

# DATASHEET

## 500 X,F/H,F-D-05-Z



### Key Features:

- $^{19}\text{F}$  on X AND  $^1\text{H}$  channel enabling  $^{19}\text{F}\{^1\text{H}\}$  and e.g.  $^{13}\text{C}\{^{19}\text{F}\}$ .
- Fast channel adjustment for all nuclei within seconds.
- Superior  $^1\text{H}$  sensitivity and water suppression.
- Full access to all nuclei around 2H on the X channel .

NMR Nucleus	Signal/Noise	Sample, noise range
$^1\text{H}$	$\geq 650:1$	0.1% Ethylbenzene in Chloroform-D / Noise = 200 Hz, LB = 1 Hz
$^1\text{H}$	$\geq 160:1^*$	2mM Sucrose in 90% $\text{H}_2\text{O}$ / 10% $\text{D}_2\text{O}$ / AQ=1s, Noise = 1.5ppm
$^{19}\text{F}_{\text{[H]}}$	$\geq 650:1$	TFT in Chloroform-D / Noise = 1 ppm, LB = 2 Hz
$^{19}\text{F}_{\text{[X]}}$	$\geq 360:1$	TFT in Chloroform-D / Noise = 1 ppm, LB = 2 Hz
$^{31}\text{P}$	$\geq 250:1$	TPP in Acetone-D6 / Noise = 5 ppm, LB = 5 Hz
$^{13}\text{C}$	$\geq 250:1$	ASTM (40% Dioxane in Benzene-D6) / Noise = 40 ppm, LB = 3.5 Hz
$^{15}\text{N}$	$\geq 30:1$	90% Formamide in DMSO-D6 / Noise = 2 ppm, LB = 0.3 Hz

### NMR Nucleus Pulse Width

$^1\text{H}$	$\leq 9 \mu\text{s}$
$^{19}\text{F}_{\text{[H]}}$	$\leq 12 \mu\text{s}$
$^{19}\text{F}_{\text{[X]}}$	$\leq 15 \mu\text{s}$
$^{31}\text{P}$	$\leq 14 \mu\text{s}$
$^{13}\text{C}$	$\leq 12 \mu\text{s}$
$^{15}\text{N}$	$\leq 18 \mu\text{s}$

**Description:** QUAD 500 X,F/H,F-D-05-Z is a two radio frequency channel probe, optimized for X detection. The X channel covers  $^{19}\text{F}$  and the nuclei range between  $^{31}\text{P}$  and  $^{15}\text{N}$ . The second probe circuit can be tuned either for  $^1\text{H}$  or  $^{19}\text{F}$ . The probe is equipped with actively shielded single-axis gradient. All channels including lock can be tuned and matched without removing the probe. The probe can be operated at temperatures between  $-50^\circ\text{C}$  and  $+100^\circ\text{C}$  using the appropriate accessories (not included). This probe is equipped with FCA (fast channel adjustment) which enables tuning and matching of all channels within seconds without drift.

### Feature

### Rated

$^1\text{H}$ Line shape non-spinning*	$\leq 0.8/7/14\text{Hz}$
$^1\text{H}$ Line shape spinning	$\leq 0.6/6/12\text{Hz}$
VT-range	$-50 \dots +100^\circ\text{C}$
Z-Gradient	50 Gauss/cm (@10A)

### Parameters/Sample

@ 50%/0.55%/0.11% peak height / Sample 1% Chloroform in Acetone-D6
@ 50%/0.55%/0.11% peak height / Sample 1% Chloroform in Acetone-D6

\* These specifications are only valid for 500 MHz spectrometers with at least 34 RT-shims. Probe performance on other systems may be different.

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