RF Look Bin v.1_DataType1

Trata-se de formato de arquivo desenhado para uso no appColeta, registrando monitorações do espectro. Formado por quatro blocos – “File Header”, “Gps/TimeStamp Data”, “Spectral Block Data” e “Text Trailer Block (JSON)”.

File Header	Gps/TimeStamp Block	Spectral Block	Text Trailer Block (JSON)

File Header

80 bytes

Type of block	Field	Format	Note
File Format Header 24 bytes	FileName	*String* com 15 caracteres (um byte por caractere)	“RFlookBin v.1/1” {“Format”:”RF Look Bin”,”Version”:1,”DataType”:1}
	BitsPerPoint	uint8	8 (uint8) | 16 (int16) | 32 (float32) uint8: value = -2*OffSet+255; encodeData = uint8(2.*rawData + value) int16: encodeData = int16(100.*rawData) float32: encodeData = single(rawData)
	EstimatedSamples	uint32	EstimatedSamples = Duration/RevisitTime
	WritedSamples	uint32	
Spectrum analyzer MetaData 26 bytes	FreqStart	float32	
	FreqStop	float32	
	Resolution	float32	
	DataPoints	uint16	
	TraceMode	int8	1 (ClearWrite) | 2 (Average) | 3 (MaxHold) | 4 (MinHold)
	Detector	int8	1 (Sample) | 2 (Average/RMS) | 3 (PositivePeak) | 4 (NegativePeak)
	LevelUnit	int8	1 (dBm) | 2 (dbµV)
	Preamp	int8	0 (Off) | 1 (On)
	AttenuationMode	int8	0 (Manual) | 1 (Automatic)
	AttenuationValue	int8	Se AttenuationMode = 1: AttenuationValue = -1
	SampleTime	float32	
	Alignment 64-bits	2 bytes	Reservado
GPS Data 18 bytes	gpsType	uint8	0 (Manual) | 1 (Built-in GPS) | 2 (External GPS)
	gpsStatus	uint8	-1 (Manual) | 0 (Invalid) | >= 1 (Valid)
	Latitude	float32	Se gpsStatus <= 0: Latitude = -1
	Longitude	float32	Se gpsStatus <= 0: Longitude = -1
	utcTimeStamp_YY	int8 (-2020)	Se gpsType = 0 || gpsStatus == 0: utcTimeStamp_YY = -1, utcTimeStamp_MM = -1, utcTimeStamp_DD = -1, utcTimeStamp_HH = -1, utcTimeStamp_mm = -1, utcTimeStamp_ss = -1, utcTimeStamp_SSS = -1
	utcTimeStamp_MM	int8	
	utcTimeStamp_DD	int8	
	utcTimeStamp_HH	int8	
	utcTimeStamp_mm	int8	
	utcTimeStamp_ss	int8	
	utcTimeStamp_SSS	int16 (*1000)	
Offset Info 12 bytes	Offset1	uint32	Start byte of GPS/TimeStamp Block
	Offset2	uint32	Start byte of Spectral Block
	Offset3	uint32	Start byte of Text Trailer Block (JSON)

Gps/TimeStamp Block

(20*EstimatedSamples) bytes

Field	Format
localTimeStamp_YY	int8 (-2020)
localTimeStamp_MM	int8
localTimeStamp_DD	int8
localTimeStamp_HH	int8
localTimeStamp_mm	int8
localTimeStamp_ss	int8
localTimeStamp_SSS	int16 (*1000)
RefLevel	int16
AttenuationFactor	uint8
gpsStatus	uint8
Latitude	float32
Longitude	float32

Spectral Block

(BitsPerPoint/8 * DataPoints * EstimatedSamples) bytes

Field	Format
Array of Levels	Vetor com comprimento igual a DataPoints, sendo cada número representado como uint8, int16 ou float32 (definido pela variável BitsPerPoint).

Text Trailer Block (JSON)

{“TaskName”:“PMEC 2021”,”ThreadID”: 1,”Description”:“Faixa 1 de 10”,”Node”:“ Keysight Technologies, N9344C,CN06041424,A.06.27”,”Antenna”:“Telescopica”,”AntennaHeight”:“2 m”,”RevisitTime”:“10 seg”}

Optional fields	Format
AntennaAzimuth AntennaElevation	{“Field1”:“String”,“Field2”:Numeric}
Selectivity	
IntegrationFactor	

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