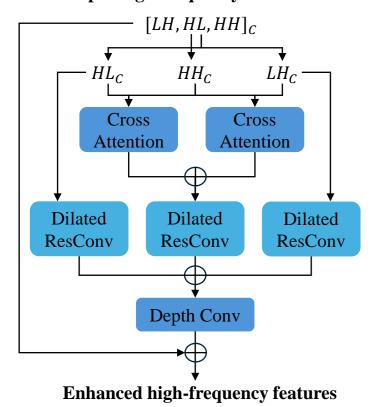
#### (a) WiD-PET Structure Training Stage Only Concatenation $LL_S$ **Spatial Consistency** Low-Dose **Guidance Information** Input Consistency $LL_{C}$ **IDWT** Sequence Diffusion **Output DWT Spatial Consistency Denoising Model** Low-Dose High-frequency Input → [LH, HL, HH]<del>\_</del> Enhancer (**HFE**) **High-Dose** Input (GT) $\rightarrow$ [LH, HL, HH] $_{\overline{G}}$

## (c) High-frequency Enhancer (HFE)

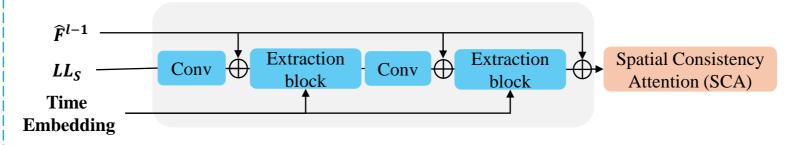
#### **Input high-frequency features**



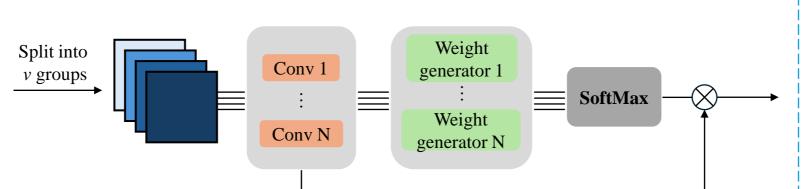
# (d) Spatial Consistency Feature Extractor (SCFE)

 $Loss_{img}$ 

 $Loss_{hf}$ 

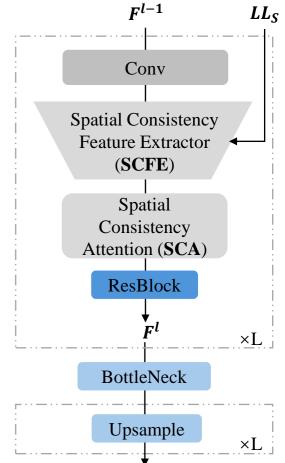


# (e) Spatial Consistency Attention (SCA)



Element-wise multiplication

# (b) Spatial Consistency Denoising Model



### (f) DWT-IDWT Module

