

NAG Fortran Library Routine Document

F06HCF

Note: before using this routine, please read the Users' Note for your implementation to check the interpretation of ***bold italicised*** terms and other implementation-dependent details.

1 Purpose

F06HCF performs the operation

$$x \leftarrow Dx$$

where x is an n element complex vector and $D = \text{diag}(d)$ is a complex diagonal matrix.

Equivalently, the routine performs the element-by-element product of the vectors x and d

$$x_i = d_i x_i, \quad i = 1, \dots, n.$$

2 Specification

SUBROUTINE F06HCF (N, D, INCX, X, INCX)

INTEGER N, INCX, INCX

complex*16 D(*), X(*)

3 Description

None.

4 References

None.

5 Parameters

- | | | |
|----|--|---------------------|
| 1: | N – INTEGER | <i>Input</i> |
| | <i>On entry:</i> n , the number of elements in d and x . | |
| 2: | D(*) – <i>complex*16</i> array | <i>Input</i> |
| | <i>On entry:</i> the vector d . | |
| 3: | INCX – INTEGER | <i>Input</i> |
| | <i>On entry:</i> the increment in the subscripts of D between successive elements of d . | |
| 4: | X(*) – <i>complex*16</i> array | <i>Input/Output</i> |
| | <i>On entry:</i> the vector x . | |
| | <i>On exit:</i> the updated vector x . | |
| 5: | INCX – INTEGER | <i>Input</i> |
| | <i>On entry:</i> the increment in the subscripts of X between successive elements of x . | |

6 Error Indicators and Warnings

None.