requirements	
750 Volt-Amps (Portable Type 'TETRA Band' : 1000 Volt-Amps) maximum at 100 ~ 240 VAC, 50 ~ 60 Hz	
Dimensions (unit : mm)	
Portable PIMD Analyzer (except for TETRA, LTE_UL, Single Type)	500.0 (W) x 305.0 (D) x 457.0 (H)
Portable PIMD Analyzer (LTE US (700-UL))	398.4 (W) x 585.2 (D) x 276.0 (H)
Portable PIMD Analyzer (TETRA Band_Control Unit)	440.0 (W) x 503.2 (D) x 205.8 (H)
Portable PIMD Analyzer (TETRA Band_Transmit Unit)	440.0 (W) x 503.2 (D) x 205.8 (H)
Portable PIMD Analyzer (Single Type)	440.0 (W) x 545.2 (D) x 274.4 (H)
Dual & Single PIMD Analyzer (except for EGSM)	488.0 (W) x 659.0 (D) x 278.3 (H)
Dual & Single PIMD Analyzer (EGSM Band)	488.0 (W) x 719.0 (D) x 278.3 (H)
Expandable (Band Unit) PIMD Analyzer (except for EGSM, A-option Type)	486.0 (W) x 667.0 (D) x 142.7 (H)
Expandable (Band Unit) PIMD Analyzer (EGSM Band)	486.0 (W) x 756.0 (D) x 142.7 (H)
Expandable (Band Unit) PIMD Analyzer (A-option Type)	486.0 (W) x 701.0 (D) x 177.8 (H)
Expandable (Control Unit) PIMD Analyzer	486.0 (W) x 652.0 (D) x 85.6 (H)
Adapters & Accessories Supplied (Dependent on the Model)	
DIN 7-16 Male to Female Connector Savers	
Low IM Cable (DIN 7-16 Male, 1 meter) - 1 Set	
AC Power Cable / Operating and Maintenance manual	
Accessory Kit (Low IM 50 Ohm Termination, Low IM Adaptor)	
Torque Wrench (DIN Type)	

* The other band models are available on requests

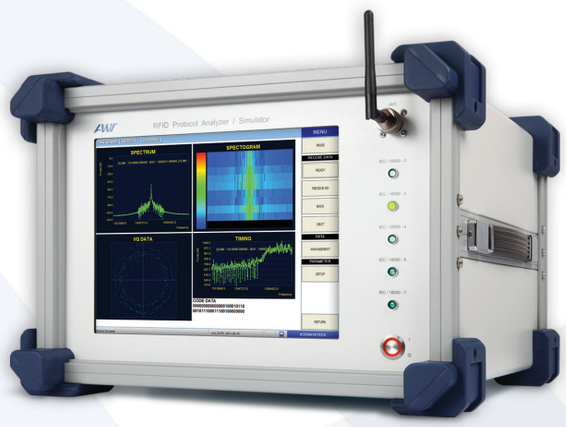
RFID Protocol Analyzer / Simulator

AWT has introduced the world first All-In-One RFID Protocol Analyzer/Simulator. This product is to measure and evaluate the compliance of specifications which are prescribed by ISO 18000 series for the RFID tags or readers including active or passive.

It can provide more convenient test, analysis and evaluation environment for the designers, manufacturers and service providers related in RFID markets. Using this, you can shorten the development schedule, reduce the cost, and increase the productivity.

Features

- ▷Emulate the Standard RFID Reader or Tag
- ▷Measure and Evaluate RFID Tags' and Readers' protocol to check the compliance with ISO18000 series
- ▷Measurement of Frequency, Power, and Modulation
- ▷Display Timing Waveform / Code Data
- ▷Easy to use, Compact Size



Specifications

Parameter			Description
Frequency	Range		120 ~ 140 KHz 13 ~ 14 MHz 430 ~ 440 MHz 860 ~ 960 MHz 2.40 ~ 2.49 GHz
	Resolution		10 Hz
Tx.	Output Power Level		+10 dBm max
	Level Control	Range	30 dB
		Resolution	1 dB
Rx.	Sensitivity		-90 dBm
	Level Measure Range		-90 ~ 0 dBm
Modulation			AM, FM, PSK, Back Scatter, GMSK
Coding			PIE, PPM, Manchester, FM0, Miller, MFM, NRZ

* The other band models are available on requests

Radar Simulator
(Threat Signal Generator)

AWT's Radar Simulator can generate a various modern Radar Signal(s) and give you a variety of capabilities to test many different receivers covering 0.5 to 40 GHz such as the receivers of RWR, MWR, and other EW Receivers.
It generates lots of Radar signals according to the operator's intention.
Radar Simulator is very useful to test EW system and train EW operator.

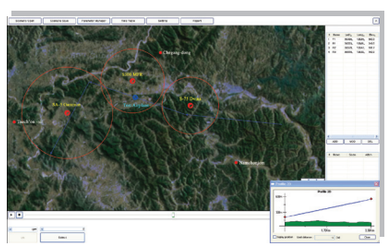
Features

- ▷Simulate Various Radar Signals
- ▷Generate Multiple Radar Signals Simultaneously (up to 128 radars)
- ▷Programmable Emitter Parameters : Freq, PRI, PW, SCAN, FMOP, PMOP, On / Off Time Stamp, etc.
- ▷Output ports for RWR, MWR (to test the direction finding capability)
- ▷EW Operators Training
- ▷ECM Technique Development
- ▷Integrated with GIS information (2D or 3D, optional)

Specifications

Parameter		Description
Frequency	Range	0.5 ~ 18 GHz (Option 40 GHz)
	Pattern	Fixed, Agile, Hopping, Random
Pulse	PW Range	0.1 ~ 225 μs
	PRI Range	1 ~ 1,000,000 μs
	Pattern	CW, Stable, Stagger, Jitter, Dwell & Switch
FMOP	Range	Linear, Nonlinear, Chirp UP / Down
		5 ~ 50 MHz
PMOP	Pattern	Bi-Phase, Quadratic-Phase
	Change Time	<50 ns
SCAN		Conical, Circular, Helical, Lobe-Switching, Raster, Steady, Spiral, Sector, TWS, User Defined
Pulse Width		<100 ns to CW
Output Power		+10 dBm over
Output Level Control Range		40 dB
Number of Simultaneous Signals		16 (typ.) or more up to 128
Interface		RS-232, Ethernet, USB

* The other band models are available on requests



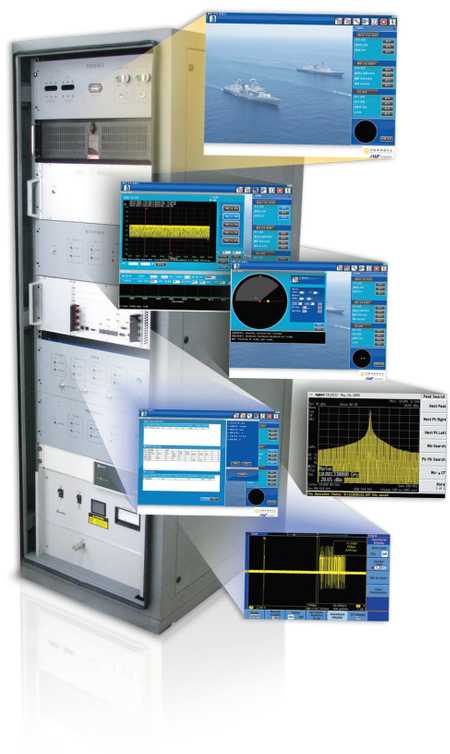
Map-Based Scenario

Target Generator
(EW Technique Generator)

Target Generator is very useful to generate the target echo signal(s) of Radar(s) without real operation of the Radar and launching Targets such as flights, battle ships, etc. It can be used for Radar System T&E or Radar operator Training/Practice. Also using this, the EW officers and the designers of EW systems can develop and estimate the very effective EW Technique with saving time, cost as well as their efforts.

Features

- ▷ Flexibilities to create Technique : Precisely adjusting the parameters using GUI software
- ▷ Wide Instantaneous Bandwidth : Up to 1 GHz
- ▷ Generate the Coherent Technique on the Received Signals
- ▷ Various Modulations can be programmed
- ▷ Cost-Effective Solution in the field of developing Jamming Technique, EW Training, Radar's ECM Vulnerability Test, and verification of ECCM Effectiveness
- ▷ Easy to customize on the Customer's Requirements
- ▷ Various Platforms Available



Specifications

Parameter	Description
Frequency Coverage	Up to 18 GHz (Customization Applicable)
Instantaneous BW	Up to 1 GHz or more (Optional)
Input Sensitivity	<-65 dBm
Range Delay	~ 3 ms (max)
Delay Resolution	>10 ns
Pulse Width	<100 ns to CW
Technique	
Range Gate Deceptions	Pattern : Linear, J-Shape, S-Shape Dwell / Walk / Hold time : 1 ~ 100s Range Delay : ~ 3 ms (max) Keeper
Velocity Gate Deceptions	Doppler Frequency Range : Up to ±300 KHz Synchronized with RGPO / RGPI
MFT (Multiple False Target)	False Target Numbers : 255 (max) Interval Range Between Targets : 10 ns ~ 3 ms
Noise Jamming	SSR, LFN Pattern : Sinusoidal, Triangle, Sawtooth Sweep Rate : 0.125 ~ 500 Hz Duty Cycle : 1 ~ 90%

* The other band models are available on requests

Waveform Analyzer

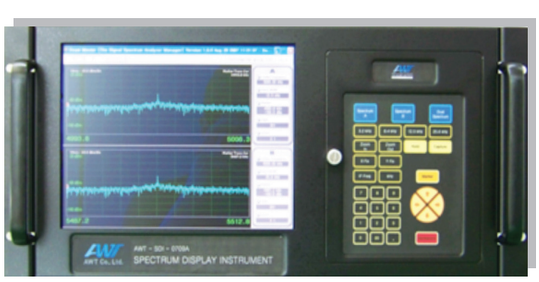
Waveform Analyzer is Measurement/Analysis equipment to estimate frequency and amplitude of input IF signal.

Features

- ▷Using DSP and FPGA, Signal Processing
- ▷Power, Frequency measurement
- ▷Dynamic Range : 96 dB
- ▷Frequency Range : 100 kHz ~ 30 MHz
- ▷Transfers sampling data to other devices
- ▷Remote control using RS-232, USB
- ▷10.4″ LCD Built in
- ▷14Bits sampling resolution
- ▷Frequency, Power display
- ▷Raw data, I / Q data storage (20 GByte)
- ▷-20 ~ +85°C operating temperature range

Specifications

Items		Specifications	Remarks
Channel		2.0	
Frequency Range		10 KHz ~ 30 MHz	
Max Input Level		+10.0 dBm	
Digital Filter		1.5 KHz, 3 KHz, 6 KHz, 9 KHz, 15 KHz, 30 KHz, 60 KHz, 90 KHz, 120 KHz, 300 KHz, 1 MHz	
Demodulation		AM, FM, CW	
Measurement	Freq	Range : BW / 2 Resolution : 1.0 Hz	
	Power	Range : 0 ~ -100 dBm Resolution : 0.1 dB	
Display		2CH Display	
Interface		Ethernet, USB, RS-232	



Microwave Components

AWT offers a comprehensive Passive product. Many of these standard products were designed for particularly demanding broadband requirement. AWT provides our customers with reliable, high quality products at competitive prices to meet demanding technical and schedule requirements.

FILTERS

Suspended Substrate Filters

Features

▷Excellent Wideband BPF
▷Excellent Environment Performance
▷Custom Designs Available

Specifications

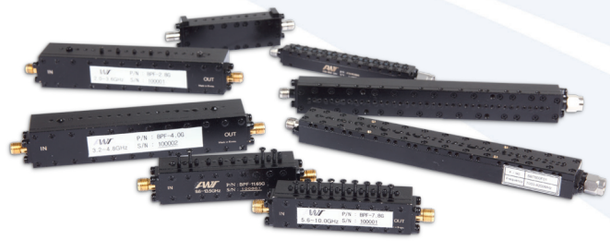
Parts No.	Passband Frequency [GHz]	Passband Insertion loss [dB max.]	Passband VSWR [max.]	Stopband Frequency [GHz]	Stopband Attenuation [dB]
FT020060S	2.0 ~ 6.0	1.50	1.20	DC ~ 1.40, 6.80 ~ 10.0	>30.0
FT060100S	6.0 ~ 10.0	2.0	1.70	DC ~ 5.20, 10.80 ~ 20.0	>30.0
FT100140S	10.0 ~ 14.0	2.0	1.70	DC ~ 9.20, 14.80 ~ 25.0	>30.0
FT140180S	14.0 ~ 18.0	2.50	2.0	DC ~ 13.20, 18.90 ~ 25.0	>30.0
FT100180S	10.0 ~ 18.0	3.0	2.0	DC ~ 8.80, 20.0 ~ 28.0	>30.0
FT020033S	2.0 ~ 3.30	1.20	1.70	DC ~ 1.50, 4.0 ~ 6.0	>30.0
FT032049S	3.20 ~ 4.90	1.50	1.70	DC ~ 2.40, 5.80 ~ 9.0	>30.0
FT048081S	4.80 ~ 8.10	1.50	1.70	DC ~ 3.60, 9.60 ~ 12.0	>30.0
FT080121S	8.0 ~ 12.10	2.0	1.70	DC ~ 6.75, 13.90 ~ 18.0	>30.0
FT120180S	12.0 ~ 18.0	3.0	2.0	DC ~ 10.0, 20.50 ~ 24.0	>30.0

* The other band models are available on requests

Cavity Filters

Features

▷Small package Design, High “Q” Response
▷Covers the 2 GHz ~ 40 GHz Frequency
▷Comb line Design Results in Low insertion Loss Performance
▷Custom Package Designs Available



Specifications

Parts No.	PassBand Frequency [GHz]	PassBand Insertion Loss [dB max.]	Passband VSWR [Max:1]	Stopband Frequency [GHz]	StopBand Attenuation [dB]	Delay Variation [max.]
FT020036C	2.0 ~ 3.60	0.50	1.70	DC ~ 1.70, 3.90	>40.0	-
FT056010C	5.60 ~ 10.0	0.50	1.50	DC ~ 4.60, 11.0	>40.0	-
FT044060C	4.40 ~ 6.0	0.50	1.50	DC ~ 3.60, 6.80	>40.0	-
FT131165C	13.10 ~ 16.50	0.50	1.30	DC ~ 9.60, 17.50	>40.0	-
FT096135C	9.60 ~ 13.50	0.50	1.30	DC ~ 8.0, 14.80	>40.0	-
FT161180C	16.10 ~ 18.0	0.50	1.30	DC ~ 14.0, 18.60	>40.0	-
FT032048C	3.20 ~ 4.80	0.50	1.50	DC ~ 2.40, 5.50	>40.0	-
FT070082C	7.0 ~ 8.20	1.50	1.25	DC ~ 6.80, 8.40	>55.0	1.0 ns any 80.0 MHz
FT078090C	7.80 ~ 9.0	1.50	1.25	DC ~ 7.60, 9.20	>55.0	1.0 ns any 80.0 MHz
FT064065C	6.40 ~ 6.50	1.0	1.20	Fo ±600.0 MHz	>40.0	-
FT068071C	6.80 ~ 7.10	1.0	1.20	Fo ±600.0 MHz	>40.0	-
FT102106C	10.20 ~ 10.60	1.0	1.20	Fo ±600.0 MHz	>40.0	-
FT275286C*	27.50 ~ 28.60	2.0	1.60	DC ~ 26.90, 28.95 ~ 40.0 GHz	>50.0	1.50 ns any 80.0 MHz
FT275300C*	27.50 ~ 30.0	1.80	1.60	DC ~ 27.0, 30.50 ~ 36.0 GHz	>30.0	1.0 ns any 80.0 MHz
FT060110	6.0 ~ 11.0	1.0	2.10	DC ~ 45.0, 12.50 ~ 20.0	>40.0	-
FT110180	11.0 ~ 18.0	1.0	2.50	DC ~ 10.0, 19.0 ~	>40.0	-

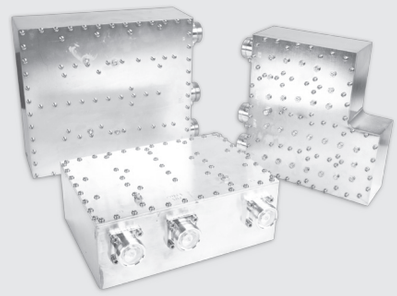
* The other band models are available on requests

* Ka Band

Duplexer and Triplexer (Low IM)

Features

▷Excellent Low IM (Max : 172 dBc)
▷Low insertion Loss
▷65 dB Minimum Isolation
▷Custom Designs Available



Specifications

Parts No.	Passband Frequency [MHz]		Passband Insertion loss [dB max.]	Passband VSWR [max.]	Isolation [dB]	IM [dBc]
	Transmit	Receive				
DP-R380-T390	390 ~ 400	380 ~ 385	1.50	1.30	>65.0	>-165.0
DP-R410-T420	420 ~ 430	410 ~ 412	1.50	1.30	>65.0	>-165.0
DP-R708-T744	728 ~ 759	698 ~ 716	1.0	1.25	>65.0	>-170.0
DP-R782-T744	728 ~ 759	776 ~ 788	1.0	1.25	>65.0	>-170.0
TRI-R708-R782-T744	728 ~ 759	698 ~ 716 776 ~ 788	1.0	1.25	>65.0	>-170.0
DP-R824851D-T869896D	869 ~ 896	824 ~ 851	0.80	1.25	>65.0	>-170.0
DP-R890915D-T935960D	935 ~ 960	890 ~ 915	0.80	1.25	>65.0	>-170.0
DP-R880915D-T925960D	925 ~ 960	880 ~ 915	0.80	1.25	>65.0	>-170.0
DP-R14561480D-T14881520D	1488 ~ 1520	1456 ~ 1480	0.80	1.25	>65.0	>-170.0
DP-R17101785D-T18051880D	1805 ~ 1880	1710 ~ 1785	0.80	1.25	>65.0	>-170.0
DP-R18501910D-T19301990D	1930 ~ 1990	1850 ~ 1910	0.80	1.25	>65.0	>-170.0
DP-R19202060D-T21102170D	2110 ~ 2170	1920 ~ 2060	0.80	1.25	>65.0	>-170.0
TRI-R19101990D-T21102390D	2110 ~ 2390	1910 ~ 1990	0.80	1.25	>65.0	>-170.0
DP-R25002570D-T26202690D	2620 ~ 2690	2500 ~ 2570	0.80	1.25	>65.0	>-170.0
DP-452458D-R462468D	462 ~ 468	452 ~ 458	1.50	1.30	>60.0	>-165.0

* The other band models are available on requests

Duplexer and Triplexer (Wirelss System)

Features

▷Low IM (Max : 155 dBc)
▷Low insertion Loss
▷Excellent High Isolation
▷Custom Designs Available

Specifications

Parts No.	Passband Frequency [MHz]		Passband Insertion loss [dB max.]	Passband VSWR [max.]	Isolation [dB]	IM [dBc]
	Transmit	Receive				
DP-R380W-T390W	390 ~ 400	380 ~ 385	1.50	1.30	>65.0	>-155.0
DP-R410W-T420W	420 ~ 430	410 ~ 412	1.50	1.30	>65.0	>-155.0
DP-R708W-T744W	728 ~ 759	698 ~ 716	1.0	1.25	>65.0	>-155.0
DP-R782W-T744W	728 ~ 759	776 ~ 788	1.0	1.25	>65.0	>-155.0
TRI-R708W-R782W-744W	728 ~ 759	698 ~ 716 776 ~ 788	1.0	1.25	>65.0	>-155.0
DP-R824851W-T869896W	869 ~ 896	824 ~ 851	0.80	1.25	>100.0	>-155.0
DP-R890915W-T935960W	935 ~ 960	890 ~ 915	0.80	1.25	>65.0	>-155.0
DP-R880915W-T925960W	925 ~ 960	880 ~ 915	0.80	1.25	>100.0	>-155.0
DP-R14561480W-T14881520W	1488 ~ 1520	1456 ~ 1480	0.80	1.25	>100.0	>-155.0
DP-R17101785W-T18051880W	1805 ~ 1880	1710 ~ 1785	0.80	1.25	>100.0	>-155.0
DP-R18501910W-T19301990W	1930 ~ 1990	1850 ~ 1910	0.80	1.25	>100.0	>-155.0
DP-R19202060W-T21102170W	2110 ~ 2170	1920 ~ 2060	0.80	1.25	>100.0	>-155.0
DP-R19101990W-T21102390W	2110 ~ 2390	1910 ~ 1990	0.80	1.25	>100.0	>-155.0
DP-R25002570W-T26202690W	2620 ~ 2690	2500 ~ 2570	0.80	1.25	>100.0	>-155.0

* The other band models are available on requests

Duplexer and Triplexer (High Power)

Features

▷Low IM (Max : 155 dBc)
▷Low insertion Loss
▷Excellent High Isolation
▷Custom Designs Available

Specifications

Parts No.	Passband Frequency [GHz]		Passband Insertion loss [dB max.]	Passband VSWR [max.]	Isolation [dB]	Power Handling CW(Peak)
	Transmit	Receive				
DP-R708P-T744P	728 ~ 759	698 ~ 716	1.30	1.25	>100.0	400.0 (4 kW)
DP-R782P-T744P	728 ~ 759	776 ~ 788	1.30	1.25	>100.0	400.0 (4 kW)
TRI-R708P-R782P-T744P	728 ~ 759	698 ~ 716 776 ~ 788	1.30	1.25	>100.0	400.0 (4 kW)
DP-R824851P-T869896P	869 ~ 896	824 ~ 851	1.30	1.25	>100.0	500.0 (5 kW)
DP-R880915P-T925960P	925 ~ 960	880 ~ 915	1.30	1.25	>100.0	600.0 (6 kW)
DP-R17101785P-T18051880P	1805 ~ 1880	1710 ~ 1785	1.30	1.25	>100.0	600.0 (6 kW)
DP-R18501910P-T19301990P	1930 ~ 1990	1850 ~ 1910	1.30	1.25	>100.0	600.0 (6 kW)
DP-R19202060P-T21102170P	2110 ~ 2170	1920 ~ 2060	1.30	1.25	>100.0	600.0 (6 kW)
DP-R19101990P-T21102390P	2110 ~ 2390	1910 ~ 1990	1.30	1.25	>100.0	600.0 (6 kW)
DP-R25002570P-T26202690P	2620 ~ 2690	2500 ~ 2570	1.30	1.25	>100.0	600.0 (6 kW)

* The other band models are available on requests

EQUALIZERS

Features

▷ 2 ~ 6 GHz, 6 ~ 18 GHz
▷ Low VSWR
▷ Linear Insertion loss

Specifications

Parts No.	Frequency [GHz]	Slope [dB]	VSWR [max.]	Insertion loss [dB max.]	Linearity [dB max.]
EQ-6-020060S	2.0 ~ 6.0	6.0	1.50	1.0	±0.75
EQ-10-060180S	6.0 ~ 18.0	10.0	2.0	1.20	±1.20

* The other band models are available on requests

POWER DIVIDERS

Features

▷Frequency Range : 0.5 ~ 18 GHz
▷Widest Selection of Frequency
▷2 ~ 8 Way Designs Available
▷High Quality Construction & Connectors
▷Custom Designs Available on Request
▷High Power application for industry or military

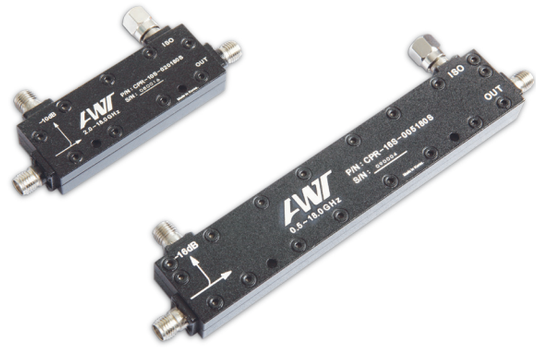
Specifications

Model	Frequency Range [GHz]	WAY	VSWR [max.]		Insertion Loss [dB max.]	Isolation [dB min.]	Amp. Balance [dB max.]	Phase Balance [Deg. max.]	Average Power [Watts]
			IN	OUT					
2PD0520S	0.50 ~ 2.0	2.0	1.25	1.25	0.70	20.0	0.30	5.0	10.0
2PD0525S	0.50 ~ 2.50	2.0	1.35	1.20	0.50	18.0	0.30	5.0	10.0
2PD0530S	0.50 ~ 3.0	2.0	1.50	1.50	0.70	15.0	0.30	5.0	10.0
2PD0560S	0.50 ~ 6.0	2.0	1.45	1.45	1.50	19.0	0.30	5.0	10.0
2PD05180S	0.50 ~ 18.0	2.0	1.70	1.70	2.0	17.0	0.50	5.0	10.0
2PD05180SM	0.50 ~ 18.0	2.0	1.50	1.50	2.0	17.0	0.50	5.0	10.0
2PD2060S	2.0 ~ 6.0	2.0	1.30	1.30	0.50	20.0	0.30	5.0	10.0
2PD2080S	2.0 ~ 8.0	2.0	1.35	1.35	0.70	20.0	0.30	5.0	10.0
2PD20180S	2.0 ~ 18.0	2.0	1.60	1.60	1.40	15.0	0.50	5.0	10.0
2PD60180S	6.0 ~ 18.0	2.0	1.60	1.60	1.0	17.0	0.50	5.0	10.0
3PD2040S	2.0 ~ 4.0	3.0	1.30	1.30	1.0	20.0	1.0	5.0	10.0
4PD0520S	0.50 ~ 2.0	4.0	1.50	1.50	0.90	20.0	0.30	5.0	10.0
4PD0530S	0.50 ~ 3.0	4.0	1.50	1.50	0.90	16.0	0.50	5.0	10.0
4PD05120S	0.50 ~ 12.0	4.0	2.0	2.0	4.50	14.0	0.70	5.0	10.0
4PD05180S	0.50 ~ 18.0	4.0	2.0	2.0	3.80	16.0	0.70	10.0	10.0
4PD2060S	2.0 ~ 6.0	4.0	1.50	1.50	0.90	16.0	0.50	10.0	10.0
4PD2080S	2.0 ~ 8.0	4.0	1.45	1.35	0.90	18.0	0.40	7.0	10.0
4PD20180S	2.0 ~ 18.0	4.0	1.70	1.70	2.0	16.0	0.50	10.0	10.0
6PD1080S	1.0 ~ 8.0	6.0	1.50	1.50	1.80	12.0	1.0	10.0	10.0
8PD0820S	0.80 ~ 2.0	8.0	1.80	1.80	2.0	18.0	0.50	10.0	10.0
8PD2070S	2.0 ~ 7.0	8.0	2.0	2.0	2.0	16.0	1.0	10.0	10.0

* The other band models are available on requests

COUPLERS

Directional couplers



Features

- ▷Frequency Range : 0.5 ~ 18 GHz
- ▷Excellent Frequency Flatness
- ▷High Directivity
- ▷Low VSWR
- ▷High Power application for industry or military

Specifications

Model	Frequency Range [GHz]	Coupling [dB]	Directivity [dB min.]		Insertion Loss[dB] /True[Max]	VSWR [max.]		Frequency Sensitivity [dB max.]	Average Power [Watts]
						IN	OUT		
CPR-10-005020S	0.50 ~ 2.0	10.0 ± 1.0	22.0		0.35 / 0.90	1.20	1.20	±0.50	10.0
CPR-20-005020S		20.0 ± 1.0	22.0		0.35 / 0.40	1.20	1.20	±0.50	10.0
CPR-16-005180S	0.50 ~ 18.0	16.0 ± 1.0	0.50 ~ 8.0	8.0 ~ 18.0	0.85 / 1.40	1.50	1.50	±1.0	10.0
			15.0	12.0					
CPR-20-005180S		20.0 ± 1.0	0.50 ~ 8.0	8.0 ~ 18.0	0.85 / 1.20	1.50	1.50	±1.0	10.0
			15.0	12.0					
CPR-10-008027S	0.80 ~ 2.70	10.0 ± 1.0	20.0		0.40 / 1.35	1.20	1.20	±0.50	10.0
CPR-20-008027S		20.0 ± 1.0	20.0		0.40 / 0.55	1.20	1.20	±0.50	10.0
CPR-30-008027S		30.0 ± 1.0	20.0		0.40 / 0.40	1.20	1.20	±0.50	10.0
CPR-10-020080S	2.0 ~ 8.0	10.0 ± 1.0	20.0		0.40 / 1.0	1.25	1.25	±0.75	10.0
CPR-20-020080S		20.0 ± 1.0	20.0		0.40 / 0.45	1.25	1.25	±0.75	10.0
CPR-30-020080S		30.0 ± 1.0	20.0		0.40 / 0.40	1.30	1.30	±0.75	10.0
CPR-10-020100S	2.0 ~ 10.0	10.0 ± 1.0	2.0 ~ 8.0	8.0 ~ 10.0	0.80 / 1.30	1.35	1.50	±0.50	10.0
			15.0	12.0					
CPR-16-020100S		16.0 ± 1.0	2.0 ~ 8.0	8.0 ~ 10.0	0.80 / 1.0	1.35	1.50	±0.50	10.0
			15.0	12.0					
CPR-10-020180S	2.0 ~ 18.0	10.0 ± 1.0	2.0 ~ 8.0	8.0 ~ 18.0	0.90 / 1.50	1.50	1.50	±1.0	10.0
			15.0	12.0					
CPR-16-020180S		16.0 ± 1.0	2.0 ~ 8.0	8.0 ~ 18.0	0.90 / 1.20	1.50	1.50	±1.0	10.0
			15.0	12.0					
CPR-20-020180S		20.0 ± 1.0	2.0 ~ 8.0	8.0 ~ 18.0	0.90 / 1.0	1.50	1.50	±1.0	10.0
			15.0	12.0					
CPR-10-060180S	6.0 ~ 18.0	10.0 ± 1.0	12.0		0.60 / 1.20	1.40	1.40	±0.75	10.0
CPR-20-060180S		20.0 ± 1.0	12.0		0.60 / 1.20	1.40	1.40	±0.75	10.0
CPR-30-060180S		30.0 ± 1.0	12.0		0.60 / 0.60	1.40	1.40	±0.75	10.0

* The other band models are available on requests

Hybrid Couplers

Features

- ▷90°, 180° Quadrature
- ▷Frequency Range : 0.5 ~ 18 GHz
- ▷LOW Loss / VSWR
- ▷High Isolation
- ▷High Directivity

Specifications

Model	Frequency Range [GHz]	Degree	Coupling [dB]	Isolation [dB]	Insertion Loss [dB]	VSWR [Max : 1]	Amp. Ripple [dB]	Phase Balance [Deg.]	Power [Watts]
HCD-90-020060S	2.0 ~ 6.0	90°	3.0	15.0	0.75	1.40	±0.50	±5.0	50.0
HCD-180-020060S	2.0 ~ 6.0	180°	3.0	15.0	0.75	1.50	±0.50	±5.0	50.0

* The other band models are available on requests

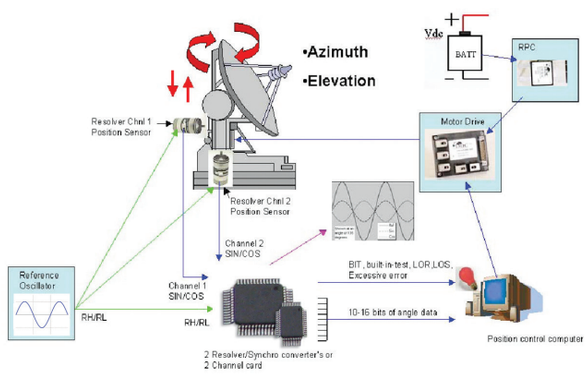
Solutions

Synchro to Digital Convertor

Synchro to Digital convertor is transducers/that converts the angular position and/or velocity of a rotating shaft to an electrical signal. A Synchro-to-Digital converter is used to convert these signals to a digital output corresponding to the shaft angle and/or velocity.

Applications

- ▷Antenna Pedestal Control
- ▷Military Fire Control System
- ▷Naval Navigation
- ▷Weapon System
- ▷Robotics Positioning
- ▷Mortor Control
- ▷Jet Engine Control
- ▷Factory Automation

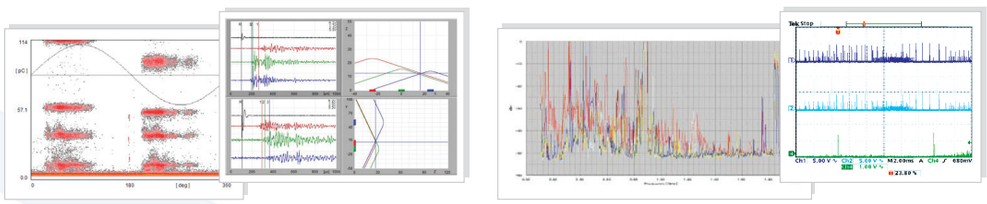


Solution Diagram

Emergency detector of air respirator user using RF communication technology

Features

- ▷Monitoring pressure of air respirator
- ▷Monitoring temperature around fireman
- ▷Monitoring fireman's motion
- ▷Quick-fill system
- ▷PASS (personal alert safety system)



PPDM-PM (Portable Partial Discharge Monitor and Position Measurement) System

AWT's UHF PPDM-PM detects the PD (Partial Discharge) for HV GIS, High Tension Transformer and measures the position of PD. PPDM-PM is used to undertake periodic partial discharge surveys in sub stations to provide early warning of developing faults-enabling corrective action to be taken before the complete breakdown occurs.

PD data from up to 3 UHF sensors is collected and stored, and the type of defect is identified automatically through the in-built expert system analysis program.

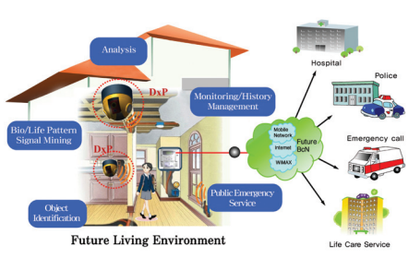
Features

- ▷PD Position Measurement
- ▷PD is interpreted automatically by expert system program
- ▷Detects faults before failure, damage
- ▷Fully protected against transient
- ▷Usable for HV GIS, Transformer
- ▷Automatic Self-Test
- ▷External Sync : 5 ~ 10 VAC, 50 ~ 280 VAC

Applications

- ▷PD tests on high voltage equipment
- ▷PD diagnosis on developing insulating materials
- ▷Designed for on-site PD diagnosis tests as well as for manufacturing and research
- ▷Measure PD fault location for GIS, Transformer, Power cables

U-Healthcare (Sensor Module)



Monitor health status using Bio and space fusing sensor information

Features

- ▷Bio-radar sensor measure heart rate and breath number
- ▷IR camera provides body temperature and thermal image
- ▷CCD camera provides color image
- ▷Voice and image recognition provides user ID
- ▷Send ID and Bio signals (Heart rate / Breath / Body temperature) to DxR
- ▷DxR analyzes and provides health care service using the Bio signals

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