

CPX	Complex functions					
g-shift	$\rightarrow R$	$\rightarrow P$	$C \rightarrow R$	$R \rightarrow C$	RECT $\odot$	POLAR $\odot$
f-shift	COMPLEX	UNITV	$ x $	$\angle$	dot	cross
unshifted	Re	Im	conj	Re $\angle$ Im	i	$i_{\odot}$
Page 1	F1	F2	F3	F4	F5	F6

Prev menu https://47calc.com/doc/R47/Menus/R47v0_Menu_CONV_page_1.pdf

Next menu https://47calc.com/doc/R47/Menus/R47v0_Menu_CPXS_page_1.pdf

Ref 1 https://47calc.com/doc/Application%20Notes/AN0001_C47_R47_JM_Complex_number_engineering_example.pdf

Level	Label	Type	FullName	Extended description	Category	Flag	Catalog	Default
Menu p1	CPX	MENU	Complex functions	Complex functions ; Ref : https://47calc.com/doc/Application%20Notes/AN0001_C47_R47_JM_Complex_number_engineering_example.pdf	Complex numbers		CPX	
F1	Re	Function (monadic)	Real part	Real part of Complex number	Complex numbers		Re	
F2	Im	Function (monadic)	Imaginary part	Imaginary part of Complex number	Complex numbers		Im	
F3	conj	Function (monadic)	Complex conjugate	Complex conjugate	Complex numbers		CONJ	
F4	Re↔Im	Command	Exchange real and imaginary part	Exchange real and imaginary part of Complex number	Complex numbers		Re↔Im	
F5	i	Command	Complex number (rectangular notation)	Enter complex number (rectangular notation) whether RECT is set or not ; e.g. a i b ENTER results in $a + b i$; Info : In NIM, works like CC with RECT set ; displayed according to flag CPX.j when in RECT mode	Complex numbers	CPX.j	op_ i	
F6	$i_{\odot}$	Command	Complex number (polar notation)	Enter complex number (polar notation) whether POLAR is set or not ; e.g. a $i_{\odot}$ b ENTER results in $a \angle b$ (according to ADM) ; Info : In NIM, works like CC with POLAR set ; displayed according to flag CPX.j when in RECT mode	Complex numbers	CPX.j	op_ $i_{\odot}$	
ff1	COMPLEX	Function (dyadic)	Complex number	Convert to or from Complex number (2.0-2.5)	Complex numbers		COMPLEX	
ff2	UNITV	Command	Unit vector or matrix	Unit vector or matrix for Real or Complex matrix or vector ; the result will have Euclidean magnitude 1 ; Info : UNITV also applies to Complex numbers	Complex numbers		UNITV	
ff3	x	Function (monadic)	Magnitude	Magnitude (absolute value) of Complex number	Complex numbers		x	
ff4	$\angle$	Function (monadic)	Argument (angle)	Argument (angle) of Complex number	Complex numbers		$\angle$	
ff5	dot	Function (dyadic)	Dot product (·)	Dot product of vectors in X and Y	Complex numbers		DOT	
ff6	cross	Function (dyadic)	Cross product (×)	Cross product of vectors in X and Y	Complex numbers		CROSS	
gF1	→R	Function (monadic, dyadic)	To rectangular	Transform polar to rectangular coordinates (dyadic, stack conventions according to flag RP _{HP} SET or CLEAR) ; transform Complex number or 2D/3D vector to rectangular notation (monadic) and set RECT tag ; TI : x : Re = ; y : Im = (RECT) ; Info : in Program Entry Mode, flag RP _{HP} determines whether →RECT _{HP} or →RECT _{EX} is stored ; vector display depends on flag 3Dxyz, for 2D rectangular vector : [ij] [v ₁ v ₂] ; 3D rectangular vector : [ijk] [v ₁ v ₂ v ₃]	Complex and coordinates	RP _{HP}	→RECT	
gF2	→P	Function (monadic, dyadic)	To polar	Transform rectangular to polar coordinates (dyadic, stack conventions according to flag RP _{HP} SET or CLEAR) ; transform Complex number or 2D/3D vector to polar notation (monadic) and set POLAR tag ; TI : r = ; θ = (POLAR) ; Info : in Program Entry Mode, flag RP _{HP} determines whether →POL _{HP} or →POL _{EX} is stored ; for a 3D vector in X, function →POLAR (→P) cycles through →SPH, then →CYL ; vector display depends on flag 3Dxyz, for 2D polar vector : [rθ _{ij}] [v ₁ v ₂] ^P ; 3D spherical vector : [ρθ _{ijk}] _M [v ₁ v ₂ v ₃] ^a ; 3D cylindrical vector : [rθ _{ijk}] [v ₁ v ₂ v ₃] ^c	Complex and coordinates	RP _{HP}	→POLAR	
gF3	ℂ→R	Function (monadic)	Complex to Real	Convert Complex to Real (in POLAR, using angle tag or ADM) ; TI : Im = ; Re = (RECT) ; θ = ; r = (POLAR) in X, Y	Complex numbers		ℂ→R	
gF4	R→ℂ	Function (dyadic)	Real to Complex	Convert Real to Complex (in POLAR, using angle tag or ADM)	Complex numbers		R→ℂ	
gF5	RECT ⊙	Setting (pgm)	Rectangular notation	Switch on rectangular notation ; Info : SBI L ; ⊙ is shown if flag SBcp _x is SET ; SBI : L	Complex and coordinates	POLAR	RECT ⊙	ON
gF6	POLAR ○	Setting (pgm)	Polar notation	Switch on polar notation ; Info : SBI L ; ○ is shown if flag SBcp _x is SET ; SBI : ○	Complex and coordinates	POLAR	POLAR ○	OFF