

AMATEUR RADIO STATION EMR SAFETY MANAGEMENT BOOK

Amateur Callsign	VK7TO
Station Location	Down by the banks of the hanky panky
Assessed By	Lance Conry
Assessment Date	11 Sept 2025



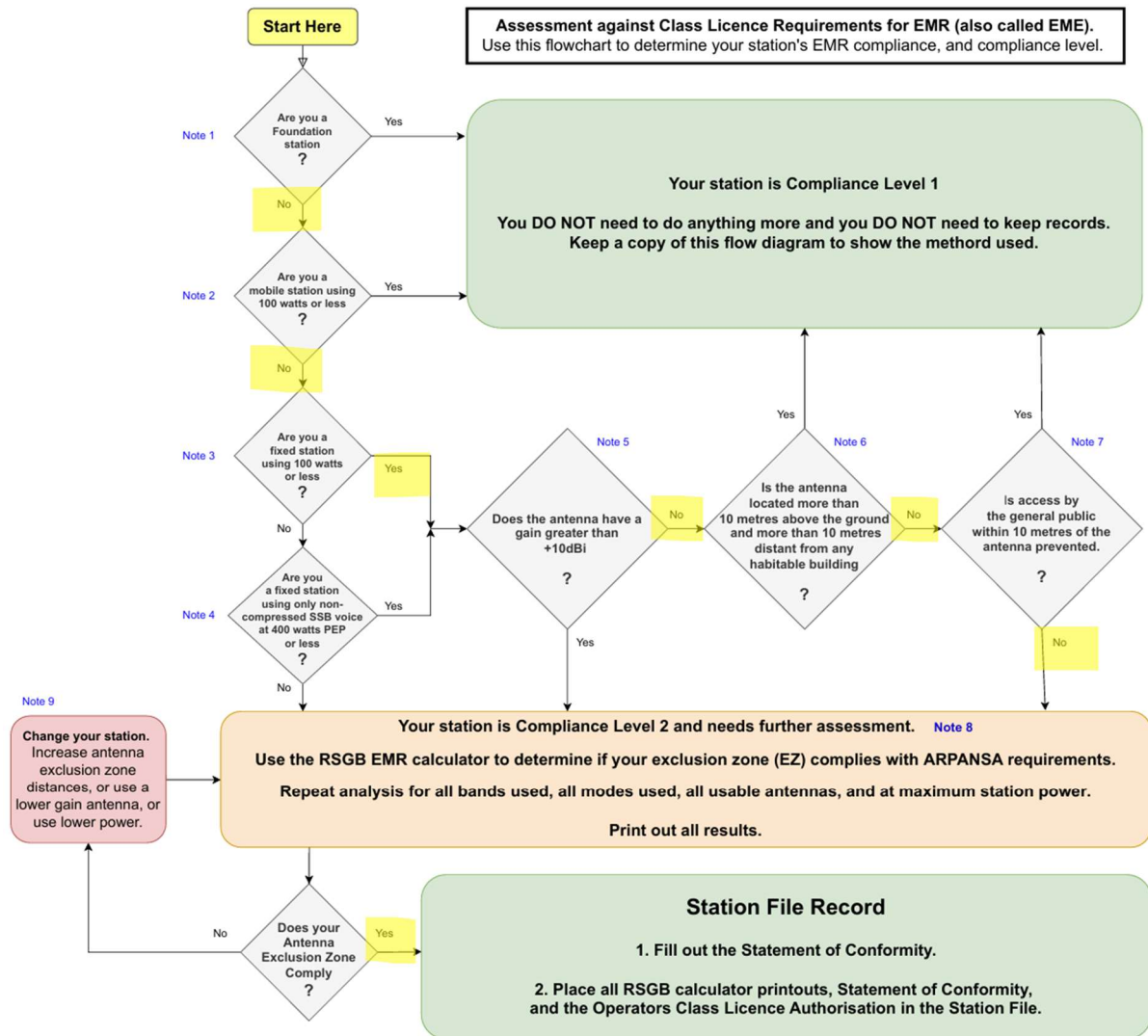
TRANSMITTING ANTENNA SYSTEM SUMMARY

Ant. System/Item	System 1	System 2	System 3	System 4
Description	HF EFHW	20 Vertical	VHF/UHF Diamond	VHF ¼ WL GP
Location (public/private)	Driveway boundary	On house roof	On house roof	On house roof
Frequency	3.5 - 50 MHz	14 MHz	144 MHz – 440 MHz	144 MHz – 440 MHz
Tx Power	100 W	100 W	100 W	100 W
Tx Modes	SSB/CW/Digital	SSB/CW/Digital	FM/SSB/CW/Digital	FM/SSB/CW/Digital
Tx Time (% of 6 mins)	50%	50%	50 %	50 %
Antenna Type/Gain	Dipole ~2 dBi	¼ WL Vertical ~3 dBi	Colinear vertical ~3dBi	¼ wave vertical ~3dBi
Antenna Height (lowest point)	4 m	7 m	7 m	7 m
Coax Type/Losses	6 m RG213	15 m RG213	15 m RG213	10 m RG213
Compliance Class	2	1	1	1

EMR Safety Requirements:

- System 1:** Keep more than 2.2 m below the antenna.
- System 2:** Inherently safe because of low power, gain and non-public area.
- System 3:** Inherently safe because of low power, gain and non-public area.
- System 4:** Inherently safe because of low power, gain and non-public area.

SYSTEM 1

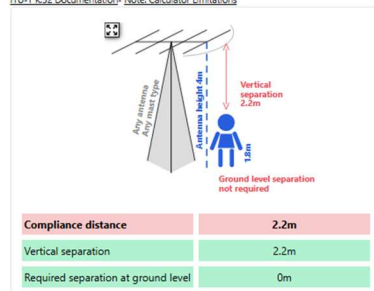


Radio		Feeder		Antenna	
Band	80m	Cable type	RG213	Antenna type	Half wave dipole
Frequency	3.65MHz	Loss per 100m	-1.2dB	Antenna gain	1.6 (2.2dBi)
Transmit mode	RTTY	Cable length (m)	6	Mainlobe EIRP	80.7W (19.1dBW)
Mode factor	100% (0dB)	Feeder loss	-0.1dB	Antenna polarization	Horizontal
Transmitter power (W)	100 (20dBW)	Second feeder losses (-dB)	0	Height of antenna (m)	4
Transmit % in 6 minutes	50 (-3dB)	Other losses (-dB)	0	Directivity factor (-dB)	0
Average power from transmitter	50W (17dBW)	Average power into antenna	49.2W (16.9dBW)	Average EIRP	80.7W (19.1dBW)
Peak power from transmitter	100W (20dBW)	Peak power into antenna	98.3W (19.9dBW)	Peak EIRP	161.3W (22.1dBW)

Further assessment required (average power > 10W or peak power > 100W EIRP)
Please use one of the methods below

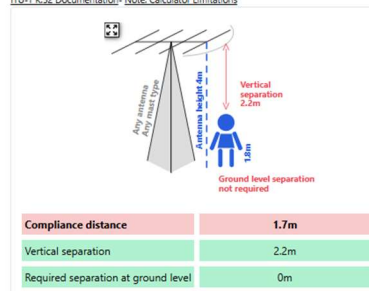
ITU-T K.52 (ICNIRP 1998 Limits)

ITU-T K.52 Documentation- Note: Calculator Limitations

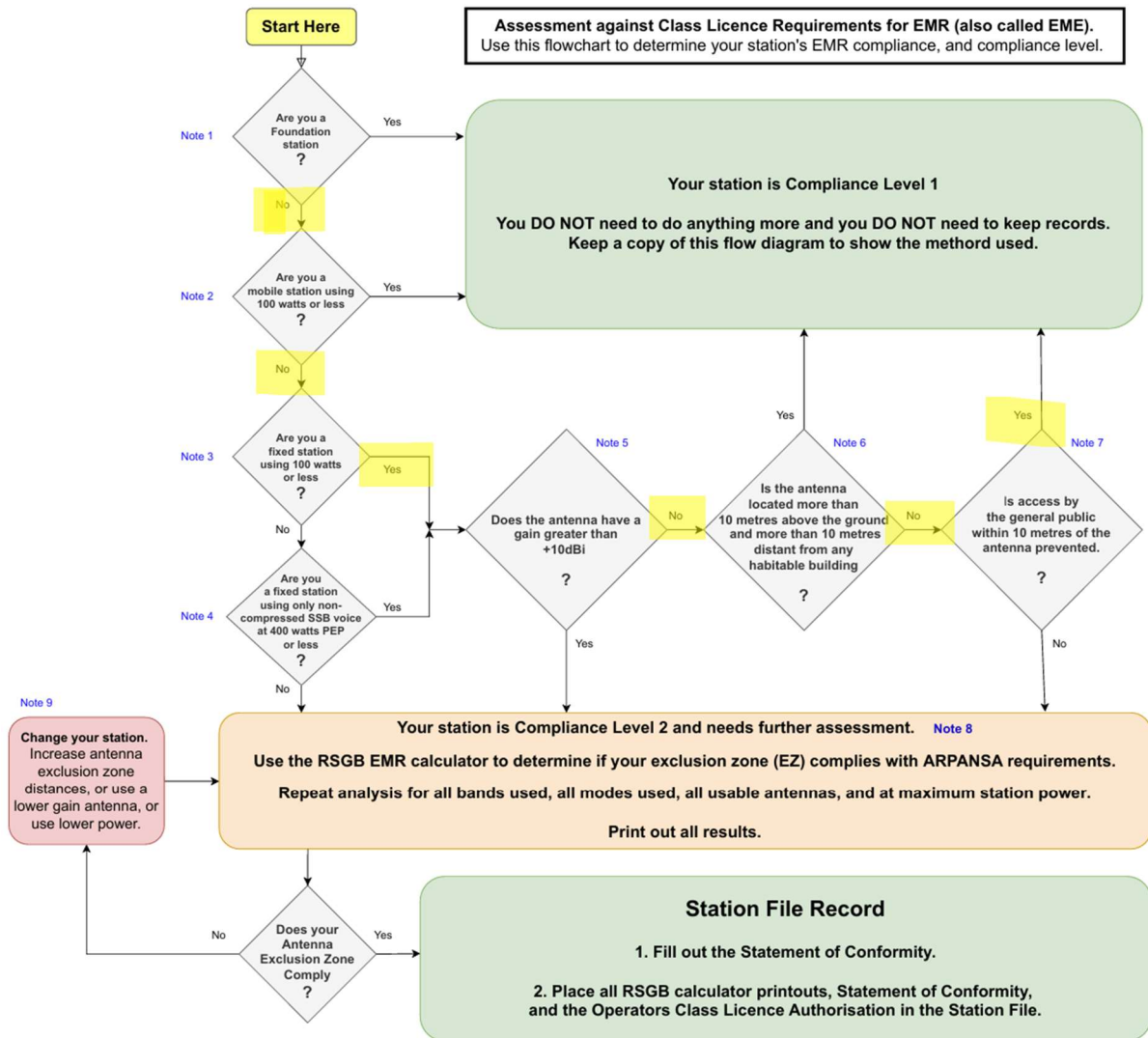


ITU-T K.52 (ICNIRP 2020 Limits)

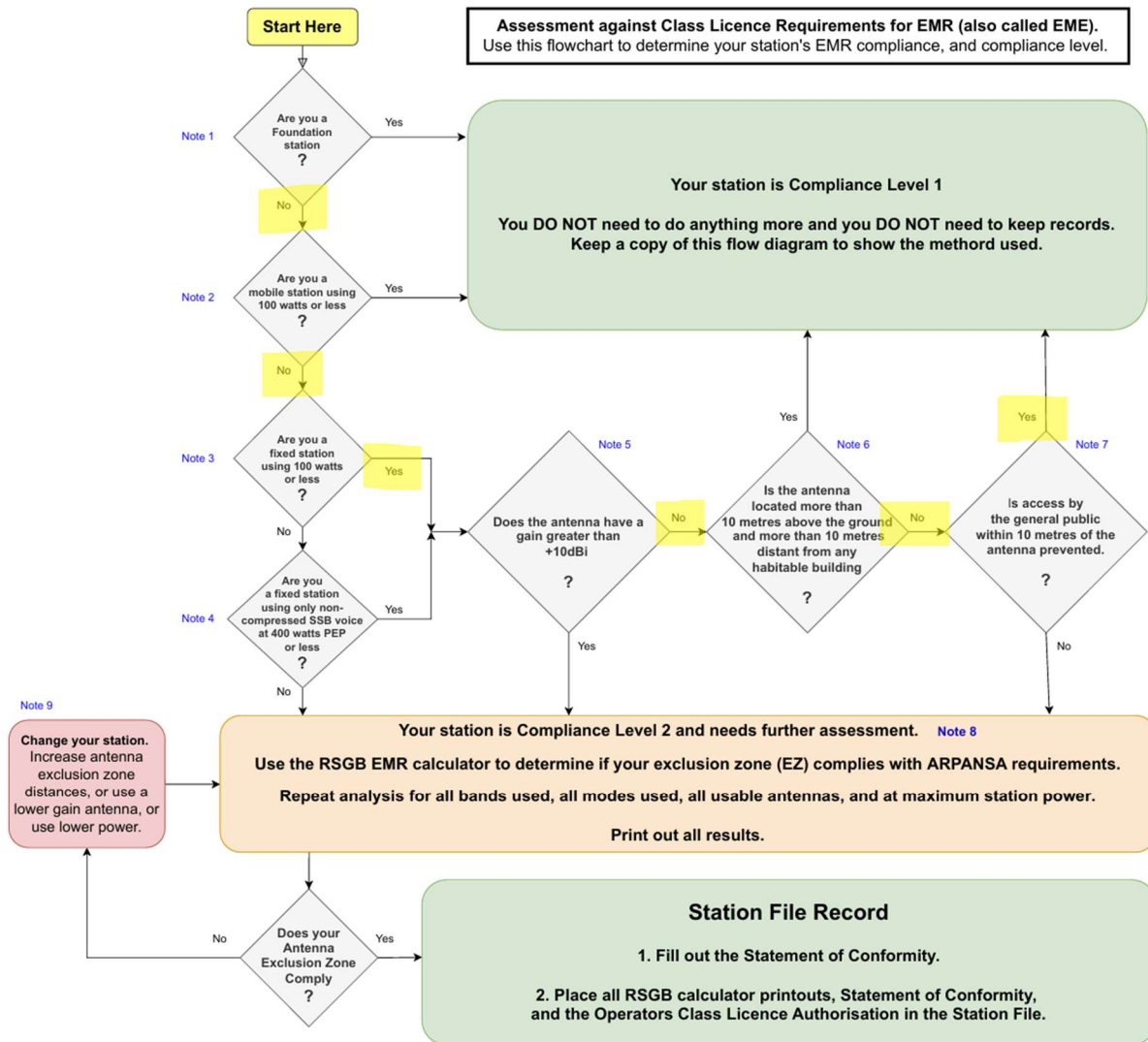
ITU-T K.52 Documentation- Note: Calculator Limitations



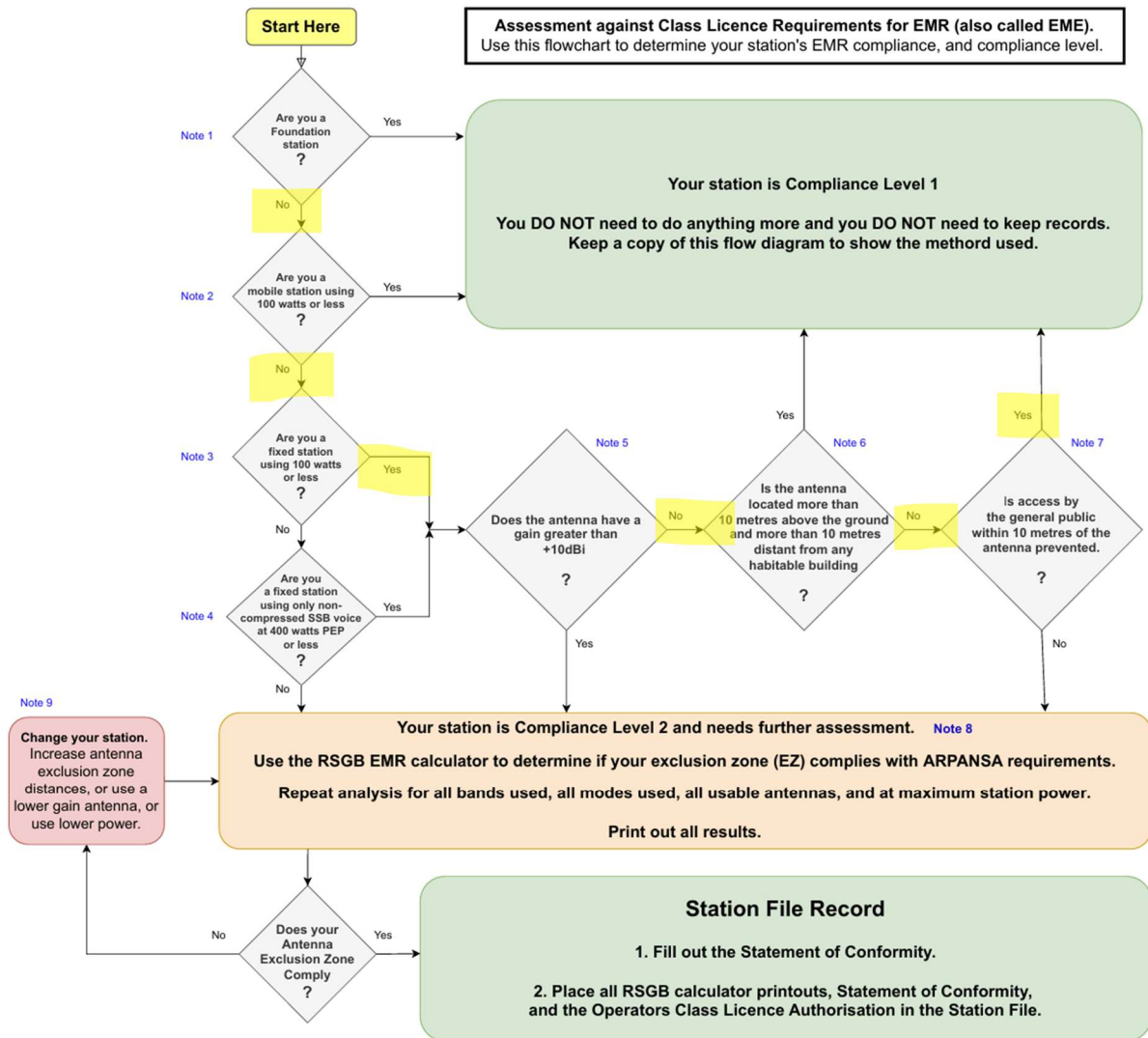
SYSTEM 2



SYSTEM 3



SYSTEM 4



APPENDIX I: RESOURCES

- Amateur Radio EMR Flowchart: <https://www.wia-education.com.au/resources-for-clubs>
- RSGB Calculator: <https://rsgb.services/public/software/emccalculator/>