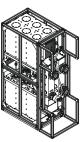
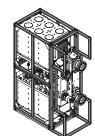


Band 3 DAB CIB Combiners

- Compact design
- For 1.54 MHz block width
- Integrated mask filters for DAB and T-DMB
- Adjacent block operation
- Temperature compensated
- Filters with cross coupling (notch function)
- High power version



BN 576816



BN 576817

DAB filter

6/200

3 dB

3 dB

Part Number Cooling BN 576816 Liquid cooling BN 576817 Liquid cooling Frequency range 174 - 240 MHz Block spacing ≥ 0 Narrowband input 3 1/8" EIA Filter type integrated cavities/size 6/200 ≡ BN 617165 Temperature stability ≤ 1 kHz / K Harmonics attenuation ≥ 50 dB for f < 500 MHz DAB and T-DMB mask filtering DAB / T-DMB @ 1.54 MHz Average input power ≤ 16 kW ⊕ 0 - 500m Tuning instruction AS6087 Insertion loss & mask filtering (alternative tuning on request) 6			
Narrowband input 3 1/8" EIA			
Narrowband input 3 1/8" EIA Filter type integrated cavities/size 6/200 ≡ BN 617165 Temperature stability ≤ 1 kHz / K Harmonics attenuation ≥ 50 dB for f < 500 MHz	Frequency range	174 - 240 MHz	
Filter type integrated cavities/size 1 kHz / K Harmonics attenuation ≥ 50 dB for f < 500 MHz DAB and T-DMB mask filtering DAB / T-DMB @ 1.54 MHz (U/U _{mm} =13 dB) Average input power ≤ 16 kW @ 0 − 500m Tuning instruction AS6087 Tuning instruction AS6087 Tuning instruction AS6087 Tuning on request f₀ ≤ 0.6 dB f₀ ± 0.77 ≤ 1.4 dB f₀ ± 0.77 ≤ 1.4 dB f₀ ± 0.77 ≤ 1.4 dB f₀ ± 1.75 ≥ 45 dB f₀ ± 1.75 ≥ 45 dB f₀ ± 1.75 ≥ 45 dB f₀ ± 2.20 ≥ 50 dB f₀ ± 2.20 ≥ 50 dB Group delay variation Aτ ≤ 1200 ns Wideband input 3 1/8" EIA 4 1/2" EIA Average input power ≤ 30 kW ≤ 60 kW Attention: The power at the wideband input must be reduced by 50 % of the power fed into the narrowband input. Mask filtering No Insertion loss ≤ 0.1 dB (non adjacent) Output 3 1/8" EIA 4 1/2" EIA Peak output voltage ≤ 12.7 kV ≤ 15.5 kV Isolation between inputs ≥ 35 dB VSWR ≤ 1.1 Dimensions (L x W x H) mm 1000 x 520 x 1420 + 50 mm bottom frame Weight = 250 kg Liquid cooling interface Stainless steel tube 12 x 1 mm ending horizontally at the bottom frame	Block spacing	≥ 0	
Temperature stability ≤ 1 kHz / K Harmonics attenuation ≥ 50 dB for f < 500 MHz	Narrowband input	3 1/8" EIA	
Harmonics attenuation ≥ 50 dB for f < 500 MHz	Filter type integrated cavities/size	6/200 ≡ BN 617165	
DAB and T-DMB mask filtering $ \begin{array}{c cccc} DAB / T-DMB @ 1.54 \ MHz \\ (\dot{U}/U_{ma}=13 \ dB) \\ \hline \\ Average input power \\ \hline Tuning instruction & AS6087 \\ \hline Insertion loss & mask filtering (alternative tuning on request) & f_0 & \leq 0.6 \ dB \\ f_0 \pm 0.77 & \leq 1.4 \ dB \\ f_0 \pm 0.97 & \geq 15 \ dB \\ f_0 \pm 1.75 & \geq 45 \ dB \\ f_0 \pm 2.20 & \geq 50 \ dB \\ \hline \\ f_0 \pm 2.20 & \geq 50 \ dB \\ \hline \\ f_0 \pm 2.20 & \geq 50 \ dB \\ \hline \\ Average input power & \leq 30 \ kW & \leq 60 \ kW \\ \hline \\ Attention: The power at the wideband input must be reduced by 50 % of the power fed into the narrowband input. \\ \hline \\ Mask filtering & No \\ Insertion loss & \leq 0.1 \ dB \ (non adjacent) \\ \hline \\ Output & 31/8" EIA & 41/2" EIA \\ \hline \\ Peak output voltage & \leq 12.7 \ kV & \leq 15.5 \ kV \\ \hline \\ Isolation between inputs & \geq 35 \ dB \\ \hline \\ VSWR & \leq 1.1 \\ \hline \\ Dimensions (L x W x H) mm & 1000 x 520 x 1420 + 50 \ mm \ bottom \ frame \\ \hline \\ Weight & \approx 250 \ kg \\ \hline \\ Liquid cooling interface & Stainless steel tube 12 x 1 mm \ ending \ horizontally at the bottom \ frame \\ \hline \\ \end{array}$	Temperature stability	≤ 1 kHz / K	
Average input power Tuning instruction Insertion loss & mask filtering (alternative tuning on request) Group delay variation Average input power Tuning instruction Insertion loss & mask filtering (alternative tuning on request) $ \begin{cases} f_0 & \leq 0.6 \text{ dB} \\ f_0 \pm 0.77 & \leq 1.4 \text{ dB} \\ f_0 \pm 0.97 & \geq 15 \text{ dB} \\ f_0 \pm 1.75 & \leq 45 \text{ dB} \\ f_0 \pm 2.20 & \geq 50 \text{ dB} \\ f_0 \pm 2.20 & \geq 50 \text{ dB} \end{cases} $ Group delay variation $ \Delta \tau \leq 1200 \text{ ns} $ Wideband input Average input power $ \leq 30 \text{ kW} $ Attention: The power at the wideband input must be reduced by 50 % of the power fed into the narrowband input. Mask filtering No Insertion loss $ \leq 0.1 \text{ dB} \text{ (non adjacent)} $ Output $ 3 1/8^* \text{ EIA} $ $ \leq 12.7 \text{ kV} $ Isolation between inputs $ \geq 35 \text{ dB} $ VSWR $ \leq 1.1 $ Dimensions (L x W x H) mm $ 1000 \times 520 \times 1420 + 50 \text{ mm bottom frame} $ Weight $ \approx 250 \text{ kg} $ Liquid cooling interface Stainless steel tube 12 x 1 mm ending horizontally at the bottom frame	Harmonics attenuation	≥ 50 dB for f < 500 MHz	
Tuning instruction Insertion loss & mask filtering (alternative tuning on request) $\begin{cases} f_0 & \leq 0.6 & dB \\ f_0 \pm 0.77 & \leq 1.4 & dB \\ f_0 \pm 0.77 & \leq 1.4 & dB \\ f_0 \pm 0.77 & \leq 1.4 & dB \\ f_0 \pm 0.77 & \leq 1.5 & dB \\ f_0 \pm 0.77 & \leq 1.5 & dB \\ f_0 \pm 0.77 & \leq 1.5 & dB \\ f_0 \pm 0.77 & \leq 1.5 & dB \\ f_0 \pm 0.77 & \leq 1.5 & dB \\ f_0 \pm 0.77 & \leq 1.5 & dB \\ d_0 \pm 0.77 & \leq 1.5 & dB \\ d_0 \pm 0.77 & \leq 1.5 & dB \\ d_0 \pm 0.77 & \leq 1.5 & dB \\ d_0 \pm 0.77 & \leq 1.5 & dB \\ d_0 \pm 0.77 & \leq 1.5 & dB \\ d_0 \pm 0.77 & \leq 1.5 & dB \\ d_0 \pm 0.77 & \leq 1.5 & dB \\ d_0 \pm 0.77 & \leq 1.5 & dB \\ d_0 \pm 0.77 & \leq 1.5 & dB \\ d_0 \pm 0.77 & \leq 1.5 & dB \\ d_0 \pm 0.77 & \leq 1.6 & dB \\ d_0 \pm 0.77 & \leq 1$	DAB and T-DMB mask filtering		
Insertion loss & mask filtering (alternative tuning on request) $\begin{cases} f_0 & \leq 0.6 \text{ dB} \\ f_0 \pm 0.77 & \leq 1.4 \text{ dB} \\ f_0 \pm 0.97 & \geq 15 \text{ dB} \\ f_0 \pm 1.75 & \geq 45 \text{ dB} \\ f_0 \pm 3.00 & \geq 50 \text{ dB} \end{cases}$ Group delay variation $\Delta \tau \leq 1200 \text{ ns}$ $Wideband input \qquad 3 1/8" \text{ EIA} \qquad 4 1/2" \text{ EIA}$ $A \text{ Average input power} \qquad \leq 30 \text{ kW} \qquad \leq 60 \text{ kW}$ $Attention: The power at the wideband input must be reduced by 50 % of the power fed into the narrowband input.}$ $Mask filtering \qquad No$ $Insertion loss \qquad \leq 0.1 \text{ dB (non adjacent)}$ $Output \qquad 3 1/8" \text{ EIA} \qquad 4 1/2" \text{ EIA}$ $Peak output voltage \qquad \leq 12.7 \text{ kV} \qquad \leq 15.5 \text{ kV}$ $Isolation between inputs \qquad \geq 35 \text{ dB}$ $VSWR \qquad \leq 1.1$ $Dimensions (L x W x H) mm \qquad 1000 x 520 x 1420 + 50 \text{ mm bottom frame}$ $Weight \qquad \approx 250 \text{ kg}$ $Liquid cooling interface \qquad Stainless steel tube 12 x 1 mm ending horizontally at the bottom frame}$	Average input power	≤ 16 kW @ 0 − 500m	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Tuning instruction	AS6087	
Wideband input 3 1/8" EIA 4 1/2" EIA Average input power ≤ 30 kW ≤ 60 kW Attention: The power at the wideband input must be reduced by 50 % of the power fed into the narrowband input. Mask filtering No Insertion loss ≤ 0.1 dB (non adjacent) Output 3 1/8" EIA 4 1/2" EIA Peak output voltage ≤ 12.7 kV ≤ 15.5 kV Isolation between inputs ≥ 35 dB VSWR ≤ 1.1 Dimensions (L x W x H) mm 1000 x 520 x 1420 + 50 mm bottom frame Weight ≈ 250 kg Liquid cooling interface Stainless steel tube 12 x 1 mm ending horizontally at the bottom frame		$\begin{array}{rcl} f_0 \pm 0.77 & \leq & 1.4 \ dB \\ f_0 \pm 0.97 & \geq & 15 \ dB \\ f_0 \pm 1.75 & \geq & 45 \ dB \\ f_0 \pm 2.20 & \geq & 50 \ dB \end{array}$	
Average input power ≤ 30 kW Attention: The power at the wideband input must be reduced by 50 % of the power fed into the narrowband input. Mask filtering No Insertion loss ≤ 0.1 dB (non adjacent) Output 3 1/8" EIA 4 1/2" EIA Peak output voltage ≤ 12.7 kV ≤ 15.5 kV Isolation between inputs ≥ 35 dB VSWR ≤ 1.1 Dimensions (L x W x H) mm 1000 x 520 x 1420 + 50 mm bottom frame Weight ≈ 250 kg Liquid cooling interface Stainless steel tube 12 x 1 mm ending horizontally at the bottom frame	Group delay variation	$\Delta \tau \leq 1200 \text{ ns}$	
Attention: The power at the wideband input must be reduced by 50 % of the power fed into the narrowband input. Mask filtering No Insertion loss $\leq 0.1 \text{ dB (non adjacent)}$ Output $\leq 0.1 \text{ dB (non adjacent)}$ Peak output voltage $\leq 12.7 \text{ kV}$ Isolation between inputs $\leq 35 \text{ dB}$ VSWR ≤ 1.1 Dimensions (L x W x H) mm $\leq 1000 \times 520 \times 1420 + 50 \text{ mm bottom frame}$ Weight $\approx 250 \text{ kg}$ Liquid cooling interface Stainless steel tube 12 x 1 mm ending horizontally at the bottom frame	Wideband input	3 1/8" EIA	4 1/2" EIA
Mask filtering No Insertion loss ≤ 0.1 dB (non adjacent) Output 3 1/8" EIA 4 1/2" EIA Peak output voltage ≤ 12.7 kV ≤ 15.5 kV Isolation between inputs ≥ 35 dB VSWR ≤ 1.1 Dimensions (L x W x H) mm 1000 x 520 x 1420 + 50 mm bottom frame Weight ≈ 250 kg Liquid cooling interface Stainless steel tube 12 x 1 mm ending horizontally at the bottom frame	Average input power	≤ 30 kW	≤ 60 kW
Mask filtering Insertion lossNoOutput3 1/8" EIA4 1/2" EIAPeak output voltage≤ 12.7 kV≤ 15.5 kVIsolation between inputs≥ 35 dBVSWR≤ 1.1Dimensions (L x W x H) mm1000 x 520 x 1420 + 50 mm bottom frameWeight≈ 250 kgLiquid cooling interfaceStainless steel tube 12 x 1 mm ending horizontally at the bottom frame			
Output $3 1/8"$ EIA $4 1/2"$ EIAPeak output voltage $\leq 12.7 kV$ $\leq 15.5 kV$ Isolation between inputs $\geq 35 dB$ VSWR ≤ 1.1 Dimensions (L x W x H) mm $1000 \times 520 \times 1420 + 50 mm$ bottom frameWeight $\approx 250 kg$ Liquid cooling interfaceStainless steel tube 12 x 1 mm ending horizontally at the bottom frame	Mask filtering		
Peak output voltage ≤ 12.7 kV ≤ 15.5 kV Isolation between inputs ≥ 35 dB VSWR ≤ 1.1 Dimensions (L x W x H) mm 1000 x 520 x 1420 + 50 mm bottom frame Weight ≈ 250 kg Liquid cooling interface Stainless steel tube 12 x 1 mm ending horizontally at the bottom frame	Insertion loss	≤ 0.1 dB (non adjacent)	
Isolation between inputs $\geq 35 \text{ dB}$ VSWR ≤ 1.1 Dimensions (L x W x H) mm $1000 \times 520 \times 1420 + 50 \text{ mm}$ bottom frame Weight $\approx 250 \text{ kg}$ Liquid cooling interface Stainless steel tube 12 x 1 mm ending horizontally at the bottom frame	Output	3 1/8" EIA	4 1/2" EIA
VSWR \leq 1.1 Dimensions (L x W x H) mm 1000 x 520 x 1420 + 50 mm bottom frame Weight \approx 250 kg Liquid cooling interface Stainless steel tube 12 x 1 mm ending horizontally at the bottom frame	Peak output voltage	≤ 12.7 kV	≤ 15.5 kV
Dimensions (L x W x H) mm $1000 \times 520 \times 1420 + 50 \text{ mm bottom frame}$ Weight $\approx 250 \text{ kg}$ Liquid cooling interface Stainless steel tube 12 x 1 mm ending horizontally at the bottom frame	Isolation between inputs	≥ 35 dB	
Weight ≈ 250 kg Liquid cooling interface Stainless steel tube 12 x 1 mm ending horizontally at the bottom frame	VSWR	≤ 1.1	
Liquid cooling interface Stainless steel tube 12 x 1 mm ending horizontally at the bottom frame	Dimensions (L x W x H) mm	1000 x 520 x 1420 + 50 mm bottom frame	
	Weight	≈ 250 kg	
Environmental conditions For limitations see "Environmental Conditions for Broadcast Products".	Liquid cooling interface	Stainless steel tube 12 x 1 mm ending horizontally at the bottom frame	
	Environmental conditions	For limitations see "Environmental Conditions for Broadcast Products".	