

MODEL NO. PRO-2054

1 LOCAL OSC FREQUENCY CALCULATION

-1 MODEL NO. PRO-2054 formula for 1st, 2nd and 3rd Local oscillation frequencies are as follow :

RECEIVING BAND (FR STEP)	FREQ. STEP (kHz)	RECEIVING FREQ. FR (MHz)	1st LOCAL PLL 1 /VCO 1 or VCO 2 (MHz)	2nd LOCAL PLL 2 /VCO 3 (MHz)	3rd LOCAL X' TAL (MHz)
VHF Low	5.0	28.0000 ~ 54.0000	$A = (FR + 380.800) / 0.075$ $= A.xxx \text{ (Cut away decimal)}$ $1st \text{ Local} = A \times 0.075$ $1st \text{ IF} = 1st \text{ Local} - FR$	2nd Local = 1st IF - 21.4	20.9450
VHF High	8.33	108.0000 ~ 136.9916		2nd Local = 1st IF - 21.4	20.9450
	5.0	137.0000 ~ 137.9950		"	"
	12.5	138.0000 ~ 143.9875		"	"
	5	144.0000 ~ 148.0000		"	"
	12.5	148.0125 ~ 150.7750		"	"
	7.5	150.7825 ~ 150.8125		2nd Local = 1st IF - 21.4025	20.9475
	"	150.8150 ~ 154.4525		2nd Local = 1st IF - 21.4	20.9450
	"	154.45625 ~ 154.47875		"	"
	"	154.4825 ~ 154.5050		"	"
	5.0	154.5100 ~ 154.5250		"	"
	6.25	154.52750 ~ 154.54625		2nd Local = 1st IF - 21.3975	20.9425
	7.5	154.5475 ~ 154.6075		2nd Local = 1st IF - 21.4025	20.9475
	5.0	154.6100 ~ 154.6550		2nd Local = 1st IF - 21.4	20.9450
	7.5	154.6575 ~ 156.2475		2nd Local = 1st IF - 21.3975	20.9425
	5.0	156.2500 ~ 157.4750		2nd Local = 1st IF - 21.4	20.9450
	7.5	157.4775 ~ 161.5650		2nd Local = 1st IF - 21.3975	20.9425
	5.0	161.5700 ~ 162.0200		2nd Local = 1st IF - 21.4	20.9450
	12.5	162.0250 ~ 173.2000		"	"
	6.25	173.20375 ~ 173.22250		2nd Local = 1st IF - 21.4025	20.9475
	"	173.22500 ~ 173.38750		2nd Local = 1st IF - 21.4	20.9450
	"	173.39000 ~ 173.40875		2nd Local = 1st IF - 21.3975	20.9425
	12.5	173.4125 ~ 174.0000		2nd Local = 1st IF - 21.4	20.9450
UHF Low	6.25	406.0000 ~ 512.0000		2nd Local = 1st IF - 21.4	20.9450
UHF High	6.25	806.0000 ~ 823.9875	$A = (FR - 380.800) / 0.075$ $= A.xxx \text{ (Cut away decimal)}$ $1st \text{ Local} = A \times 0.075$ $1st \text{ IF} = FR - 1st \text{ Local}$	2nd Local = 1st IF - 21.4	20.9450
	"	849.0000 ~ 868.9875		"	"
	"	894.0000 ~ 960.0000		"	"
	"	1240.0000 ~ 1300.0000		"	"

FR DENOTES Frequency Received.

-2 IF FREQUENCY

1st IF : 380.7275 ~ 380.86875Hz

2nd IF : 21.3975MHz / 21.4000MHz / 21.4025MHz

3rd IF : 455kHz

-3 Example

RECEIVING BAND (FR STEP)	FREQ. STEP (kHz)	RECEIVING FREQ. FR (MHz)	1st LOCAL PLL 1 /VCO 1 or VCO 2 (MHz)	2nd LOCAL PLL 2 /VCO 3 (MHz)	3rd LOCAL X' TAL (MHz)
VHF Low	5.0	28.0000	$A : 5450.666 = (28.0000 + 380.800) / 0.075$ $= 5450.666$ (Cut away decimal) 1st Local : $408.750 = 5450 \times 0.075$ 1st IF : $380.750 = 408.750 - 28.0000$	$359.350 = 380.750 - 21.4$	20.9450
		40.0000	$5610.666 = (40.0000 + 380.800) / 0.075$ $= 5610.666$ (Cut away decimal) $420.750 = 5610 \times 0.075$ $380.750 = 420.750 - 40.0000$	$359.350 = 380.750 - 21.4$	20.9450
		54.0000	$5797.333 = (54.0000 + 380.800) / 0.075$ $= 5797.333$ (Cut away decimal) $434.775 = 5797 \times 0.075$ $380.775 = 434.775 - 54.0000$	$359.375 = 380.775 - 21.4$	20.9450
VHF High	8.33	108.0000	$6517.333 = (108.0000 + 380.800) / 0.075$ $= 6517.333$ (Cut away decimal) $488.775 = 6517 \times 0.075$ $380.775 = 488.775 - 108.0000$	$359.375 = 380.775 - 21.4$	20.9450
	6.25	154.5275	$7137.7 = (154.5275 + 380.800) / 0.075$ $= 7137.7$ (Cut away decimal) $535.275 = 7137 \times 0.075$ $380.7475 = 535.275 - 154.5275$	$359.350 = 380.7475 - 21.3975$	20.9425
	12.5	174.0000	$7397.333 = (174.0000 + 380.800) / 0.075$ $= 7397.333$ (Cut away decimal) $554.775 = 7397 \times 0.075$ $380.775 = 554.775 - 174.0000$	$359.375 = 380.775 - 21.4$	20.9450

RECEIVING BAND (FR STEP)	FREQ. STEP (kHz)	RECEIVING FREQ. FR (MHz)	1st LOCAL PLL 1 /VCO 1 or VCO 2 (MHz)	2nd LOCAL PLL 2 /VCO 3 (MHz)	3rd LOCAL X' TAL (MHz)
UHF Low	6.25	406.0000	$10490.666 = (406.0000 + 380.800) / 0.075$ $= 10490.666$ (Cut away decimal) $786.750 = 10490 \times 0.075$ $380.750 = 786.750 - 406.0000$	$359.350 = 380.750 - 21.4$	20.9450
		446.0000	$11024.000 = (446.0000 + 380.800) / 0.075$ $= 11024.000$ (Cut away decimal) $826.800 = 11024 \times 0.075$ $380.800 = 826.800 - 446.0000$	$359.400 = 380.800 - 21.4$	20.9450
		512.0000	$11904.000 = (512.0000 + 380.800) / 0.075$ $= 11904.000$ (Cut away decimal) $892.800 = 11904 \times 0.075$ $380.800 = 892.800 - 512.0000$	$359.400 = 380.800 - 21.4$	20.9450
UHF High	6.25	806.0000	$5669.333 = (806.0000 - 380.800) / 0.075$ $= 5669.333$ (Cut away decimal) $425.175 = 5669 \times 0.075$ $380.825 = 806.000 - 425.175$	$359.425 = 380.825 - 21.4$	20.9450
		860.0000	$6389.333 = (860.0000 - 380.800) / 0.075$ $= 6389.333$ (Cut away decimal) $479.175 = 6389 \times 0.075$ $380.825 = 860.000 - 479.175$	$359.425 = 380.825 - 21.4$	20.9450
		960.0000	$7722.666 = (960.0000 - 380.800) / 0.075$ $= 7722.666$ (Cut away decimal) $579.150 = 7722 \times 0.075$ $380.850 = 960.000 - 579.150$	$359.450 = 380.850 - 21.4$	20.9450