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Function

vDSP_ctoz

Copies the contents of an interleaved single-precision complex vector to a split complex vector.

iOS 4.0+ | iPadOS 4.0+ | Mac Catalyst 13.1+ | macOS 10.0+ | tvOS | visionOS 1.0+ | watchOS 2.0+

```
extern void vDSP_ctoz(const DSPComplex * __C, vDSP_Stride __IC, const DSPSplitComplex * __Z, vDSP_Stride __IZ, vDSP_Length __N);
```

Parameters

- __C**
The interleaved-complex input vector.
- __IC**
The distance between the real elements in the input vector. For example, a stride of 2 corresponds to a single complex element.
- __Z**
The split-complex output vector.
- __IZ**
The distance between the elements in the output vector.
- __N**
The number of complex elements that the function processes.

Mentioned in

- 📄 Understanding data packing for Fourier transforms
- 📄 Performing Fourier transforms on interleaved-complex data
- 📄 Controlling vDSP operations with stride

Discussion

For example, the following code converts the contents of an array of `DSPComplex` structures to a `DSPSplitComplex` structure:

```
let source: [DSPComplex] = [
    DSPComplex(real: 1.0, imag: 10.0),
    DSPComplex(real: 2.0, imag: 20.0),
    DSPComplex(real: 3.0, imag: 30.0),
    DSPComplex(real: 4.0, imag: 40.0),
]

let destReal = UnsafeMutableBufferPointer<Float>.allocate(capacity: 4)
let destImag = UnsafeMutableBufferPointer<Float>.allocate(capacity: 4)

var destination = DSPSplitComplex(realp: destReal.baseAddress!,
                                   imagp: destImag.baseAddress!)

vDSP_ctoz(source, 2,
           &destination, 1,
           4)

print(Array(destReal)) // Prints "[1.0, 2.0, 3.0, 4.0]".
print(Array(destImag)) // Prints "[10.0, 20.0, 30.0, 40.0]".
```

See Also

Converting interleaved-complex vectors to split-complex vectors

vDSP_ctozD

Copies the contents of an interleaved double-precision complex vector to a split complex vector.