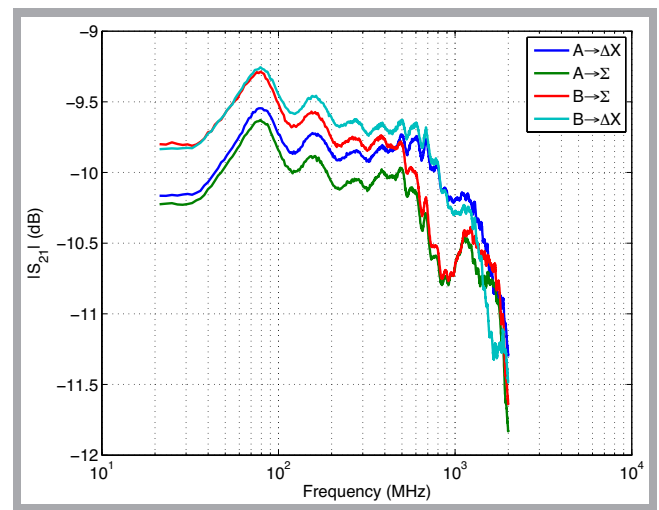
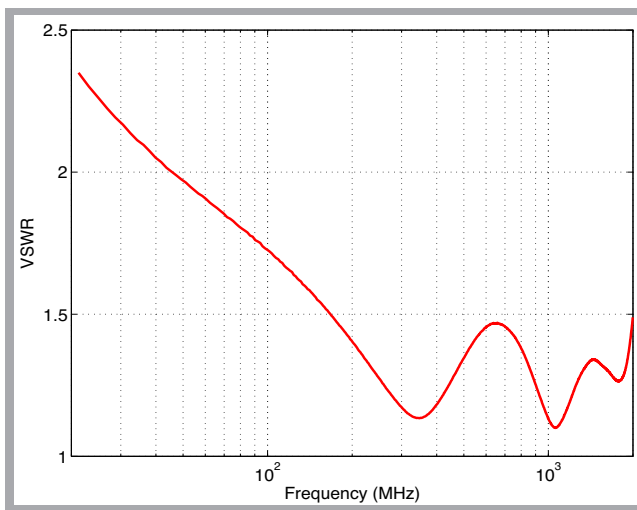
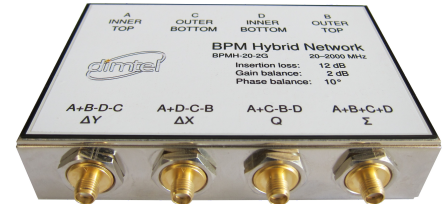


# BPM Hybrid

BPM hybrid network generates horizontal, vertical, and sum signals from four capacitive button pickups. With 20–2000 MHz response it is optimized for bunch-by-bunch diagnostic and feedback applications. A compact, fully integrated solution eliminates the need for multiple 180 degrees hybrids and interconnect. Closely matched response through true and inverting channels produces a short output pulse, ideally suited for applications requiring high bunch to bunch isolation.



Frequency range, MHz	20–2000	100–1000	1000–2000
Nominal loss, dB	9.5	9.5	11
Gain balance, dB	1.5	0.7	1.5
Phase balance, degrees	15	7	15
Return loss, dB	8	10	14
VSWR	2.3	1.9	1.5
$\Delta X$ to $\Delta Y$ isolation*, dB	30		

\* A, B, C, D driven by HP8406A frequency comb generator, signal levels on A/D and B/C pairs are adjusted up/down to extract horizontal gain and coupling to vertical plane.

## Dimtel Products

<b>LLRF9</b>	A 9-channel low-level RF controller for storage rings and boosters
<b>iGp12</b>	Bunch-by-bunch signal processor, 2 ns minimum bunch spacing
<b>iGp12H</b>	Slice-by-slice feedback signal processor for proton accelerators
<b>FBE-LT</b>	Front/back end for a bunch-by-bunch feedback system, three front end channels, one back end
<b>Actico</b>	Active kick combiner
<b>BPMH</b>	BPM hybrid network, 20–2000 MHz, four BPM inputs converted to $\Delta X$ , $\Delta Y$ , and $\Sigma$

## Commissioned Dimtel Systems

### Bunch-by-bunch feedback

ALS	DELTA	Photon Factory
ANKA	Duke SR-FEL	Sirius
APS	ELSA	SPring-8
Australian Synchrotron	HLS	SPEAR3
BEPC-II	Indus-2	SSRF
BESSY II	LNLS UVX	Super KEKB
CLS	MAX IV	TLS
CesrTA	MLS	TPS
DAΦNE	NSLS-II	

### Low-Level RF

ANKA  
DELTA  
ELSA  
SESAME

### Intra-bunch feedback

J-PARC

### About Dimtel:

Dimtel is a provider of analog and digital signal processing solutions for particle accelerators. Our primary focus is on bunch-by-bunch feedback for storage rings, bunch-by-bunch diagnostics, and low-level RF. Turnkey solutions from Dimtel allow the accelerator physicists and engineers to get the systems up and running in hours rather than years. We also provide support for beam commissioning and control system integration of our products. Contact us: [info@dimtel.com](mailto:info@dimtel.com); +1 650 862 8147

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