







NI-DMM™ Instrument Driver









Quick Reference Guide

for National Instruments Digital Multimeters




ICON	VI/FUNCTION NAME †	TYPE	PARAMETER	VALUE TO SET, COMMENTS
Initialize and Close				
	niDMM Initialize (niDMM_init)	ViRsrc ViBoolean ViBoolean ViSession*	resourceName IDQuery resetDevice vi	DAQ::#, where # is the device number VI_TRUE, VI_FALSE VI_TRUE, VI_FALSE Reference to new session handle
	niDMM Initialize With Options (niDMM_InitWithOptions)	ViRsrc ViBoolean ViBoolean ViString ViSession*	resourceName IDQuery resetDevice Option String vi	DAQ::#, where # is the device number VI_TRUE, VI_FALSE VI_TRUE, VI_FALSE Simulate = 0, RangeCheck = 1 QueryInstrStatus = 1, Cache = 1 Reference to new session handle
	niDMM Close (niDMM_close)	ViSession	vi	Session handle
Configure				
	niDMM Configure Measurement (niDMM_ConfigureMeasurement)	ViSession ViInt32 ViReal64 ViReal64	vi Function Range Resolution	Session handle DC volts, AC volts, and so on
	niDMM Configure Multi Point (niDMM_ConfigureMultiPoint)	ViSession ViInt32 ViInt32 ViInt32 ViReal64	vi Trigger Count Sample Count Sample Trigger Sample Interval	Session handle Default = 1 Default = 1 Immediate, External, TTL0, and so on Default = Auto
	niDMM Configure Waveform Acquisition (niDMM_ConfigureWaveformAcquisition)	ViSession ViInt32 ViReal64 ViReal64 ViInt32	vi Function Range Rate Waveform Points	Session handle Voltage Waveform, Current Waveform

† Function names for C, C++, LabWindows/CVI, and Visual Basic are in parentheses




Measurement Options

	niDMM Configure Powerline Frequency (niDMM_ConfigurePowerLineFrequency)	ViSession ViReal64	vi Powerline Frequency	Session handle Default = 60 Hz
	niDMM Configure Auto Zero (niDMM_ConfigureAutoZeroMode)	ViSession ViInt32	vi AutoZero	Session handle Default = Auto
	niDMM Configure ADC Calibration (niDMM_ConfigureADCCalibration)	ViSession ViInt32	vi ADC Calibration	Session handle Default = Auto
	niDMM Configure Offset Comp Ohms (niDMM_ConfigureOffsetCompOhms)	ViSession ViInt32	vi Offset Compensated Ohms	Session handle Default = Off
	niDMM Configure AC Bandwidth (niDMM_ConfigureACBandwidth)	ViSession ViReal64 ViReal64	vi Minimum Frequency Maximum Frequency	Session handle Hz Hz
	niDMM Configure Frequency Voltage Range (niDMM_ConfigureFrequencyVoltageRange)	ViSession ViReal64	vi Frequency Voltage Range	Session handle Default = AutoRange
	niDMM Configure Current Source (niDMM_ConfigureCurrentSource)	ViSession ViReal64	vi Current Source	Session handle Default = 1.00 mA
	niDMM Configure Waveform Coupling (niDMM_ConfigureWaveformCoupling)	ViSession ViInt32	vi Waveform Coupling	Session handle AC or DC




Triggers

	niDMM Configure Trigger (niDMM_ConfigureTrigger)	ViSession ViInt32 ViReal64	vi Trigger Source Trigger Delay	Session handle Default = Immediate Default = Auto
	niDMM Send Software Trigger (niDMM_SendSoftwareTrigger)	ViSession	vi	Session handle
	niDMM Configure Trigger Slope (niDMM_ConfigureTriggerSlope)	ViSession ViInt32	vi Trigger Slope	Session handle





Triggers (continued)

	niDMM Configure Sample Trigger Slope (niDMM_ConfigureSampleTriggerSlope)	ViSession ViInt32	vi Slope	Session handle
	niDMM Configure Meas Complete Dest (niDMM_ConfigureMeasCompleteDest)	ViSession ViInt32	vi Measurement Complete Destination	Session handle Default = None
	niDMM Configure Meas Complete Slope (niDMM_ConfigureMeasCompleteSlope)	ViSession ViInt32	vi Slope	Session handle







Actual Values

	niDMM Get Auto Range Value (niDMM_GetAutoRangeValue)	ViSession ViReal64*	vi autoRange Value	Session handle Output
	niDMM Get Aperture Time Info (niDMM_GetApertureTimeInfo)	ViSession ViReal64* ViInt32*	vi Aperture Time Aperture Time Units	Session handle Output Output (seconds or PLC)
	niDMM Get Measurement Period (niDMM_GetMeasurementPeriod)	ViSession ViReal64*	vi Measurement Period	Session handle Output (seconds)





Acquisition

	niDMM Read (niDMM_Read)	ViSession ViInt32 ViReal64*	vi Maximum Time Measurement	Session handle Milliseconds Output
	niDMM Read Multi Point (niDMM_ReadMultiPoint)	ViSession ViInt32 ViInt32 ViReal64 [] ViInt32*	vi Maximum Time Number to Read Measurements Actual Number	Session handle Milliseconds Default = 4 Output Output
	niDMM Read Waveform (niDMM_ReadWaveform)	ViSession ViInt32 ViInt32 ViReal64[]* ViInt32*	vi Maximum Time Number to Read Waveform Data Actual Number	Session handle Milliseconds Default = 1 Output Output
	niDMM Is Over Range (niDMM_IsOverRange)	ViSession ViReal64 ViBoolean*	vi Measurement Over range?	Session handle Input Output



Low-Level Acquisition

	niDMM Initiate (niDMM_Initiate)	ViSession	vi	Session handle
	niDMM Fetch (niDMM_Fetch)	ViSession ViInt32 ViReal64*	vi Maximum Time Measurement	Session handle Milliseconds Output
	niDMM Fetch Multi Point (niDMM_FetchMultiPoint)	ViSession ViInt32 ViInt32 ViReal64[] ViInt32*	vi Maximum Time Number to Fetch Measurements Actual Number	Session handle Milliseconds Default = 4 Output Output
	niDMM Fetch Waveform (niDMM_FetchWaveform)	ViSession ViInt32 ViInt32 ViReal64[]* ViInt32*	vi Maximum Time Number to Fetch Waveform Data Actual Number	Session handle Milliseconds Default = 1 Output Output
	niDMM Read Status (niDMM_ReadStatus)	ViSession ViInt32* ViInt16*	vi Backlog Acquisition State	Session handle Output Output
	niDMM Abort (niDMM_Abort)	ViSession	vi	Session handle






Utility

	niDMM Reset (niDMM_reset)	ViSession	vi	Session handle
	niDMM Self Test (niDMM_self_test)	ViSession ViInt16* ViChar []	vi Self Test Result Self Test Message	Session handle Output Output
	niDMM Revision Query (niDMM_revision_query)	ViSession ViChar [] ViChar []	vi Instrument Driver Revision Firmware Revision	Session handle Output Output
	niDMM Format Measurements Absolute (niDMM_FormatMeasAbsolute)	ViInt32 ViReal64 ViReal64 ViReal64 ViChar [] ViChar [] ViChar []	Function Range Resolution Measurement Mode String Range String Data String	DC volts, AC volts, and so on Input Input Input Output Output Output

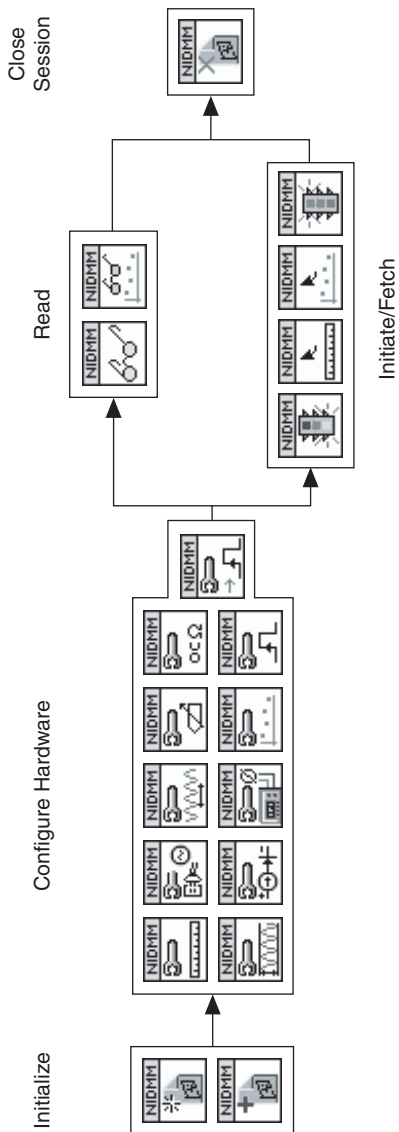
Utility (continued)

	niDMM Get Digits Of Precision (niDMM_GetDigitsOfPrecision)	ViSession ViReal64*	vi Digits	Session handle Output (3.5/4.5/5.5/6.5)
	niDMM Error Message (niDMM_error_message)	ViSession ViBoolean ViStatus* ViChar []	vi Message Box (Only applies to LV) Error Code Error Message	Session handle Default = Do not show dialog Input/Output Output

Calibration

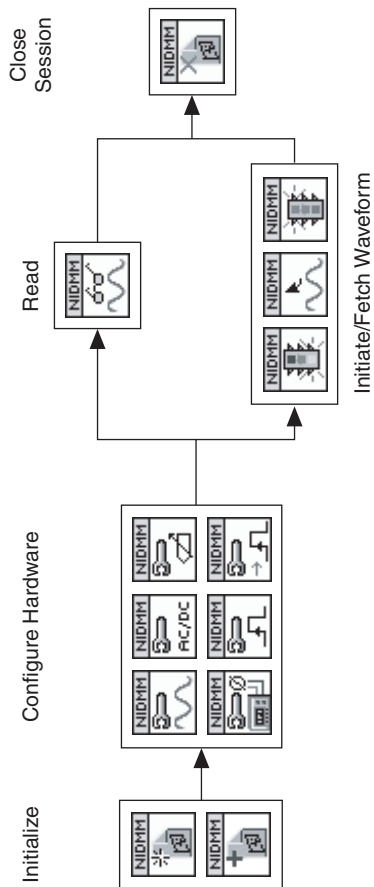
	niDMM Self Cal (niDMM_SelfCal)	ViSession	vi	Session handle
	niDMM Get Cal Count (niDMM_GetCalCount)	ViSession ViInt32 ViInt32*	vi Area Count	Session handle Default = Internal Output
	niDMM Get Dev Temp (niDMM_GetDevTemp)	ViSession ViString ViReal64*	vi Reserved Temperature	Session handle " " Output
	niDMM Get Last Cal Temp (niDMM_GetLastCalTemp)	ViSession ViInt32 ViReal64*	vi Area Temperature	Session handle Default = Internal Output
	niDMM Get Cal Date and Time (niDMM_GetCalDateAndTime)	ViSession ViInt32 ViInt32* ViInt32* ViInt32* ViInt32* ViInt32*	vi Area Month Day Year Hour Minute	Session handle Default = Internal Output Output Output Output Output

DMM Programming Flow



Waveform Acquisition Programming Flow

(NI 4070 only)





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