19xx/29xx-C[1] Power Meter: How to Build a Basic Routine Using the Power Meter Command Set

When you first receive your power meter, open up the manual and begin to attempt to construct a basic command routine from the command set list, you may find yourself asking "Where do I start?". What command should be first? This is not at all surprising. There are over 60 commands in the manual, and many are dependent upon another command for correct execution.

This paper will cover the basic set of commands that nearly every routine will begin with or contain. How you set the commands will determine the initial parameter settings of your power meter.

The basic routine consists of the following commands.

PM:MODE *x*	(set the power meter mode—see manual for *x* value definitions)
PM:DS:EN 0	(disable the buffer)
PM:DS:CLEAR	(clear the buffer)
PM:DS:INT x	(data collection interval—see Tech Note 9 for the most recent definition.)
PM:DS:SIZE *xx*	(set the buffer size, 0-250000 samples per channel)
PM:DS:BUF x	(set buffer mode.)
PM:DS:EN 1	(enable the buffer—start data storage)

To simply collect power readings at regular intervals, use the above command set with the following settings.

PM:MODE *1*	(set the power meter mode to CW Continuous)
PM:DS:EN 0	(disable the buffer)
PM:DS:CLEAR	(clear the buffer)
PM:DS:INT 1	(set data collection interval to 0.1ms for 918D-series low power photodiode detectors or 1ms for 818P-series high power detectors —see Tech Note 9 for the most recent definition.)
PM:DS:SIZE *xx*	(set the buffer size, 0-250000 samples per channel)
PM:DS:BUF 0	(set buffer mode to fixed size.)
PM:DS:EN 1	(enable the buffer—start data storage)

Unless otherwise noted, complete definitions of the commands used in this paper can be found in the power meter manuals.

To download data from the buffer to your computer, append the basic routine with the PM:DS:GET? xx query, where xx refers to the number or number range of data points to download. Or, if you prefer to download your data to a WinCE compatible USB flash disk, you can use the PM:DS:SAVEBUFFER command.

All of the above examples have been written for single channel power meter applications. If you have a dual channel power meter, such as the 2931-C or the 2936-C, you can designate for the routine to be run on one channel only or you can run the same or different routines on each channel.

To select the channel, precede the basic routine set with the PM:CHAN x command. Setting x = 1 corresponds to Channel A, x = 2 corresponds to Channel B.

It is a simple matter to alter this command set to take advantage of external triggering functions for beginning and ending data collection (see Tech Note 10 for more detail and several examples).

[1] excluding the 1930/2930-C and the 1916-C power meters.