Lawrence Berkeley National Laboratory

Ono Sokki CF6400 Analyzer
(Commonly used keys are in bold)

Quick Reference v1.0

FUNC - cursor function settings:
a. delta cursors, partial average, partial overall (rms)
b. AUTO SET - set point(s) to monitor in a range
- value, -3dB, max-min, 10%-90% (time)

c. SEARCH - cursor search mode behavior
- max peak, successive peaks, P-P(time)

d. INTEGRAL - Calculate area under curve

TIME - display time domain plot/options:
time waveform plot, acf, ccf, pdf, cdf, data statistics

SPECT -display frequency domain plot/options:
power spectra (signal vs. frequency), cross spectra

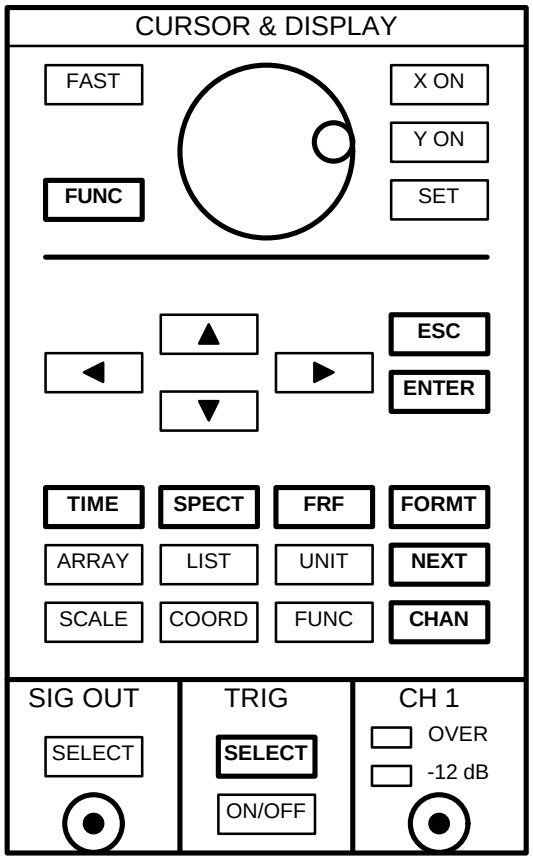
ARRAY - 3-d plot (array of values) settings:
3-d waterfall displays, color spectrograph

LIST - display numeric list of values/options:
arbitrary, peaks, harmonics, sideband, cursor defined

SCALE - x and y axis display scaling settings:
a. x-axis (use delta cursor to set range)
b. y-axis - manual (by frame), auto, kind scale (manual by kind, i.e. time, power, frf), kind num (set kind scale), numeric (set manual by frame)
c. gain - on/off (y-axis scale using cursor up/down)
d. phase - 1 scale/unwrap, 2 channel delay time

COORD - plot coordinate system settings:
mag., real, imag, phase, nicols/nyquist orb(3d) plots

SIG OUT - signal output settings:
a. select: sine, swept sine, pseudo random, random, impulse, pip, periodic random
b. freq set: input freq, bandlimiting, auto, pink filter
c. amplitude: on/off, offset
d. memory output, output continuous, convolution



Common operations: (easy as 1… 2… 3...)
a. Frequency spectra of channel 2 in frame 2:
- push NEXT to highlight frame 2
- push CHAN to select channel 2
- push SPECT to display spectra

b. Xfer fctn of channel 3 (re: chl) in frame 1:
- push NEXT to highlight frame 1
- push CHAN to select channel 3
- push FRF, then XFER to display xfer fctn

c. Change scale: push SCALE, Y-AXIS, select type (frame/kind), set values, turn on type

X ON - x cursor on

Y ON - y cursor on

SET - cursor set reference point
set cursor position for certain commands(delta, etc.)

FRF - display freq response fctn plot/options:
transfer fctn, impulse resp, coherence, S/N, H2, Bode

FORMAT - display format settings:
1-4 plots, overlay plots, plot gridlines

UNIT - x and y axis unit settings:
a. unit x (Hz, CPM, harmonic order, sec)
b. unit y (rms, peak, P-P, V^2, PSD, ESD)
c. harmonic list set
d. log x and log y

NEXT - make next plot frame active:
active plot will have type highlighted i.e., PWR SP1

FUNC - frequency domain calculation functions:
a. equalization function
b. waveform calculations (CALC1 - CALC4)
c. integration/differentiation
d. octave analysis (conversion, 1/1, weighting, bars)
e. inverse FFT (spectrum) - bandlimiting, taper, xH1
f. damping (half-value width method)

CHAN - increment "active" input channel:
current channel is displayed in upper right corner

TRIG - time domain trigger settings:
source chan, type, slope, level, position

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MEMORY
BLOCK - block data (plots) memory operations:
store, recall, catalog, auto storage, insert/delete block

RECORD - time data memory record/playback:
record on/off, block/all, playback, find max. value

COND VIEW - overall view of analyzer settings:
spreadsheet view of all analyzer setting

LABEL - measurement descriptive label:

COMMAND
AUTO SEQ - programmable analyzer macros:

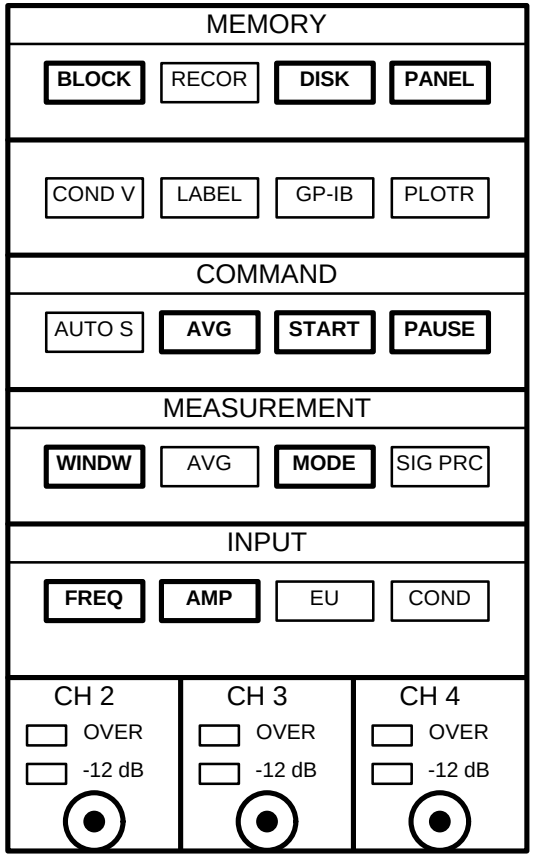
AVG - turn on averaging:

MEASUREMENT
WINDOW - windowing function settings:
rectangular, hanning, flattop, force, expon., user

AVG - measurement averaging function settings:
a. power spectrum/freq domain without phase (sum, exp, peak, sweep, difference, set number/time)
b. time domain (sum, expon., set number/time)
c. amplitude domain (sum)
d. fourier/freq domain with phase (sum, expon.)
e. max overall - spectra with highest "overall" value
f. display - instantaneous plot with average plot

INPUT
FREQ - frequency range settings:
frequency zoom - start/stop or cursor set center/range

AMP - amplitude range, input coupling settings:
input voltage range, AC/DC coupling



Common Operations:
a. Averaging: push AVG (in measurement group), choose type and number/time, push AVG (in command group), push START.
b. Storing current plot to disk: push DISK, ST MASS, CRT, enter file name, push ENTER
c. Averaging stored time record data: push MODE (in measurement group), SOURCE, MASS, FORMAT, CONTINU on, AVG (in command group), push START
d. 1.44mb disks: push DISK, UTIL, 1.44M

DISK - storage onto floppy disk:
a. store to disk from memory (mass storage) - current display frame (crt), auto, block(s)
b. store to disk from time record memory
c. store to disk from panel condition (setup) memory
d. load from disk to memory, time, setups
e. utility - format, purge files, 1.44MB disk option

PANEL - analyzer settings (front panel) memory:
store/recall, clear, autorecall on startup

GP-IB - interface settings:

PLOTTER - plotter and printer settings:
HP-GL, ThinkJet (HP2225AJ), PaintJet (HP3630A)

START - begin measurement/averaging:

PAUSE - pause measurement/averaging:

MODE - general frequency analysis settings:
a. measure: linear, octave, swept sine
b. channel setup: 2ch/4ch analysis, master channel
c. analysis calculations: cross (all), power/time only
d. analysis data source: analog, memory, disk
e. time frame overlap - 0%, 50%, max
f. set frame length = lines of resolution* 2.56

SIG PROC - time domain calculation functions:
integrate/diff., DC cancel, smooth, trend elim., abs.

EU - x and y axis engineering unit settings:
calibration of plots and cursors to engineering units

COND - input circuitry general settings:
anti-alias filter, auto range, test signal