



## Monitoring Report January 2019

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD	SH (BW)	DETAILS
<b>80m band informational only! - Amateur co-primary, shared with other also primary allocated services!</b>									
3527.0	2345	10	01			F1B	50	200	almost daily
3532.0	2239	24	01			DQPSK	14x75	~6k1	LINK 11 ISB Mode
3532.0 VFO LSB	2347	10	01			DQPSK	14x75	2k7	LINK 11 ESB Mode
3549.0 VFO USB	2351 2340	10 29	01			G1D PSK8	2400	2k7	MIL 188-110A (D2) mod (Hybrid) preamble 4 tones, PSK4 75Bd 450Hz spacing often
3550.0	1638	18	01			J7D	12x120	2k7	BPSK; CIS12 often
3553.8	2350	24	01			PSK8	2400	2k4	STANAG 4285 almost daily
3610.0	1641	18	01			B7D DQPSK	14x75	~6k1	LINK 11 CLEW; DSB Mode
3741.5	1720	28	01			OFDM51	37.5	~ 2k5	tone spacing 46.92Hz; Pilot tone
3784.0	2325	29	01			J7D	12x120	2k7	BPSK; CIS12
6999.8	1812	13	01			PSK8	2400	2k7	MIL 188-141B, partially in 40m band
7000.0	1803	13	01			J3E-U		2k1	English patois
7003.5	1610	29	01	ALG		304HF1B	200	100	Pactor 1; encrypted connect often
7014.0	2343	10	01			J7D	12x120	2k7	BPSK; CIS12
7032.0	22	28	01			FMCW	40 sps	10k	OTHR; Bursts, BD6s, BRI 60s
7055.0	1438	30	01			J3E-L			Music and Voice often
7070.0	1657	29	01		220	MFSK8	125	1750	ALE, MIL 188-141A often
7081.0	0949	23	01			F1B	75	250	
7108.0	0954	23	01			OFDM	30	appx 2k9	tone spacing appx 44.4 Hz pilottone at 3300Hz
7112.0	1624	18	01			J7D	12x120	2k7	BPSK; CIS12 often
7127.0	0907	30	01			F1B	75	250	
7129.0	1013	23	01			J7D	12x120	2k7	BPSK; CIS12
7134.0	2250	29	01			MFSK8	125	1750	ALE, MIL 188-141A
7140.0	1610		01	ERI	VOBM	A3E		~ 9k	BC almost daily
7141.0	2254	29	01			FMCW	50 sps	10k	OTHR; Bursts, BD3s; BRI appx 45s
7164.0	1416	24	01			J7D	12x120	2k7	CIS12, idling, 13 carriers only
7193.0	10157	14	01	RUS	RDL	F1B	36+50	200	CIS 36-50 almost daily
7197.0	1929	14	01	TUR	334013	MFSK8	125	1750	ALE, MIL 188-141A
7197.0	1944	14	01	TUR	378013	MFSK8	125	1750	ALE, MIL 188-141A
7197.0	2041	14	01	TUR	306018	MFSK8	125	1750	ALE, MIL 188-141A
7197.0	2049	14	01	TUR	368018	MFSK8	125	1750	ALE, MIL 188-141A
7197.0	2058	14	01	TUR	316013	MFSK8	125	1750	ALE, MIL 188-141A
7197.0	2059	14	01	TUR	345013	MFSK8	125	1750	ALE, MIL 188-141A
7197.0	2107	14	01	TUR	337013	MFSK8	125	1750	ALE, MIL 188-141A
7197.0	2144	14	01	TUR	354013	MFSK8	125	1750	ALE, MIL 188-141A
10130.0	1001	23	01			F1B	50	500	strong! often
14001.8	1441	30	01			PSK8	2400	2k4	STANAG 4285
14153.0	0938	26	01	RUS		FMOP	50 sps	10k	OTHR; Bursts; BD 10s; BRI 35s
14171.0	0853	30	01			J7D	12x120	2k7	BPSK; CIS12
14241.0	0943	26	01	RUS		FMOP	50 sps	10k	OTHR; Bursts; BD 10s; BRI 35s
14260.0	0849	30	01			FMOP	50 sps	10k	OTHR ; long lasting
14265.0	0932	26	01			FMOP	10 sps	160k	OTHR



kHz	UTC	DD	MM	ITU	IDENT	MODE	BD	SH (BW)	DETAILS
14280.0	1010	02	01			AM			Number station (reported by HB9CNY)
14292.0	0922	25	01			F1B	75	500	
14293.0	0900	30	01			FMOP	66.66	10k	
14295.0	1301	30	01	TJK		A3E		~9k	Radio Tajik (3 <sup>rd</sup> of 4765 kHz) often
14308.0	0917	25	01			F1B	75	500	
14322.0	0946	25	01			FMCW	40 sps	~10k	OTHR; Bursts BD 6s
14339.0	0954	25	01			FMCW	40 sps	~10k	OTHR; Bursts BD 6s

Errors and omissions excepted

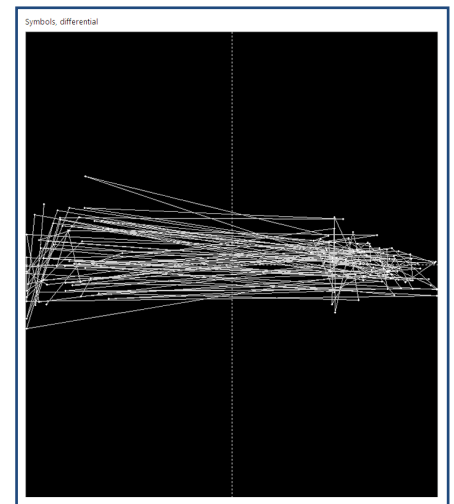
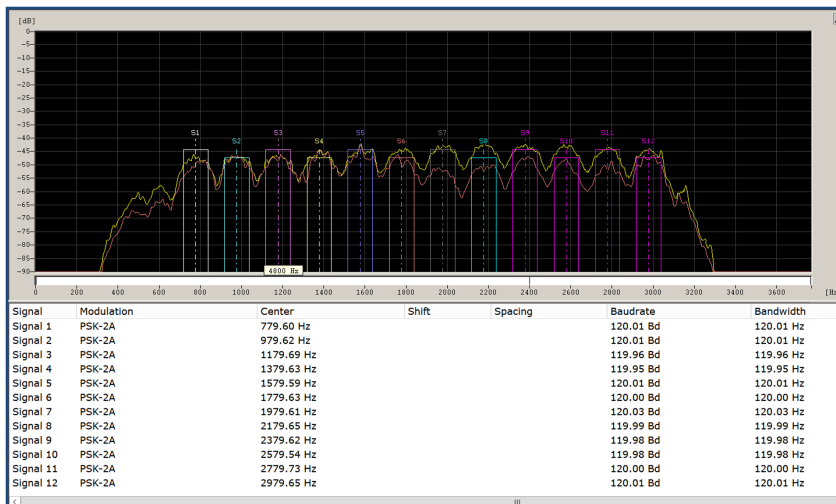
Digital transmissions: Frequency mostly center frequency; otherwise indicated.

**BC** = Broadcast // **BD** = Baud, or also Burst duration // **BRI** = Burst repetition interval // **SH** = Shift or Spacing (Hz)  
**BW** = Bandwidth // **OTHR** = over the horizon radar // **FMCW** = frequency modulated continuous wave //  
**FMOP** = frequency modulated on pulse // **sps** = sweeps per second // **vd** = various dates // **vt** = various times  
**DF** = Direction finding (radio location) // **TDoA** Time difference of arrival

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## Analysis of a CIS 12 (aka AT3004D) Signal



1) Analysis with WAVECOM W-Code Classifier

2) Phase plane of one channel

CIS-12 is a 12 tone multi-channel system, each modulated with 120 Bd DBPSK or also DQPSK. The Channel spacing is 200 Hz. An unmodulated pilot carrier is placed at +3300 Hz from the suppressed carrier (not illustrated)

These modems are found almost every day in our bands, mostly BPSK, less QPSK modulated.