Agilent ^{1}H/^{19}F AutoX Triple Resonance Indirect Detection Probe

Data Sheet

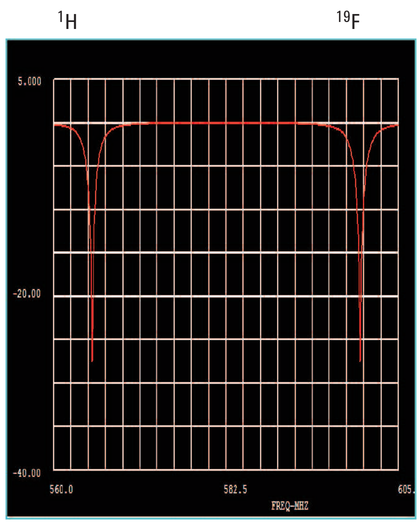

Figure 1
Network analyzer plot of simultaneously tuned H/F circuit as viewed from single probe port.

Key Benefits

- **Performance**–This probe delivers high sensitivity and outstanding resolution for double and triple resonance experiments involving ^{1}H, ^{19}F, and X(^{15}N - ^{31}P). The inner coil is simultaneously double-tuned for optimal ^{1}H, ^{19}F sensitivity and experimental versatility.
- **Ease of Use**–The ^{1}H/^{19}F AutoX Triple Resonance Probe, together with the dual high band configuration of the Agilent NMR System and the ProTune Accessory, enables automatic switching of detection and decoupling nuclei. Patented probe circuitry and the elegant VNMRS RF routing system eliminate the need to manually move cables or filters.
- **Versatility**–The probe offers simultaneous triple resonance ^{1}H, ^{19}F, and X capability. The X channel can be tuned over the range of ^{15}N to ^{31}P. NMR experiments including ^{1}H{^{19}F}, ^{19}F{^{1}H}, ^{19}F{X}, ^{1}H{X}, X{^{19}F}, X{^{1}H}, ^{1}H{^{19}F,X}, ^{19}F{^{1}H,X}, and X{^{1}H,^{19}F} can all be performed effortlessly with the ProTune equipped dual high band configuration of the Agilent NMR System.

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600 MHz Results

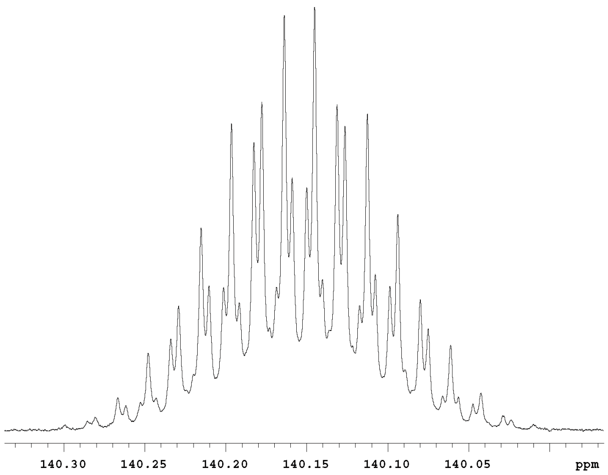

Figure 2
Purity analysis. ^{31}P of a sample labeled $(CF_3CH_2O)_3$-P.

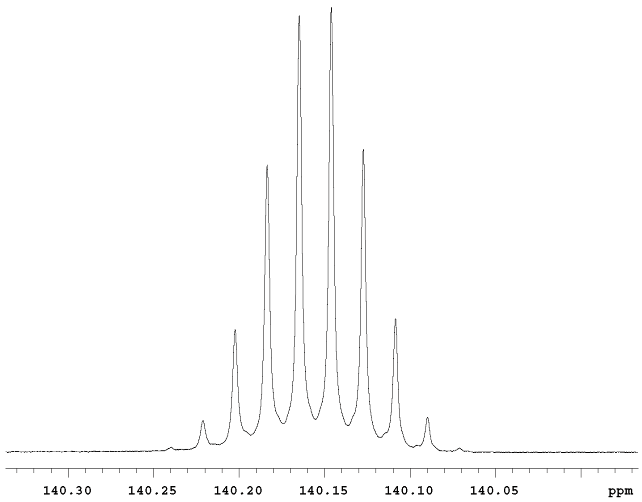

Figure 4
$^{31}P\{^1H\}$ The resulting 10-line pattern indicates nine coupled ^{19}F atoms.

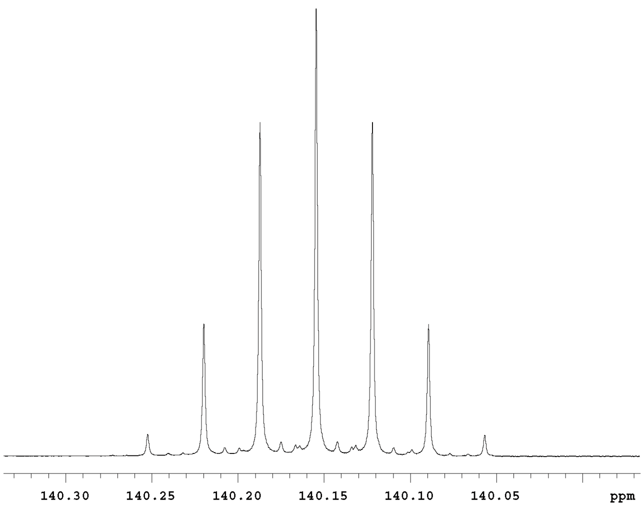

Figure 3
$^{31}P\{^{19}F\}$ The resulting 7-line pattern indicates six coupled ^1H atoms.

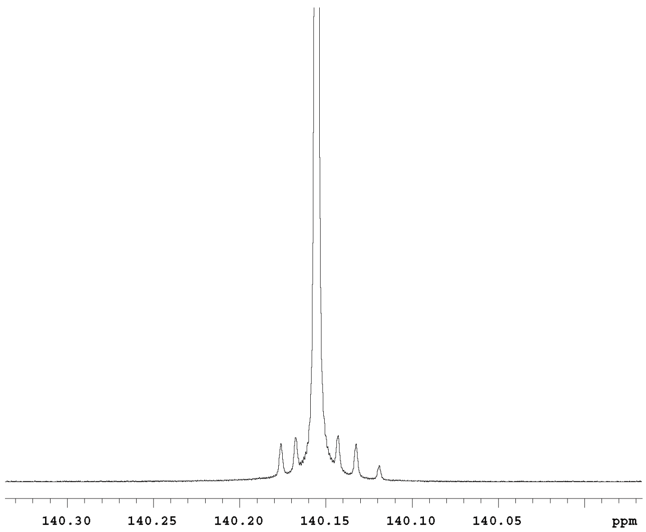

Figure 5
$^{31}P\{^1H, ^{19}F\}$ There are two pairs of ^{13}C satellites in the baseline arising from two distinct ^{13}C sites.

Final Determined Structures:

Major: $(CF_3CH_2O)_3$-P

Minor: $(CF_3CH_2O)_3$-PO, $(CF_3CH_2O)_2$-P(H)O, CF_3CH_2OH

Ordering Information

^1H frequency	500 MHz part number	600 MHz part number
5.0 mm	S199005092	S199006088

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