



LA PRÉDICTIVE

Maintenance Conditionnelle

ANALYSE VIBRATOIRE

DEMONSTRATION
AMIENS

RATIONALISER LA MAINTENANCE
AU MEILLEUR COÛT



Rapport de contrôle

Client : DEMONSTRATION

Lieu d'intervention : AMIENS

Contrôle réalisé par : M. DUMONT

Date du contrôle : 15/01/2015

Rapport réalisé le : 25/01/2015

Par : M. DUMONT



Présentation

1) But du contrôle

Rechercher et déceler des défauts de fonctionnement sur les organes contrôlés.

Apporter les éléments de décision permettant une intervention corrective et/ou préventive adaptée sur les installations

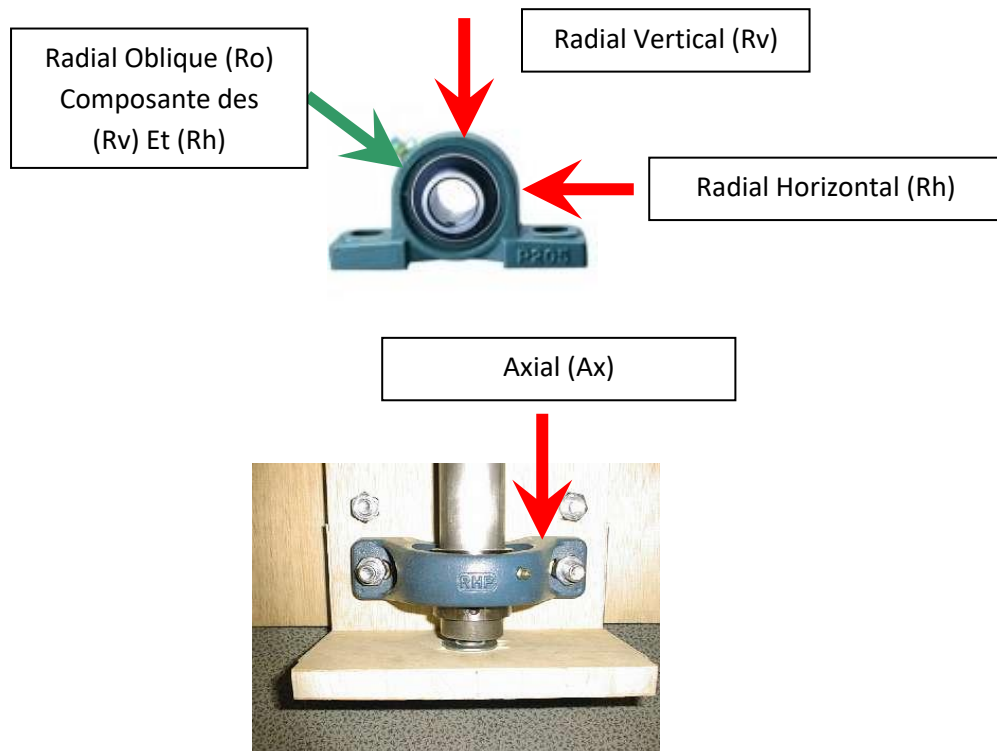
2) Principe de la mesure

Les mesures sont réalisées sur l'équipement avec un capteur du type "accéléromètre" avec intégration en vitesse.

Des mesures en basses fréquences (10 Hz à 1 KHz) sont réalisées afin de déceler un balourd ou un défaut d'alignement

Des mesures spécifiques pourront être réalisées en hautes fréquences (1 KHz à 20 KHz) pour déceler un défaut sur les roulements.

A chaque point de mesure, nous effectuons, sauf problème d'accès, un relevé du signal vibratoire suivant les dénominations suivantes

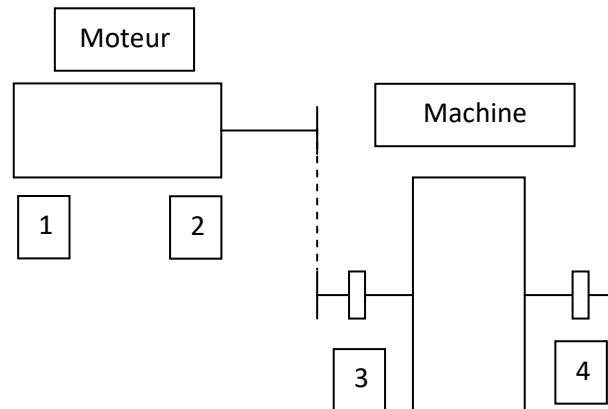
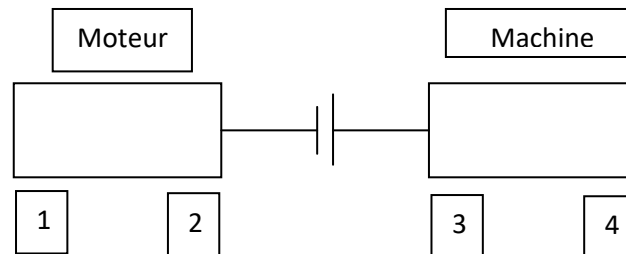


Pour une mesure correcte il faut au minimum 3 mesures
Rh, Rv et Ax mais on peut remplacer les Rh et Rv par le Ro



Nomenclature générale des points :

Numérotation du menant au mené, en cas de numérotation spécifique, le schéma sera ajouté à la fiche de la machine.



3) Norme ISO 10816-3 pour les fréquences de 10 Hz à 1KHz (vitesse)

Tableau A.1 — Classification des zones de sévérité vibratoire pour les machines du groupe 1: Machines de grande dimension d'une puissance nominale supérieure à 300 kW et inférieure ou égale à 50 MW; machines électriques d'une hauteur d'axe $H \geq 315$ mm

Type de support	Limite de zone	Déplacement efficace	Vitesse efficace
		μm	mm/s
Rigide	A/B	29	2,3
	B/C	57	4,5
	C/D	90	7,1
Souple	A/B	45	3,5
	B/C	90	7,1
	C/D	140	11,0

Tableau A.2 — Classification des zones de sévérité vibratoire pour les machines du groupe 2: Machines de taille moyenne d'une puissance nominale supérieure à 15 kW jusqu'à et y compris 300 kW; machines électriques d'une hauteur d'axe de $160 \text{ mm} \leq H < 315$ mm

Type de support	Limite de zone	Déplacement efficace	Vitesse efficace
		μm	mm/s
Rigide	A/B	22	1,4
	B/C	45	2,8
	C/D	71	4,5
Souple	A/B	37	2,3
	B/C	71	4,5
	C/D	113	7,1



Tableau remis en forme pour une meilleure compréhension :

Puissance nominale	Type de support	Limites de zone	Vitesse de l'amplitude des vibrations en mm/s	Niveau global
de 300 kW à 50 MW	Rigide	A	de 0 à 2,3	Normal
		B	de 2,3 à 4,5	Acceptable
		C	de 4,5 à 7,1	Non satisfaisant
		D	Sup à 7,1	Non admissible
	Souple	A	de 0 à 3,5	Normal
		B	de 3,5 à 7,1	Acceptable
		C	de 7,1 à 11	Non satisfaisant
		D	sup à 11	Non admissible
de 15 kW à 300 kW	Rigide	A	de 0 à 1,4	Normal
		B	de 1,4 à 2,8	Acceptable
		C	de 2,8 à 4,5	Non satisfaisant
		D	Sup à 4,5	Non admissible
	Souple	A	de 0 à 2,3	Normal
		B	de 2,3 à 4,5	Acceptable
		C	de 4,5 à 7,1	Non satisfaisant
		D	sup à 7,1	Non admissible

4) Modèles et caractéristiques du matériel utilisé

- Capteur : accéléromètre avec embase magnétique 100 mV/G N° 29029
- Collecteur de données : dB VIB Coco 80 N° 32834
- Logiciel d'analyse : Crystal instruments



Tableau récapitulatif

N° fiche	Zone	Nom machine	Anomalie constatée		
			NON	A surveiller	OUI
1	Séchoir 1	V1		X	
2	Séchoir 1	V2		X	
3	Séchoir 1	V3			X
4	Séchoir 2	V1	X		
5	Séchoir 2	V2	X		
6	Séchoir 2	V3	X		

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FICHE 1

V1

Observations et recommandations

	Moteur	Ventilateur
Marque	LEROY SOMMER	
Vitesse/fréquence de rotation	1480	
Puissance	200	
Fondation	SOUPLE	

Pour que l'analyse soit la plus précise possible il nous faut **toutes** les caractéristiques des roulements se trouvant dans vos équipements

Machines	N° du point	Type de mesure	Mesure globale			Mesure spectrale	
			N° de courbe	Niveau Global (mm/s)	Urgence	N° de courbe	Observation / Recommandation
Moteur (arrière)	1	Radial	766	5.51	NON SATISFAISANT	772	
		Axial	NC				
Moteur (avant)	2	Radial	764	6.17	NON SATISFAISANT	771	
		Axial	765	5.65	NON SATISFAISANT	770	
Palier (côté moteur)	3	Radial	763	4.15	NON SATISFAISANT	769	
		Axial	NC				
Palier (côté turbine)	4	Radial	767	5.12	NON SATISFAISANT	773	
		Axial	768	6.03	NON SATISFAISANT	774	

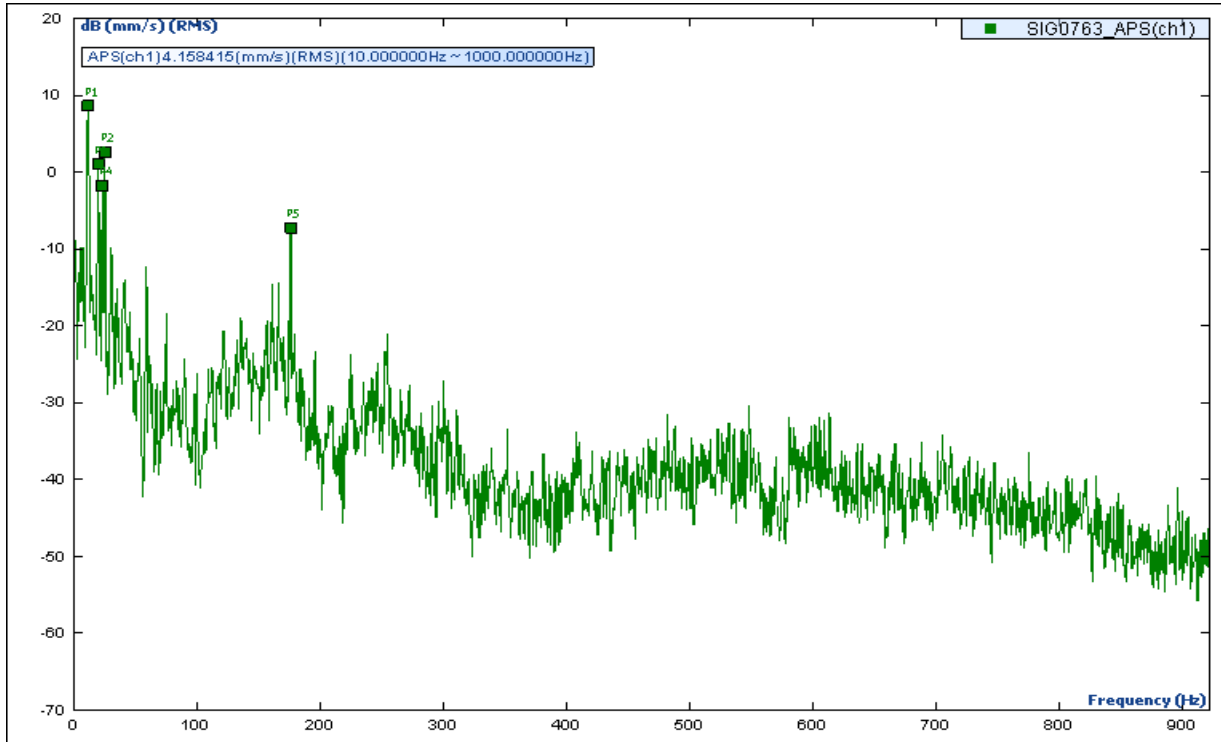
Observations :

Ventilateur à surveiller



January-25-2015 12:25:07

(Signals SIG0763_APS(ch1))

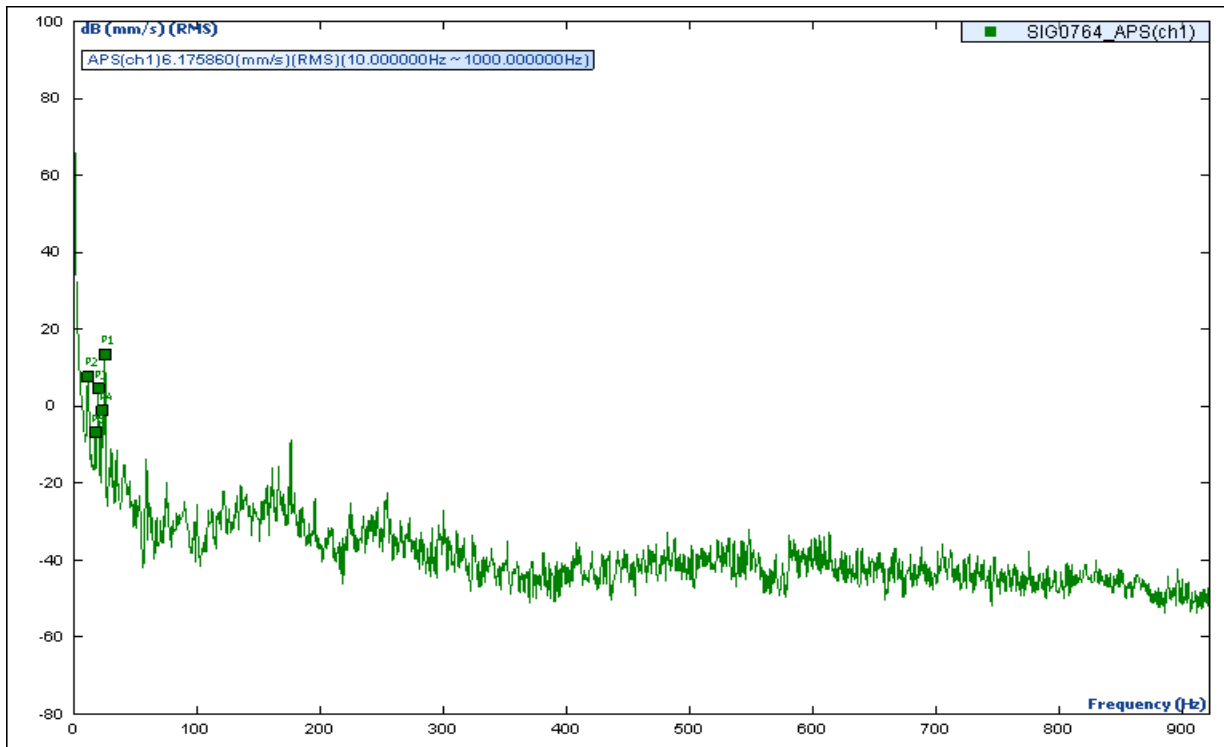


Peak Marker Values

SIG0763_APS(ch1)	X	Y
P1	11.5000 Frequency (Hz)	8.6291 dB (mm/s) (RMS)
P2	25.0000 Frequency (Hz)	2.5670 dB (mm/s) (RMS)
P3	19.5000 Frequency (Hz)	1.0221 dB (mm/s) (RMS)
P4	23.0000 Frequency (Hz)	-1.7596 dB (mm/s) (RMS)
P5	176.0000 Frequency (Hz)	-7.2332 dB (mm/s) (RMS)



(Signals SIG0764_APS(ch1))

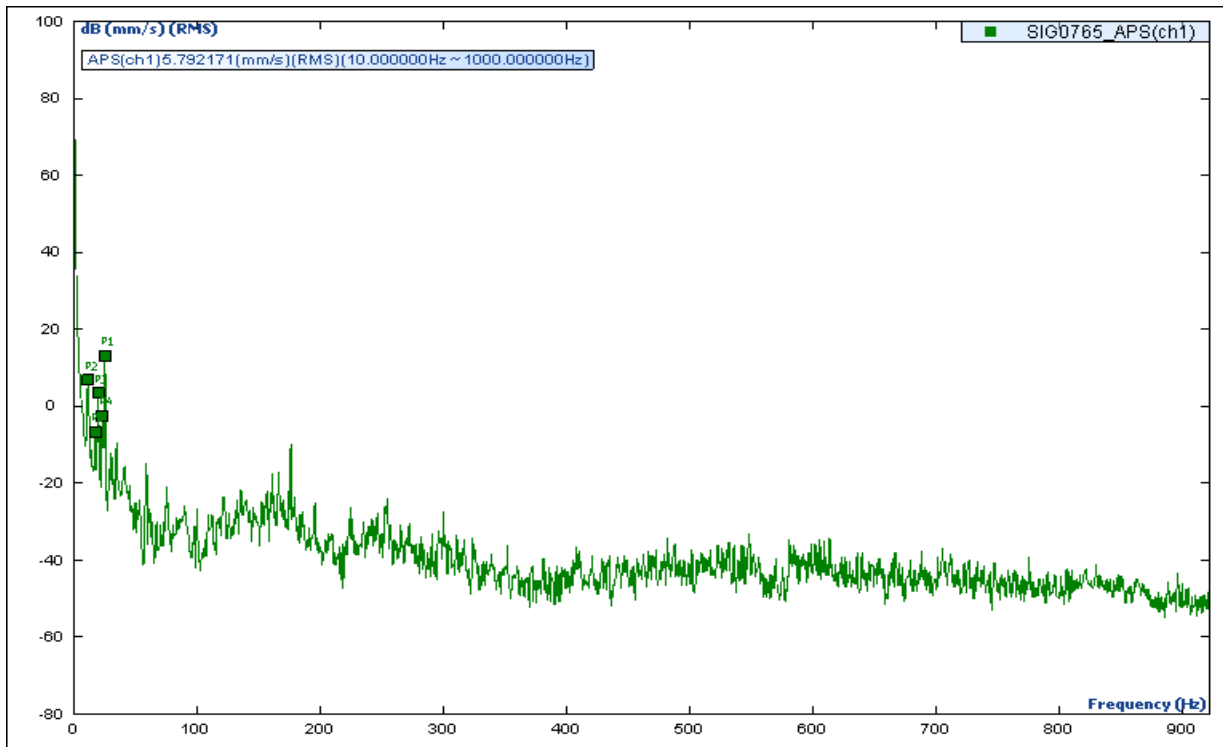


Peak Marker Values

SIG0764_APS(ch1)	X	Y
P1	25.0000 Frequency (Hz)	13.3934 dB (mm/s) (RMS)
P2	11.5000 Frequency (Hz)	7.6772 dB (mm/s) (RMS)
P3	19.5000 Frequency (Hz)	4.6084 dB (mm/s) (RMS)
P4	23.0000 Frequency (Hz)	-1.2146 dB (mm/s) (RMS)
P5	17.5000 Frequency (Hz)	-6.8301 dB (mm/s) (RMS)



(Signals SIG0765_APS(ch1))



Peak Marker Values

SIG0765_APS(ch1)	X	Y
P1	25.0000 Frequency (Hz)	13.0718 dB (mm/s) (RMS)
P2	11.5000 Frequency (Hz)	6.7979 dB (mm/s) (RMS)
P3	19.5000 Frequency (Hz)	3.4525 dB (mm/s) (RMS)
P4	23.0000 Frequency (Hz)	-2.5291 dB (mm/s) (RMS)
P5	17.5000 Frequency (Hz)	-6.6950 dB (mm/s) (RMS)



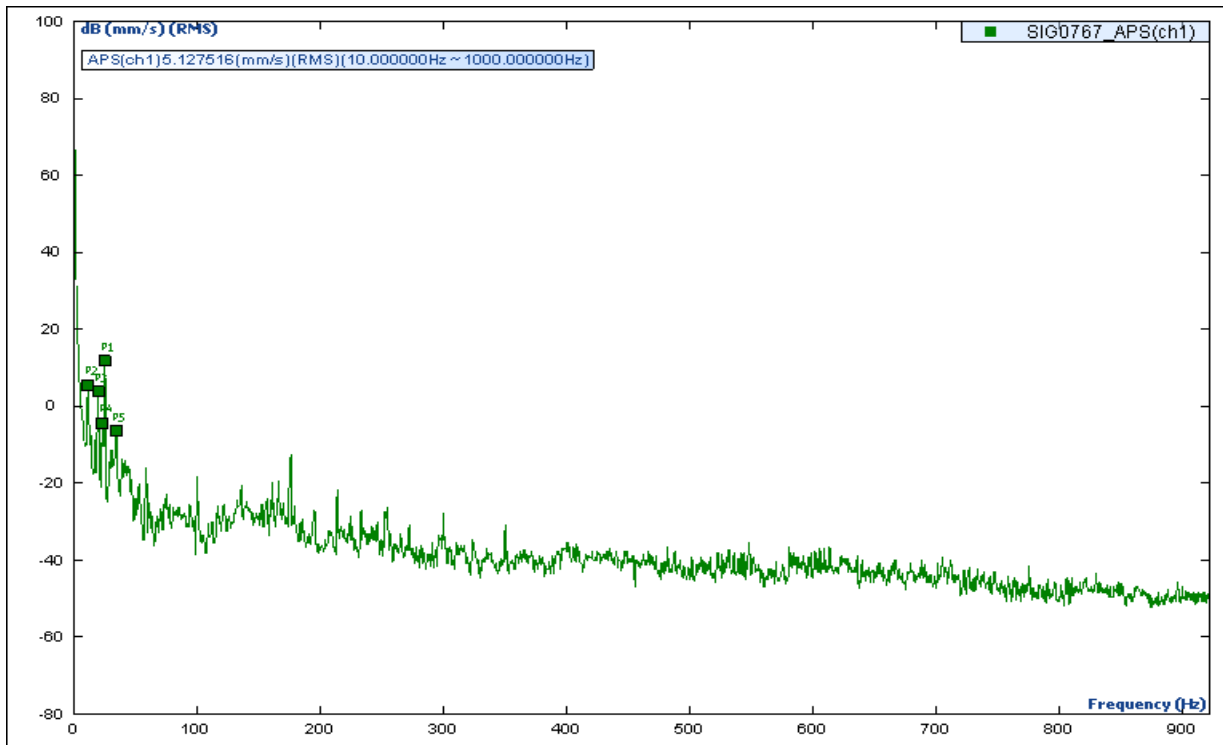
(Signals SIG0766_APS(ch1))

Peak Marker Values

SIG0766_APS(ch1)	X	Y
P1	25.0000 Frequency (Hz)	12.5737 dB (mm/s) (RMS)
P2	11.5000 Frequency (Hz)	6.6283 dB (mm/s) (RMS)
P3	19.5000 Frequency (Hz)	3.6007 dB (mm/s) (RMS)
P4	23.0000 Frequency (Hz)	-3.6434 dB (mm/s) (RMS)
P5	17.5000 Frequency (Hz)	-7.5269 dB (mm/s) (RMS)



(Signals SIG0767_APS(ch1))

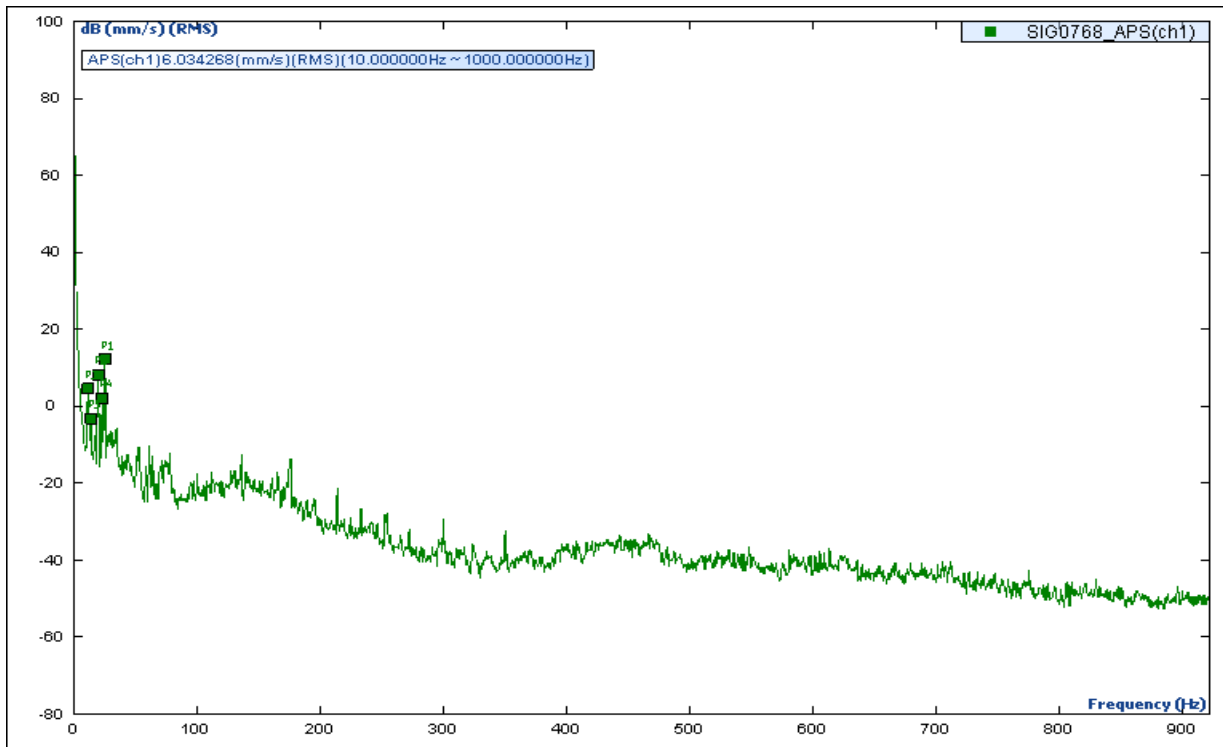


Peak Marker Values

SIG0767_APS(ch1)	X	Y
P1	25.0000 Frequency (Hz)	11.7868 dB (mm/s) (RMS)
P2	11.5000 Frequency (Hz)	5.4769 dB (mm/s) (RMS)
P3	19.5000 Frequency (Hz)	3.7782 dB (mm/s) (RMS)
P4	23.0000 Frequency (Hz)	-4.3922 dB (mm/s) (RMS)
P5	34.5000 Frequency (Hz)	-6.4370 dB (mm/s) (RMS)



(Signals SIG0768_APS(ch1))

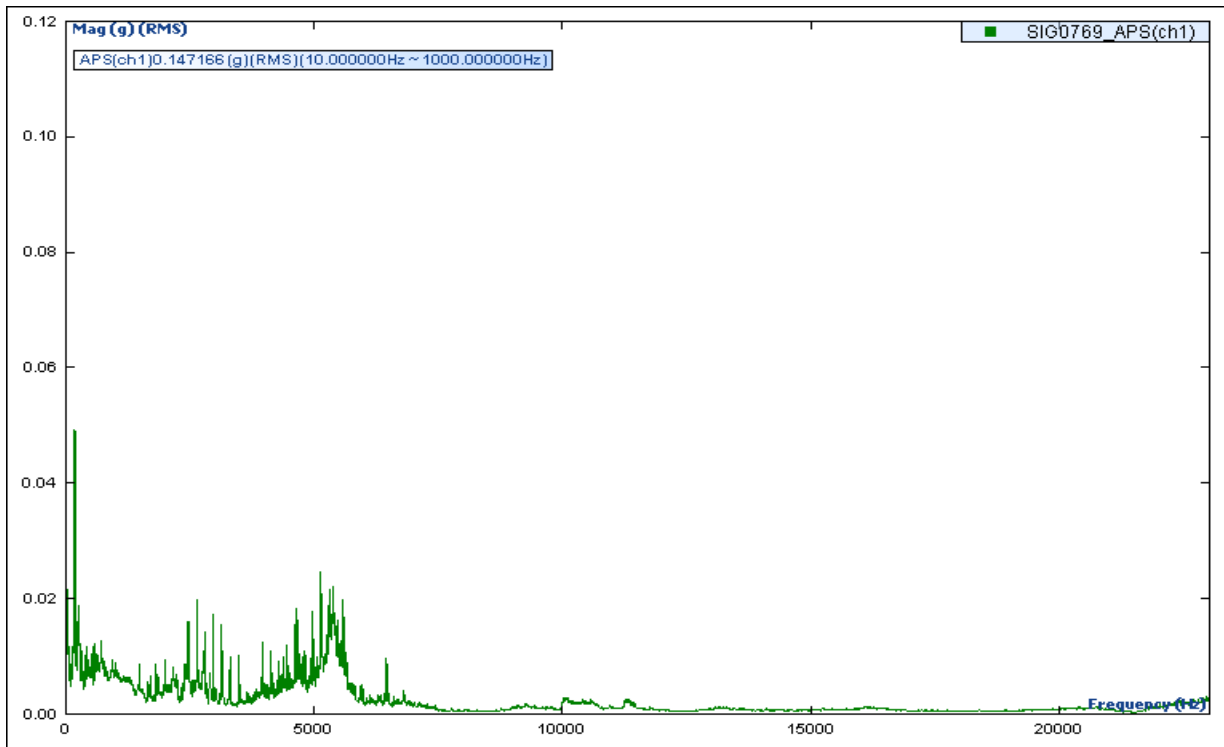


Peak Marker Values

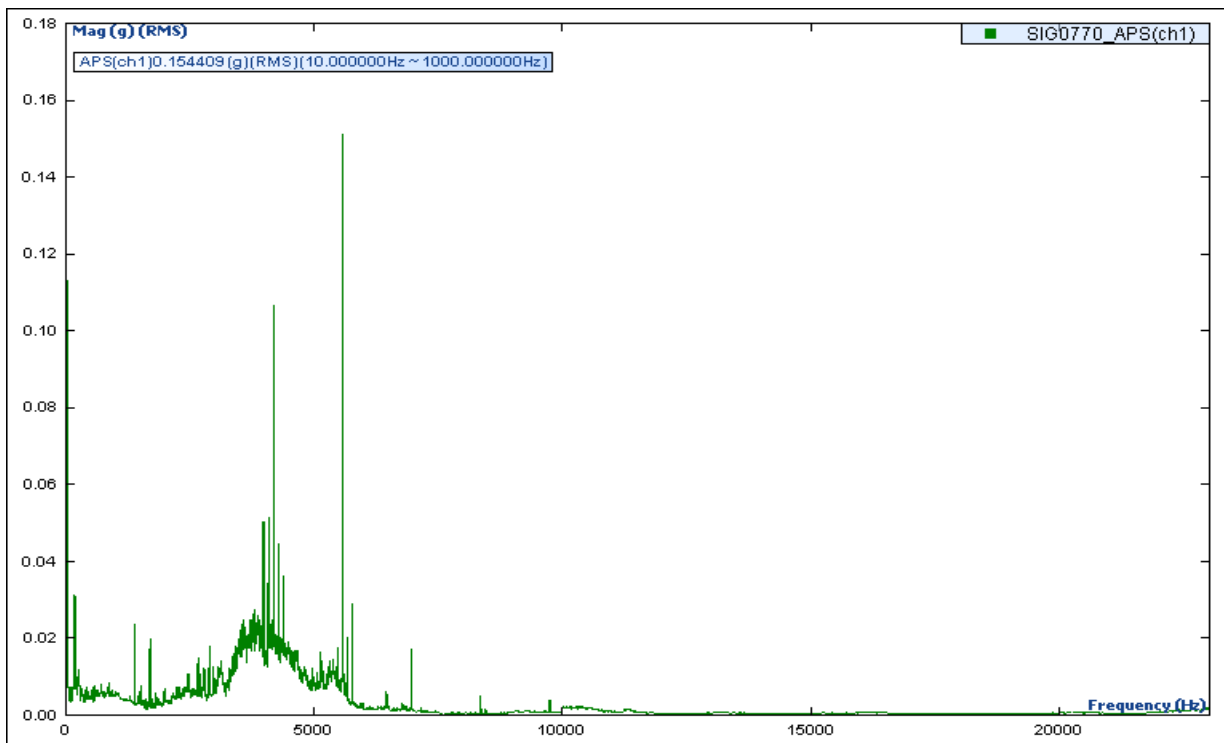
SIG0768_APS(ch1)	X	Y
P1	25.0000 Frequency (Hz)	12.1892 dB (mm/s) (RMS)
P2	19.5000 Frequency (Hz)	8.2081 dB (mm/s) (RMS)
P3	11.5000 Frequency (Hz)	4.6146 dB (mm/s) (RMS)
P4	23.0000 Frequency (Hz)	2.0494 dB (mm/s) (RMS)
P5	14.0000 Frequency (Hz)	-3.2145 dB (mm/s) (RMS)



(Signals SIG0769_APS(ch1))

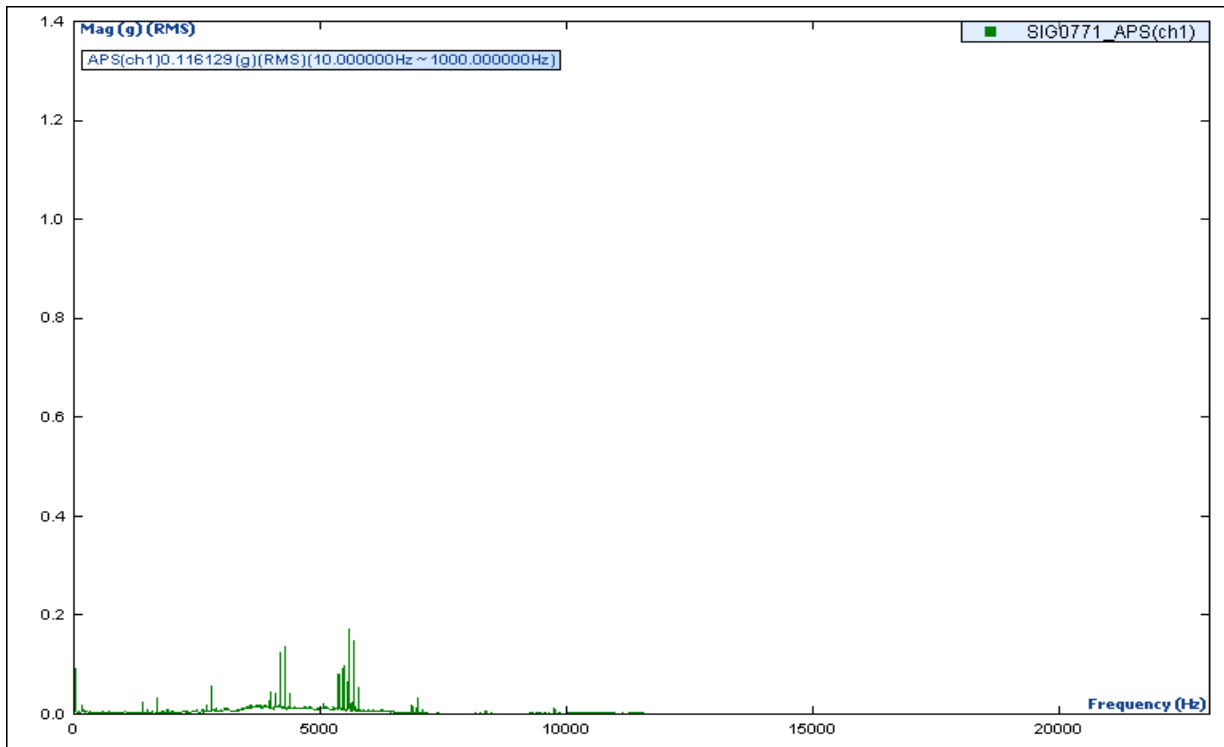


(Signals SIG0770_APS(ch1))

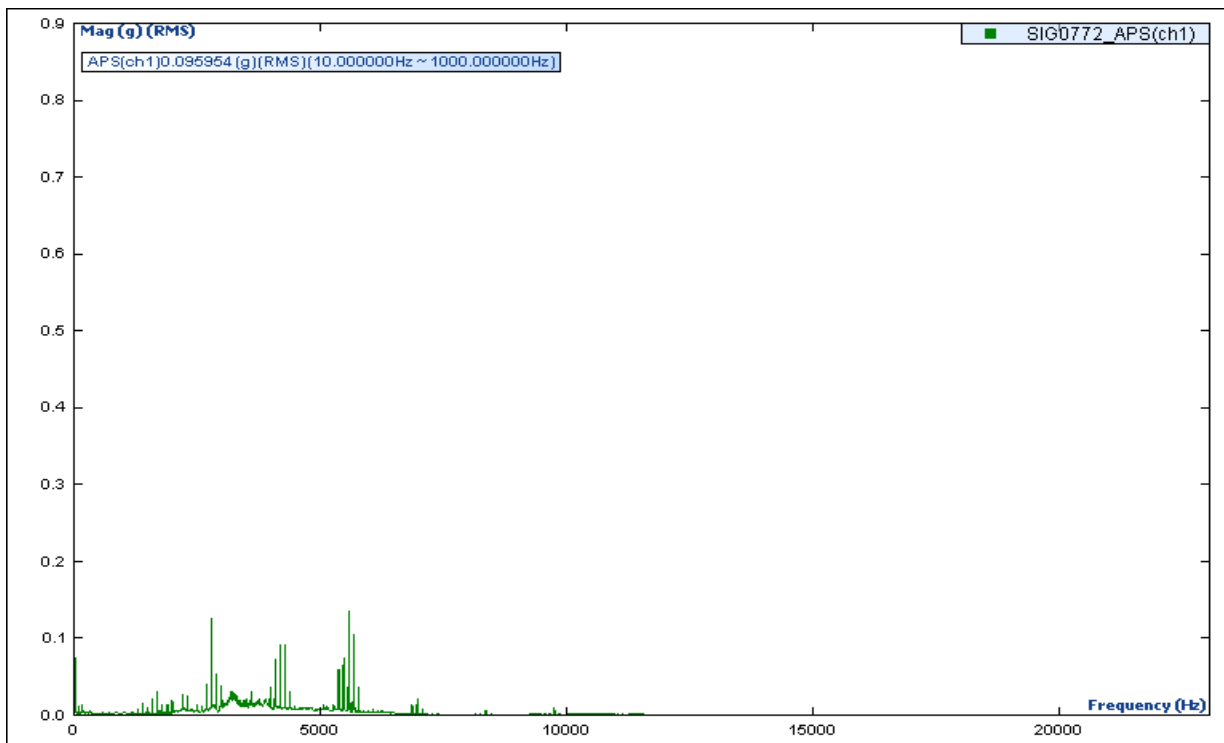




(Signals SIG0771_APS(ch1))

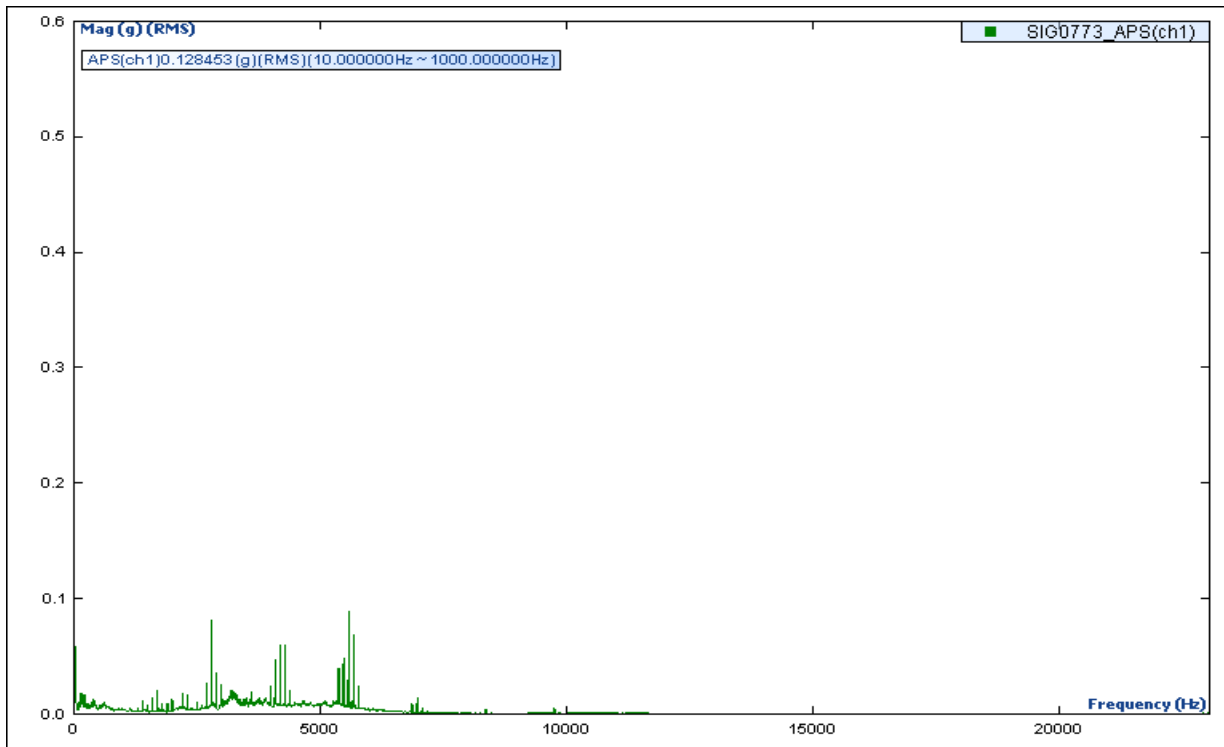


(Signals SIG0772_APS(ch1))

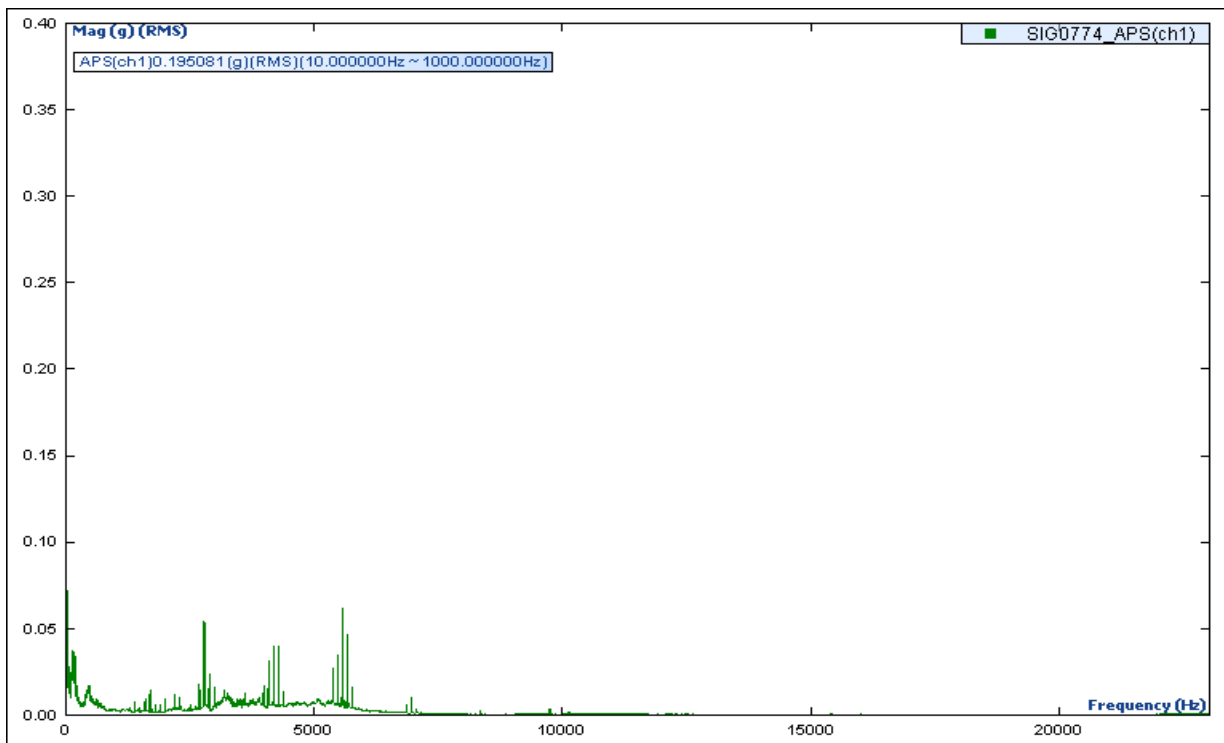




(Signals SIG0773_APS(ch1))



(Signals SIG0774_APS(ch1))





FICHE 2

V2

Observations et recommandations

	Moteur	Ventilateur
Marque	LEROY SOMMER	
Vitesse/fréquence de rotation	1480	
Puissance	200	
Fondation	SOUPLE	

Pour que l'analyse soit la plus précise possible il nous faut **toutes** les caractéristiques des roulements se trouvant dans vos équipements

Machines	N° du point	Type de mesure	Mesure globale			Mesure spectrale	
			N° de courbe	Niveau Global (mm/s)	Urgence	N° de courbe	Observation / Recommandation
Moteur (arrière)	1	Radial	784	6.64	NON SATISFAISANT	778	
		Axial	NC				
Moteur (avant)	2	Radial	783	7.34	NON SATISFAISANT	777	
		Axial	782	8.34	NON SATISFAISANT	776	
Palier (côté moteur)	3	Radial	781	1.79	NON SATISFAISANT	775	
		Axial	NC				
Palier (côté turbine)	4	Radial	785	5.99	NON SATISFAISANT	779	
		Axial	786	7.86	NON SATISFAISANT	780	

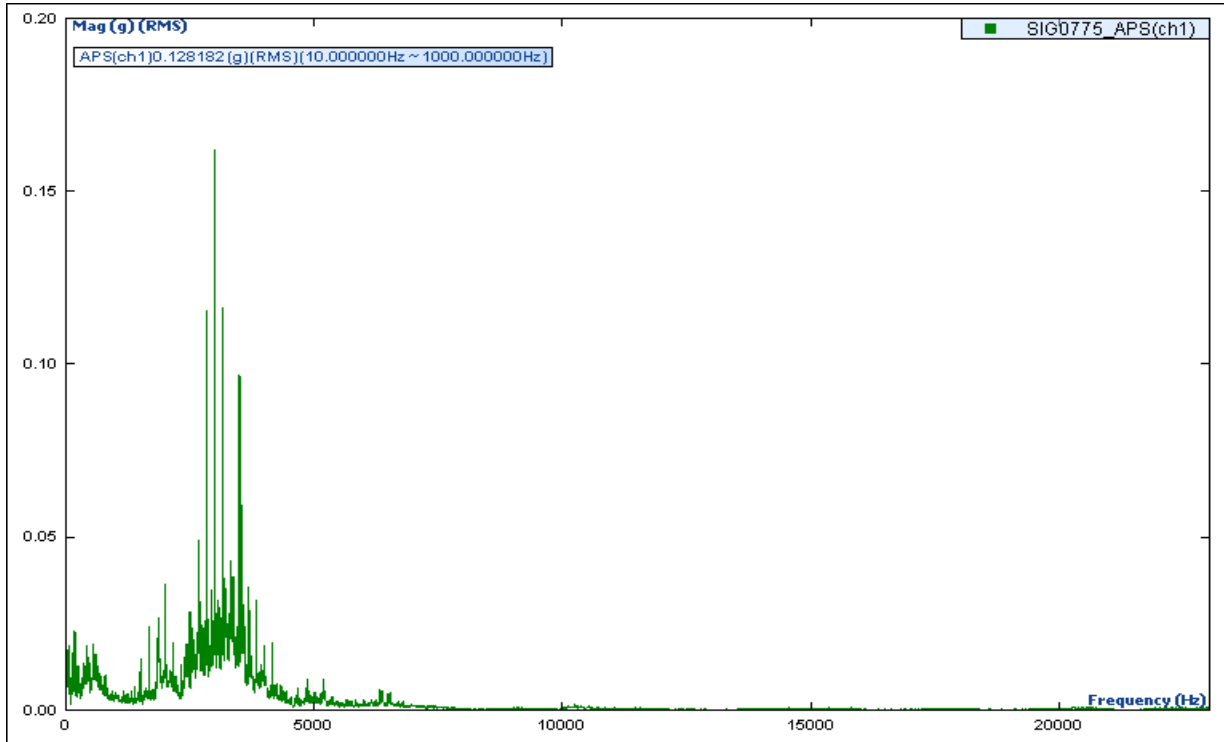
Observations :

Ventilateur à surveiller

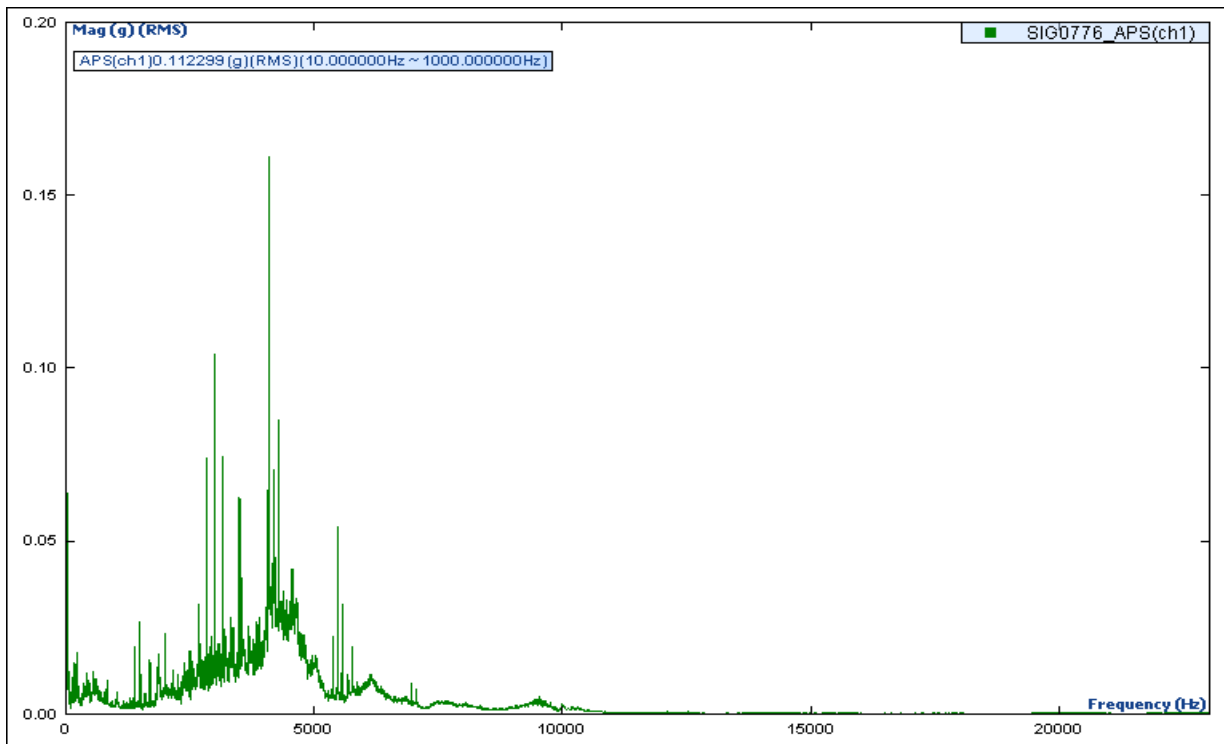


January-25-2015 12:39:18

(Signals SIG0775_APS(ch1))

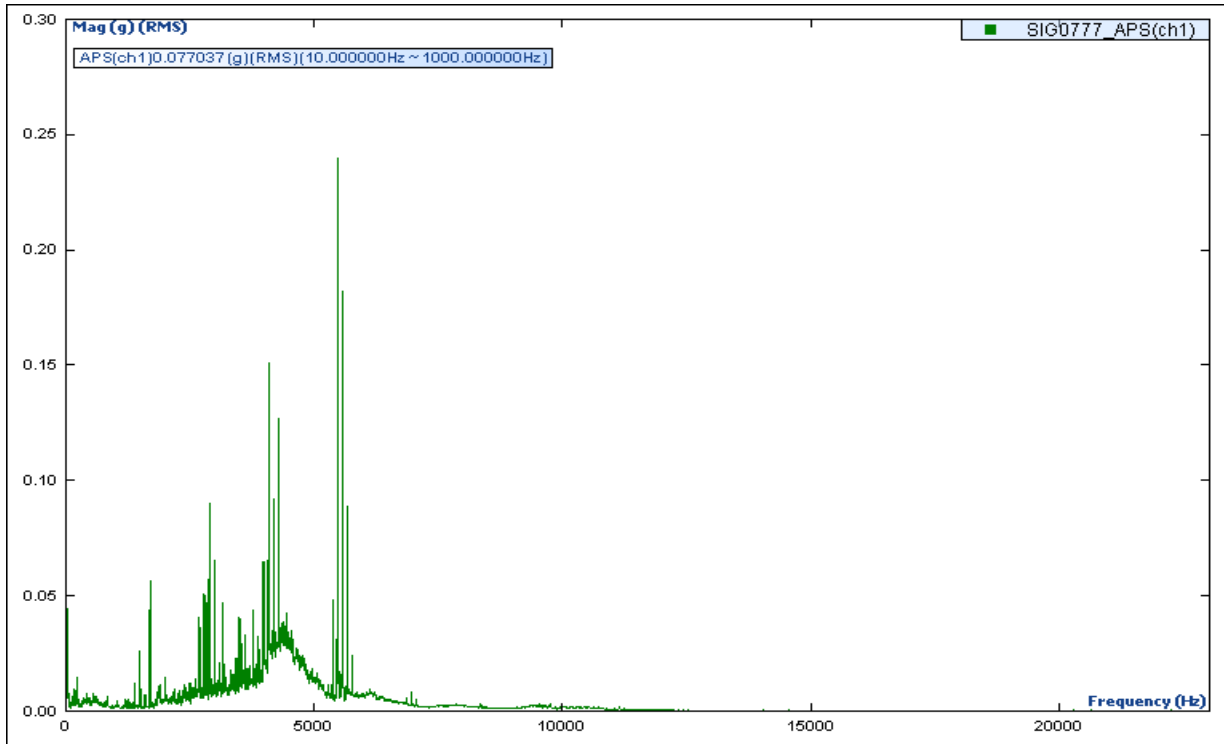


(Signals SIG0776_APS(ch1))

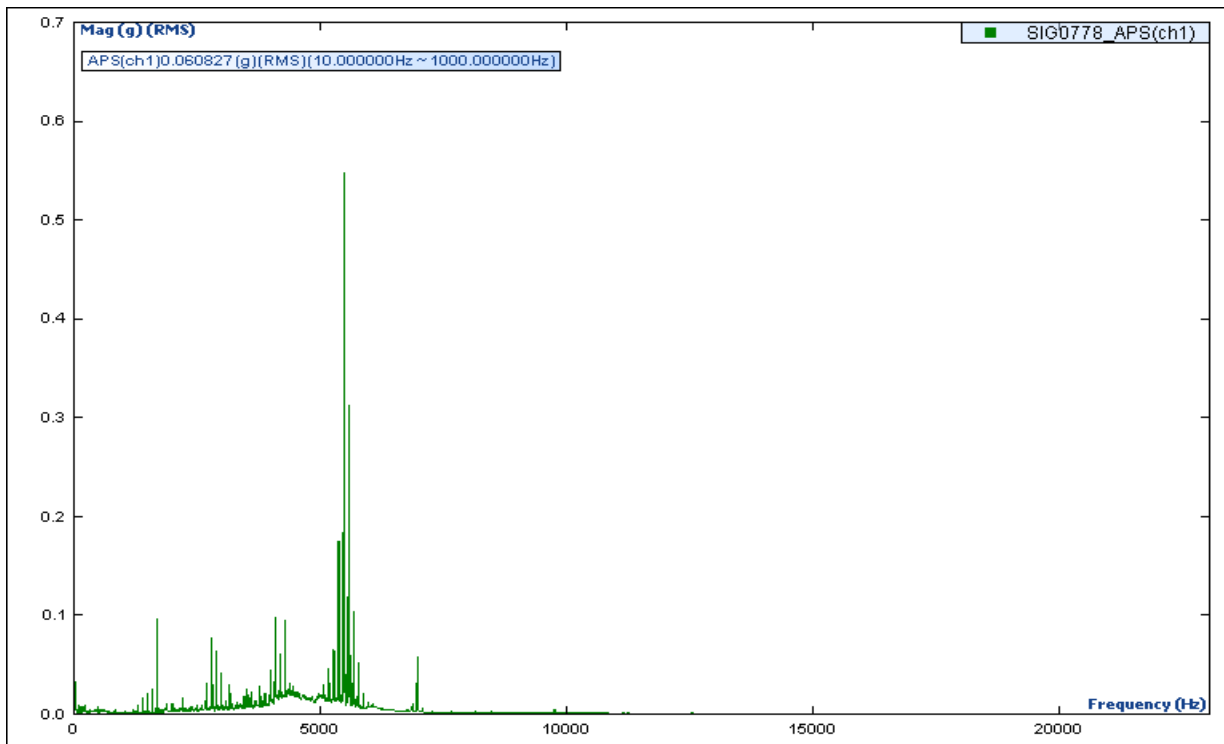




(Signals SIG0777_APS(ch1))

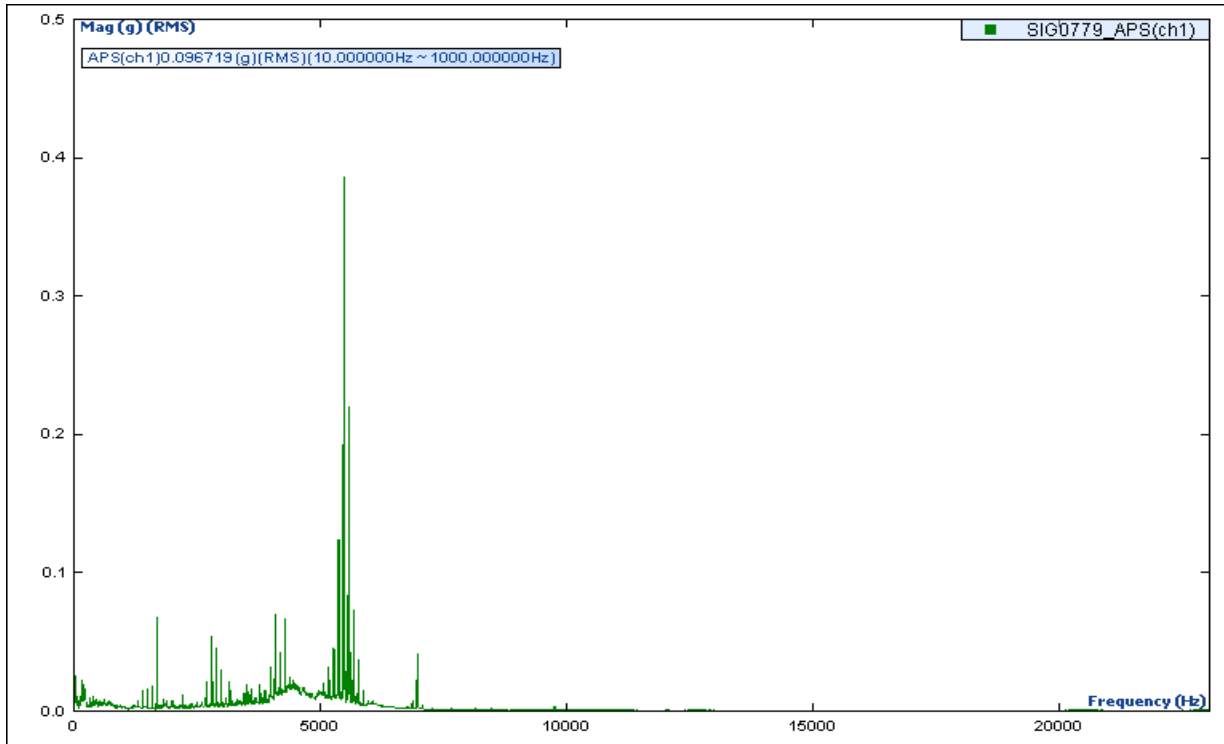


(Signals SIG0778_APS(ch1))

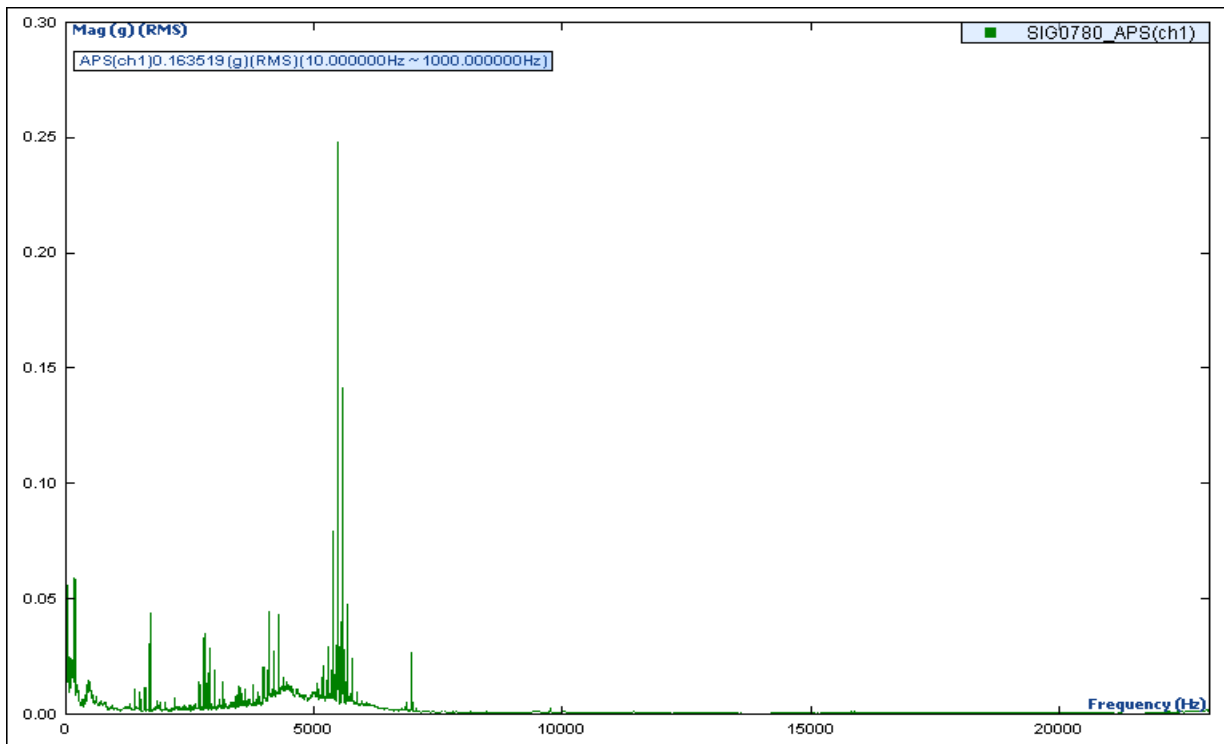




(Signals SIG0779_APS(ch1))

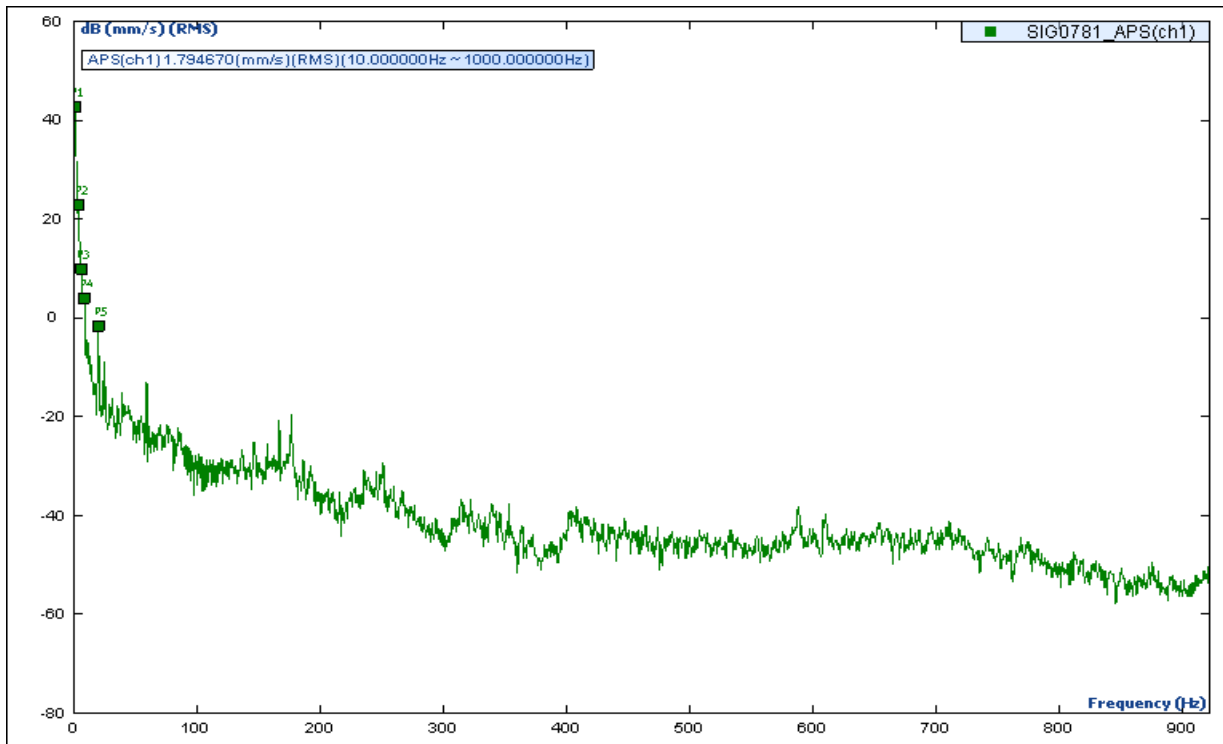


(Signals SIG0780_APS(ch1))





(Signals SIG0781_APS(ch1))

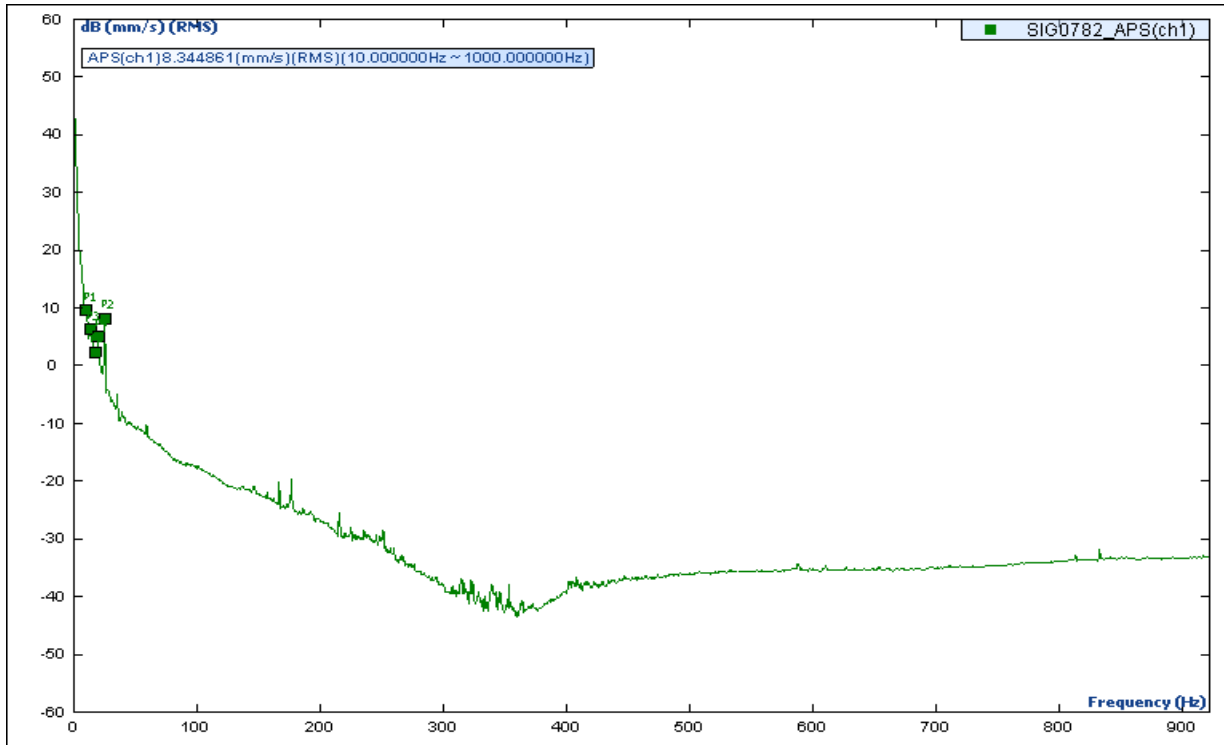


Peak Marker Values

SIG0781_APS(ch1)	X	Y
P1	.5000 Frequency (Hz)	42.7978 dB (mm/s) (RMS)
P2	3.5000 Frequency (Hz)	22.9681 dB (mm/s) (RMS)
P3	6.0000 Frequency (Hz)	9.9718 dB (mm/s) (RMS)
P4	8.0000 Frequency (Hz)	3.9794 dB (mm/s) (RMS)
P5	19.5000 Frequency (Hz)	-1.6119 dB (mm/s) (RMS)



(Signals SIG0782_APS(ch1))

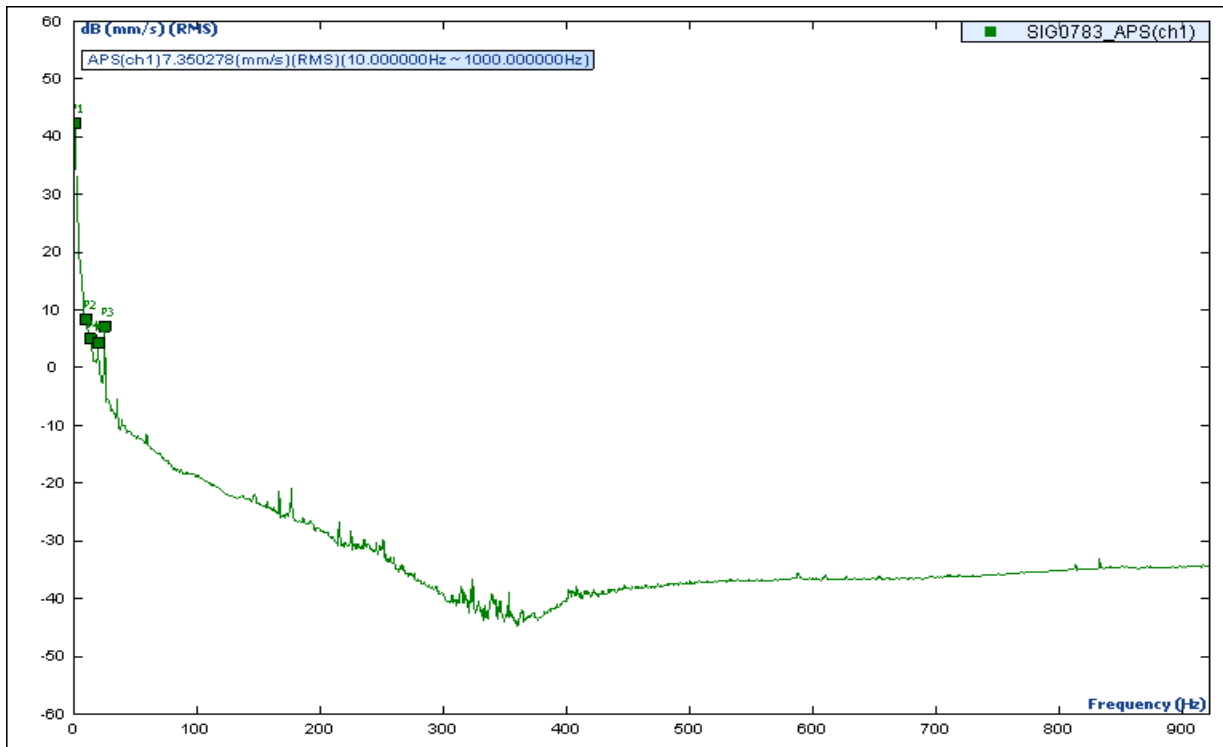


Peak Marker Values

SIG0782_APS(ch1)	X	Y
P1	10.0000 Frequency (Hz)	9.5929 dB (mm/s) (RMS)
P2	25.0000 Frequency (Hz)	8.1676 dB (mm/s) (RMS)
P3	13.0000 Frequency (Hz)	6.2340 dB (mm/s) (RMS)
P4	19.5000 Frequency (Hz)	5.0150 dB (mm/s) (RMS)
P5	17.0000 Frequency (Hz)	2.3746 dB (mm/s) (RMS)



(Signals SIG0783_APS(ch1))

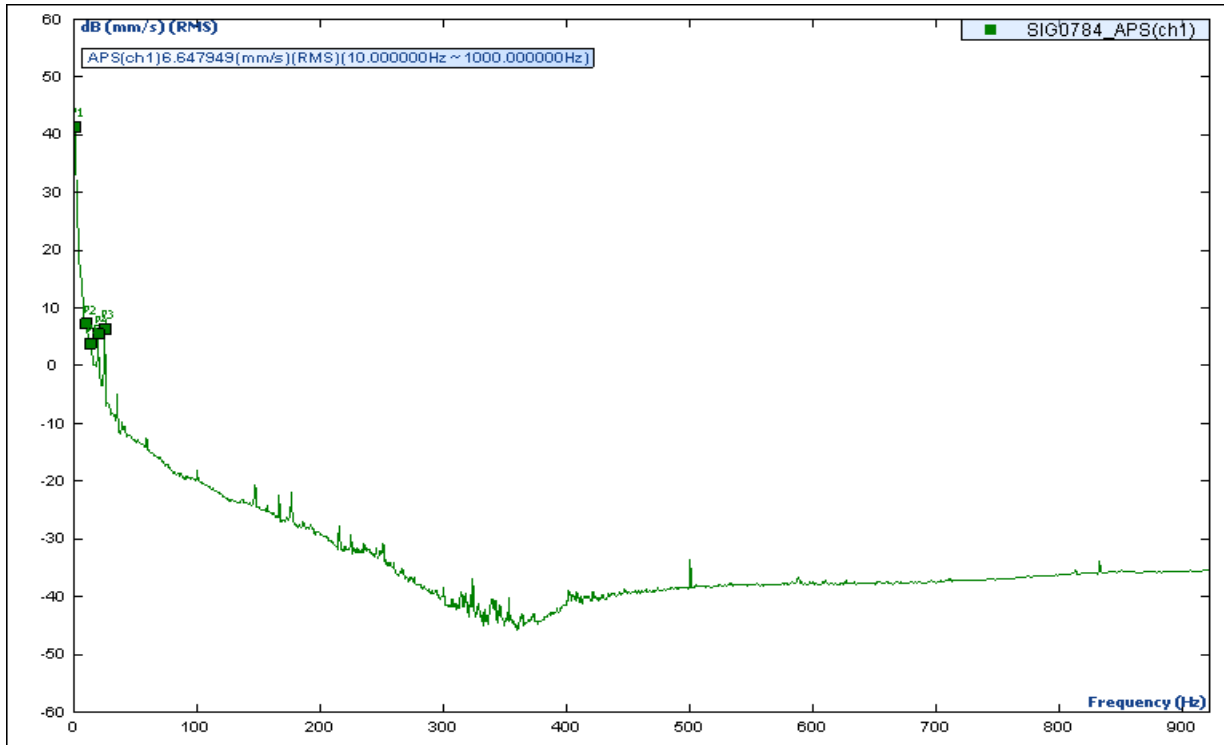


Peak Marker Values

SIG0783_APS(ch1)	X	Y
P1	.5000 Frequency (Hz)	42.4282 dB (mm/s) (RMS)
P2	10.0000 Frequency (Hz)	8.3571 dB (mm/s) (RMS)
P3	25.0000 Frequency (Hz)	7.2125 dB (mm/s) (RMS)
P4	13.0000 Frequency (Hz)	4.9982 dB (mm/s) (RMS)
P5	19.5000 Frequency (Hz)	4.3169 dB (mm/s) (RMS)



(Signals SIG0784_APS(ch1))

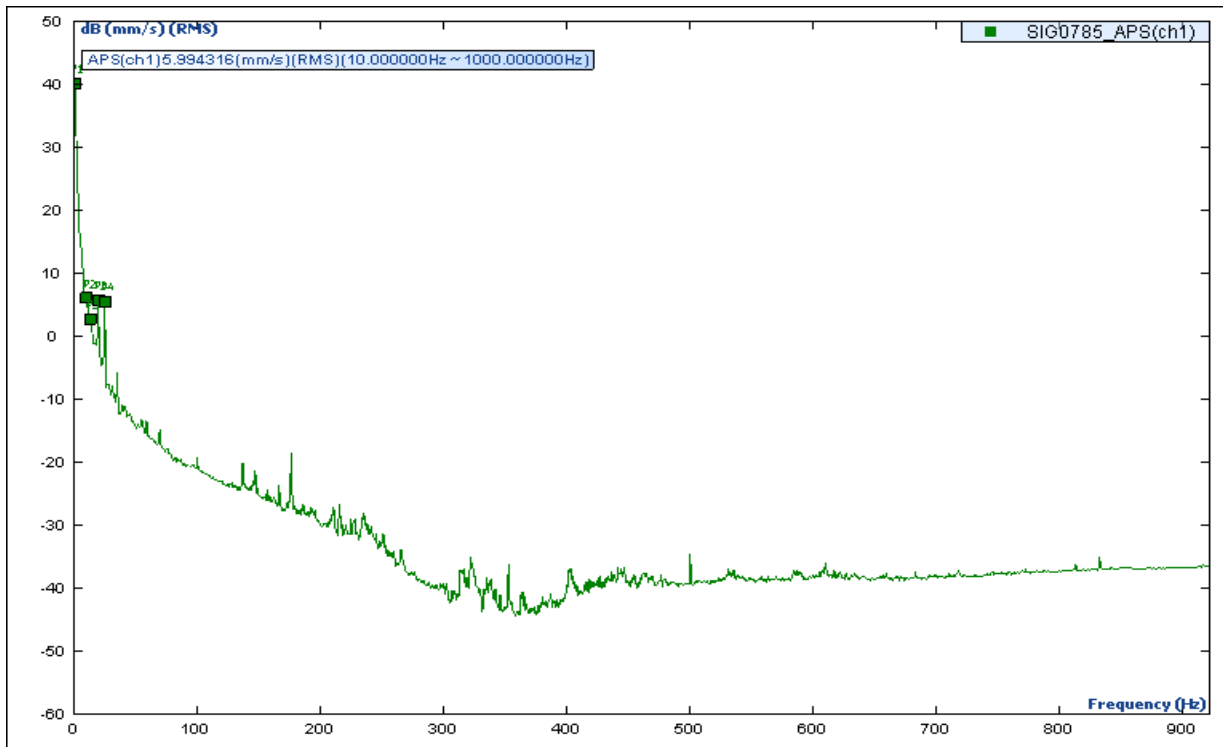


Peak Marker Values

SIG0784_APS(ch1)	X	Y
P1	.5000 Frequency (Hz)	41.3253 dB (mm/s) (RMS)
P2	10.0000 Frequency (Hz)	7.2623 dB (mm/s) (RMS)
P3	25.0000 Frequency (Hz)	6.3935 dB (mm/s) (RMS)
P4	19.5000 Frequency (Hz)	5.4643 dB (mm/s) (RMS)
P5	13.0000 Frequency (Hz)	3.9126 dB (mm/s) (RMS)



(Signals SIG0785_APS(ch1))

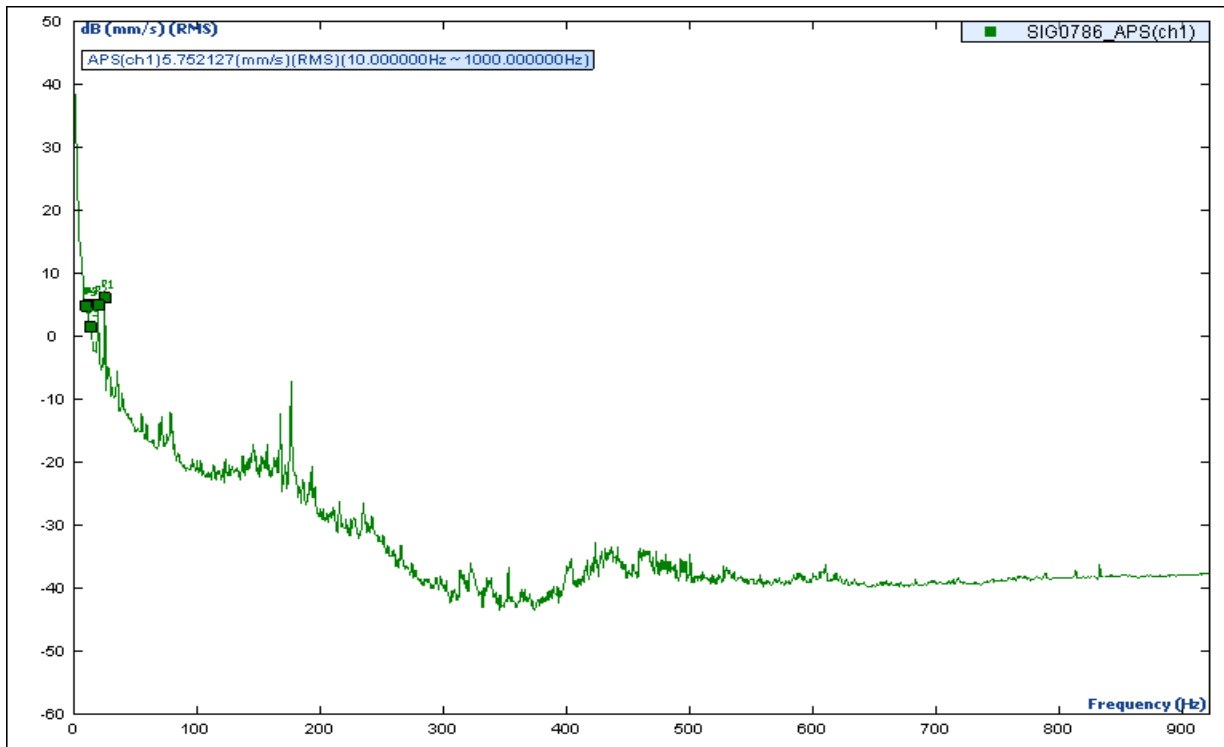


Peak Marker Values

SIG0785_APS(ch1)		
	X	Y
P1	.5000 Frequency (Hz)	40.1090 dB (mm/s) (RMS)
P2	10.0000 Frequency (Hz)	6.0541 dB (mm/s) (RMS)
P3	19.5000 Frequency (Hz)	5.7255 dB (mm/s) (RMS)
P4	25.0000 Frequency (Hz)	5.5211 dB (mm/s) (RMS)
P5	13.0000 Frequency (Hz)	2.6945 dB (mm/s) (RMS)



(Signals SIG0786_APS(ch1))



Peak Marker Values

SIG0786_APS(ch1)	X	Y
P1	25.0000 Frequency (Hz)	6.0633 dB (mm/s) (RMS)
P2	19.5000 Frequency (Hz)	4.9868 dB (mm/s) (RMS)
P3	11.5000 Frequency (Hz)	4.9685 dB (mm/s) (RMS)
P4	10.0000 Frequency (Hz)	4.8318 dB (mm/s) (RMS)
P5	13.0000 Frequency (Hz)	1.4979 dB (mm/s) (RMS)



FICHE 3

V3

Observations et recommandations

	Moteur	Ventilateur
Marque	LEROY SOMMER	
Vitesse/fréquence de rotation	1480	
Puissance	200	
Fondation	SOUPLE	

Pour que l'analyse soit la plus précise possible il nous faut **toutes** les caractéristiques des roulements se trouvant dans vos équipements

Machines	N° du point	Type de mesure	Mesure globale			Mesure spectrale	
			N° de courbe	Niveau Global (mm/s)	Urgence	N° de courbe	Observation / Recommandation
Moteur (arrière)	1	Radial	789	22	NON ADMISSIBLE	796	
		Axial	NC				
Moteur (avant)	2	Radial	790	18	NON ADMISSIBLE	795	
		Axial	791	15	NON ADMISSIBLE	794	
Palier (côté moteur)	3	Radial	792	13	NON ADMISSIBLE	793	
		Axial	NC				
Palier (côté turbine)	4	Radial	787	3.01	NORMAL	798	
		Axial	788	3.76	NORMAL	797	

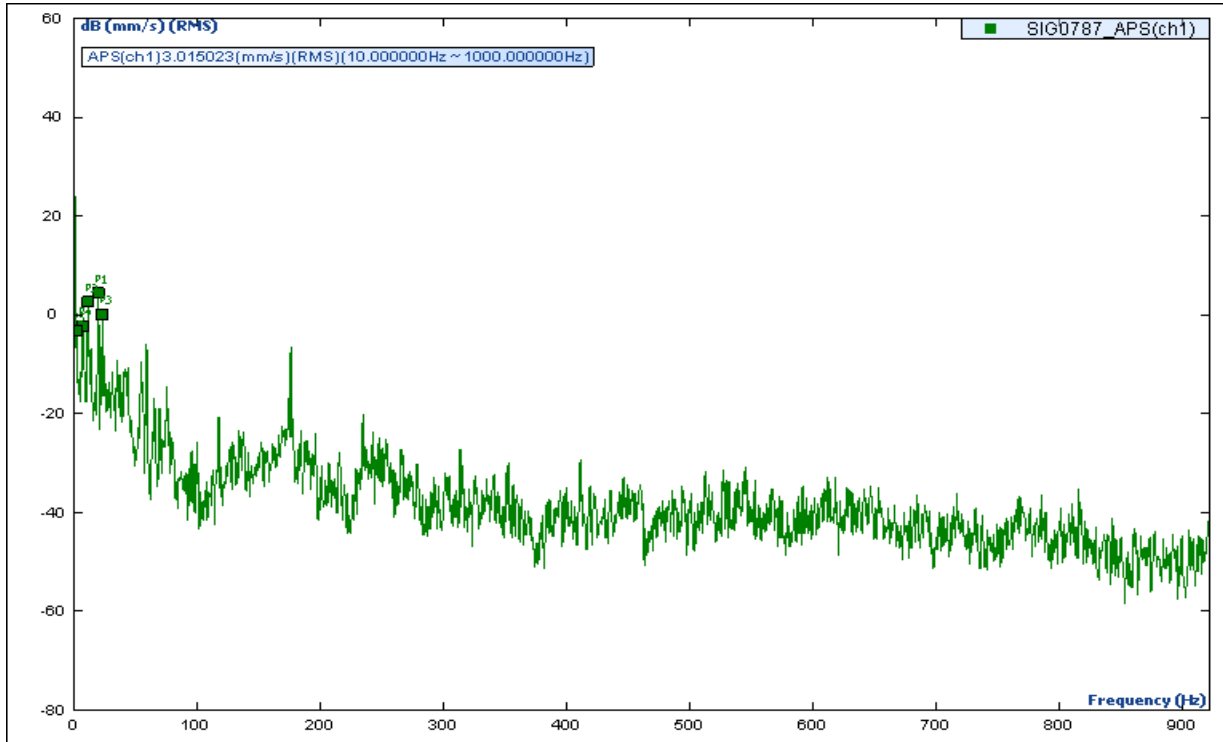
Observations :

Grosse vibration au niveau du moteur (roulement moteur HS), qui a aussi détérioré le roulement côté transmission sur le ventilateur.



January-25-2015 12:56:09

(Signals SIG0787_APS(ch1))

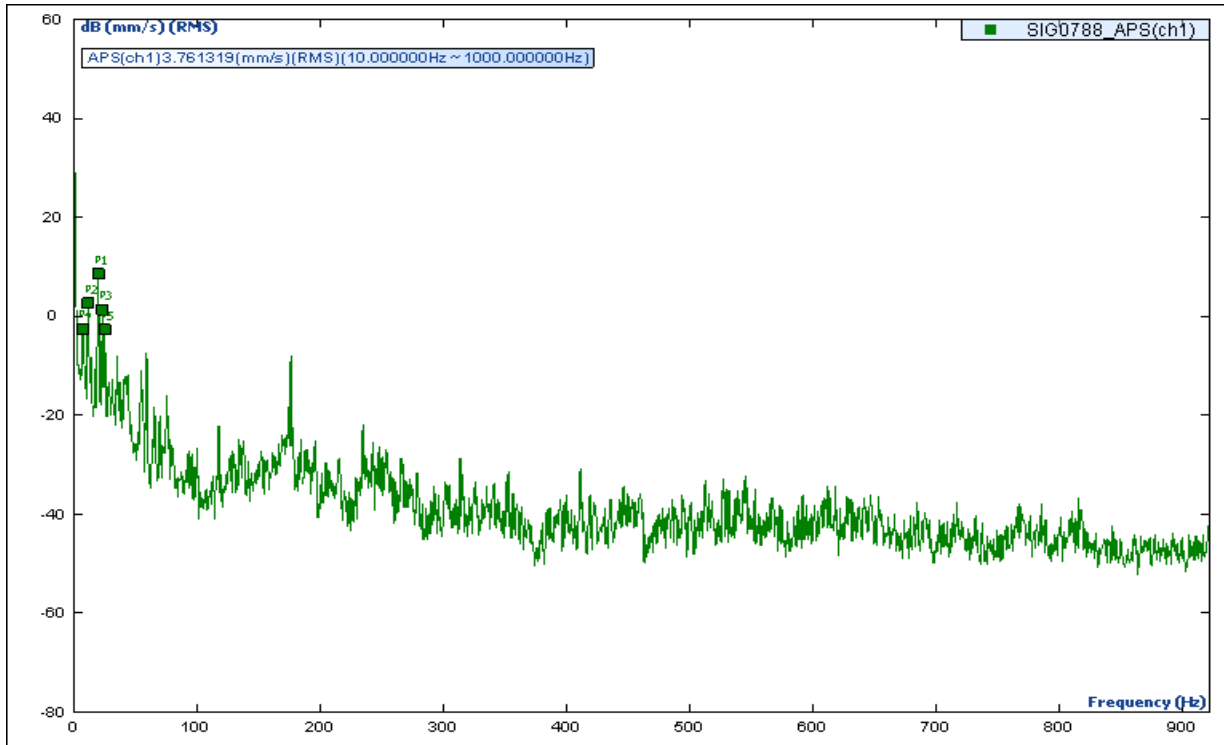


Peak Marker Values

SIG0787_APS(ch1)	X	Y
P1	19.5000 Frequency (Hz)	4.3964 dB (mm/s) (RMS)
P2	11.5000 Frequency (Hz)	2.6118 dB (mm/s) (RMS)
P3	23.0000 Frequency (Hz)	.0923 dB (mm/s) (RMS)
P4	7.0000 Frequency (Hz)	-2.3173 dB (mm/s) (RMS)
P5	2.0000 Frequency (Hz)	-3.3353 dB (mm/s) (RMS)



(Signals SIG0788_APS(ch1))

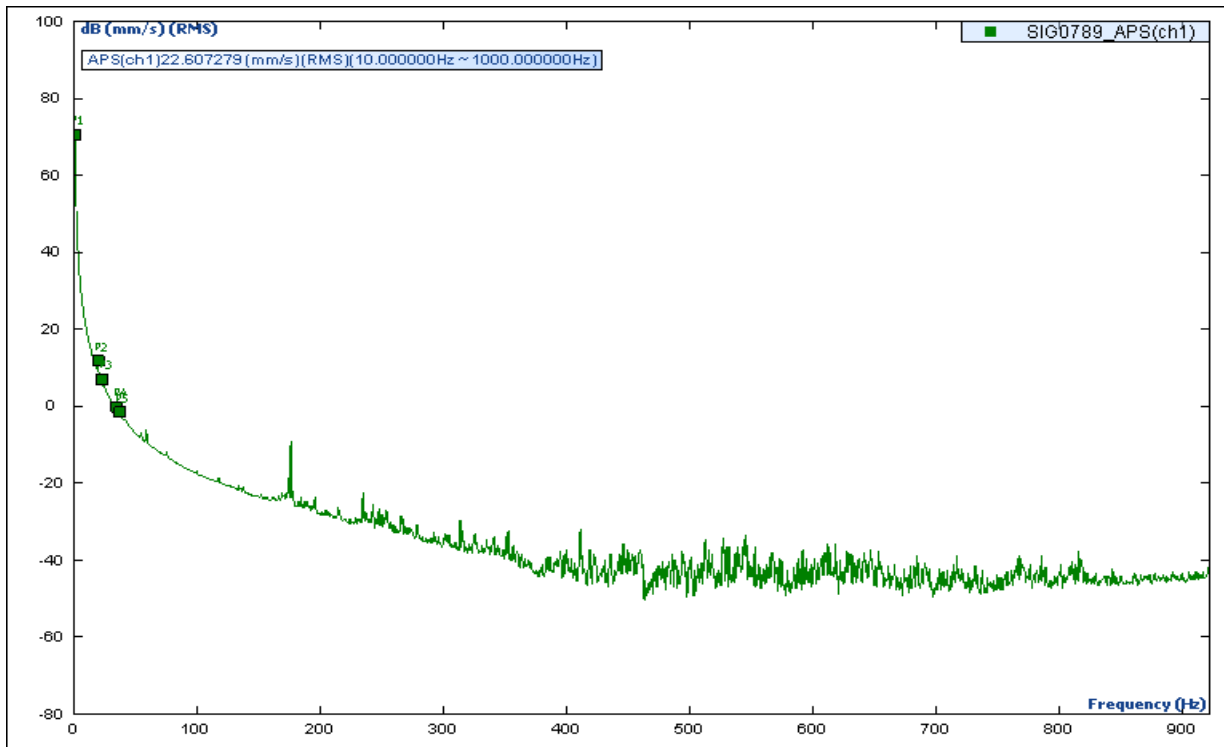


Peak Marker Values

SIG0788_APS(ch1)	X	Y
P1	19.5000 Frequency (Hz)	8.5696 dB (mm/s) (RMS)
P2	11.5000 Frequency (Hz)	2.6110 dB (mm/s) (RMS)
P3	23.0000 Frequency (Hz)	1.3378 dB (mm/s) (RMS)
P4	7.0000 Frequency (Hz)	-2.6030 dB (mm/s) (RMS)
P5	25.0000 Frequency (Hz)	-2.6830 dB (mm/s) (RMS)



(Signals SIG0789_APS(ch1))

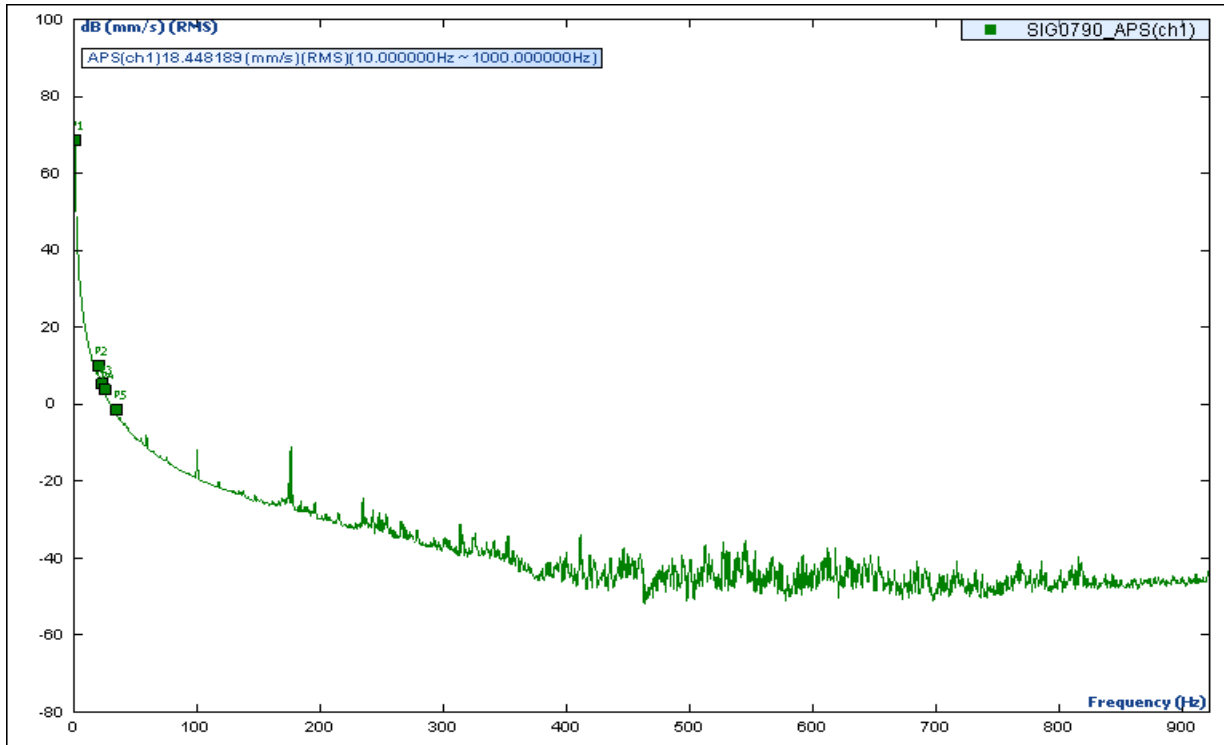


Peak Marker Values

SIG0789_APS(ch1)	X	Y
P1	.5000 Frequency (Hz)	70.5267 dB (mm/s) (RMS)
P2	19.5000 Frequency (Hz)	11.8251 dB (mm/s) (RMS)
P3	23.0000 Frequency (Hz)	6.9455 dB (mm/s) (RMS)
P4	35.0000 Frequency (Hz)	-.1124 dB (mm/s) (RMS)
P5	37.0000 Frequency (Hz)	-1.5768 dB (mm/s) (RMS)



(Signals SIG0790_APS(ch1))

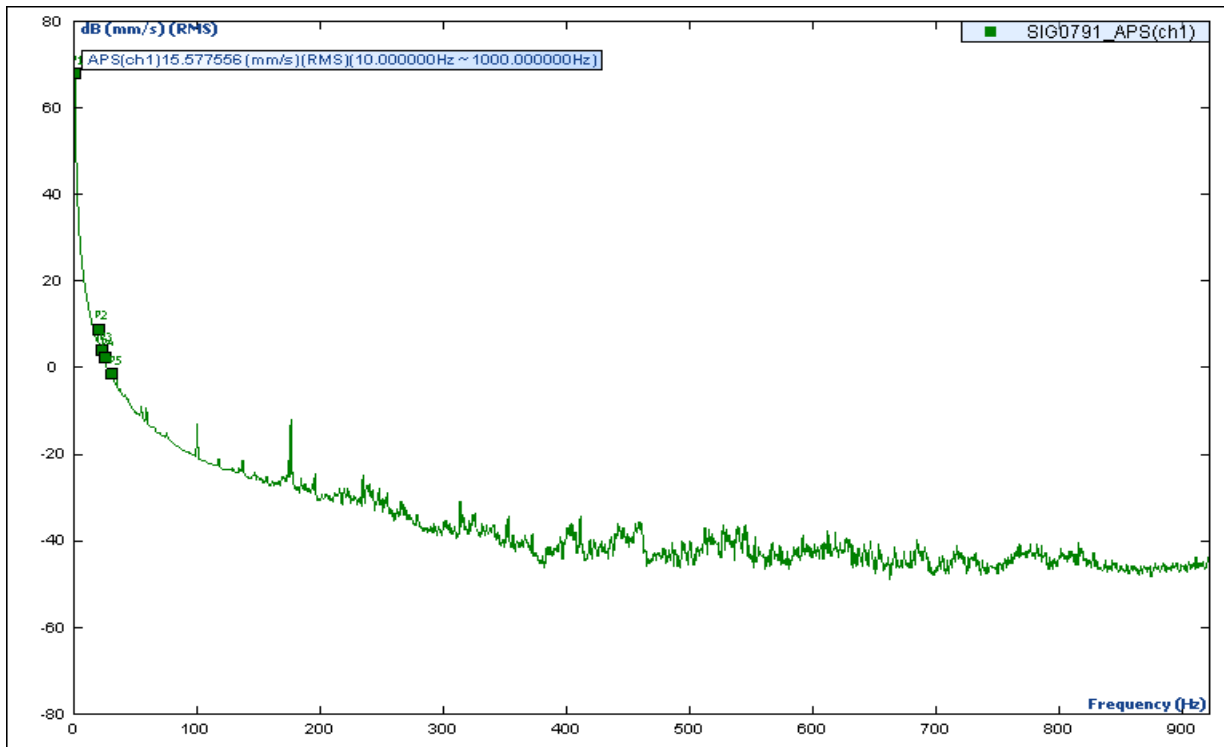


Peak Marker Values

SIG0790_APS(ch1)	X	Y
P1	.5000 Frequency (Hz)	68.7346 dB (mm/s) (RMS)
P2	19.5000 Frequency (Hz)	10.1603 dB (mm/s) (RMS)
P3	23.0000 Frequency (Hz)	5.3489 dB (mm/s) (RMS)
P4	25.0000 Frequency (Hz)	3.7521 dB (mm/s) (RMS)
P5	35.0000 Frequency (Hz)	-1.4478 dB (mm/s) (RMS)



(Signals SIG0791_APS(ch1))

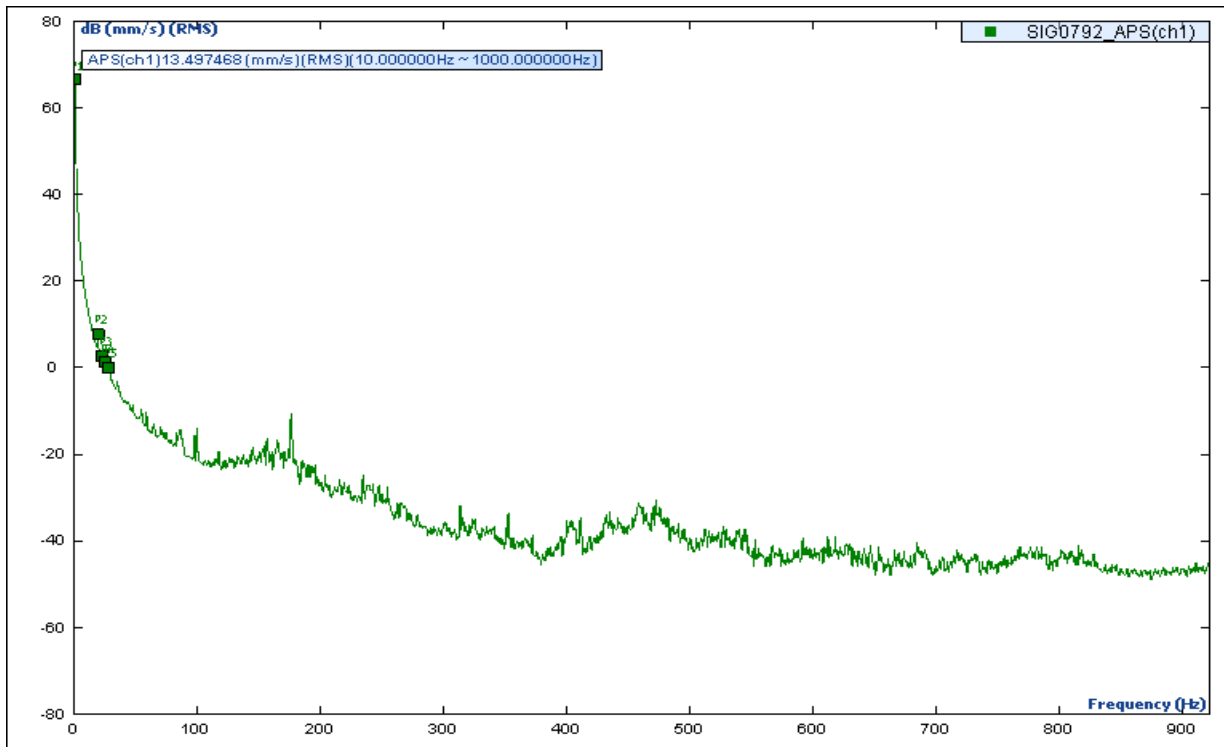


Peak Marker Values

SIG0791_APS(ch1)	X	Y
P1	.5000 Frequency (Hz)	67.9270 dB (mm/s) (RMS)
P2	19.5000 Frequency (Hz)	8.9615 dB (mm/s) (RMS)
P3	23.0000 Frequency (Hz)	4.0059 dB (mm/s) (RMS)
P4	25.0000 Frequency (Hz)	2.4208 dB (mm/s) (RMS)
P5	31.0000 Frequency (Hz)	-1.4628 dB (mm/s) (RMS)



(Signals SIG0792_APS(ch1))

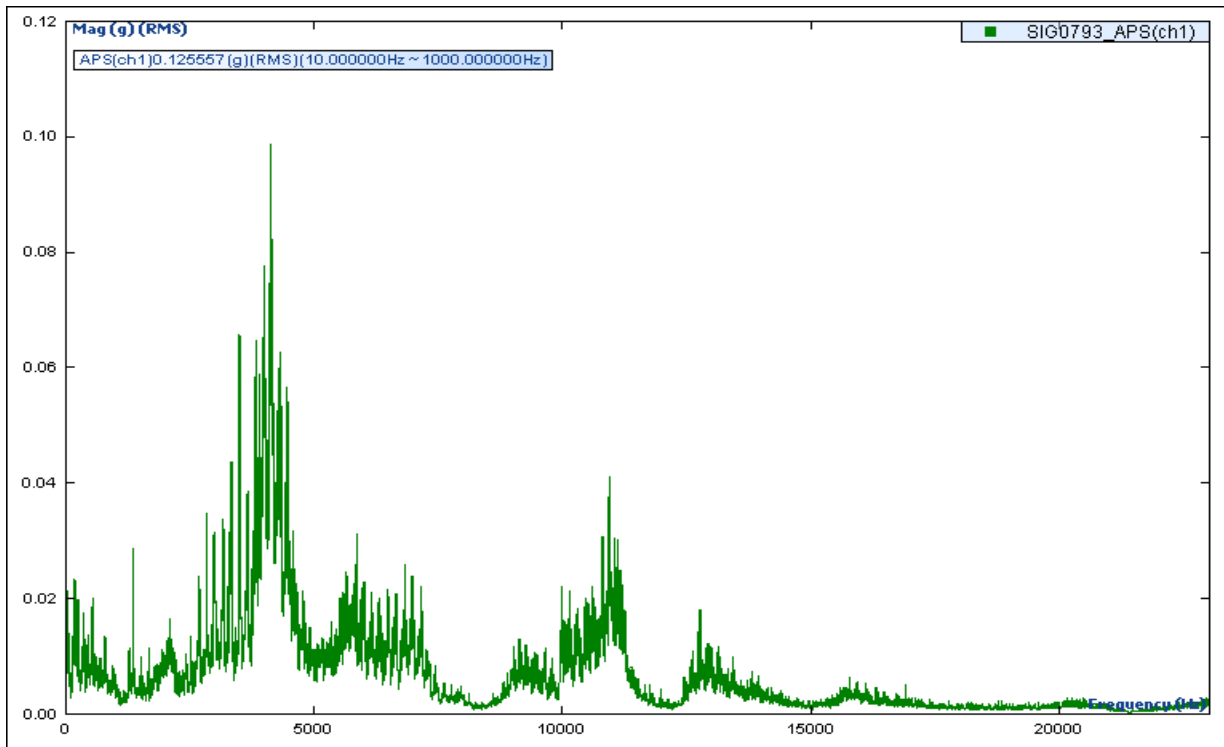


Peak Marker Values

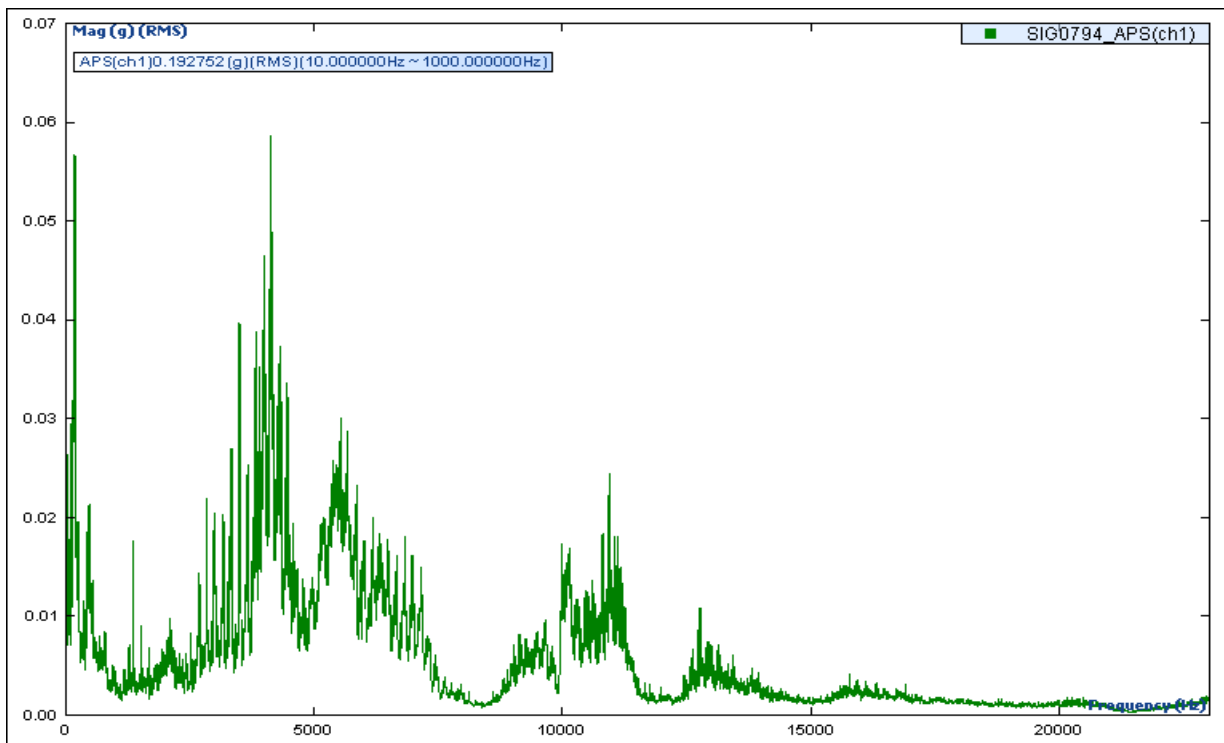
SIG0792_APS(ch1)		
	X	Y
P1	.5000 Frequency (Hz)	66.5485 dB (mm/s) (RMS)
P2	19.5000 Frequency (Hz)	7.7487 dB (mm/s) (RMS)
P3	23.0000 Frequency (Hz)	2.7653 dB (mm/s) (RMS)
P4	25.0000 Frequency (Hz)	1.3096 dB (mm/s) (RMS)
P5	28.0000 Frequency (Hz)	-.0386 dB (mm/s) (RMS)



(Signals SIG0793_APS(ch1))

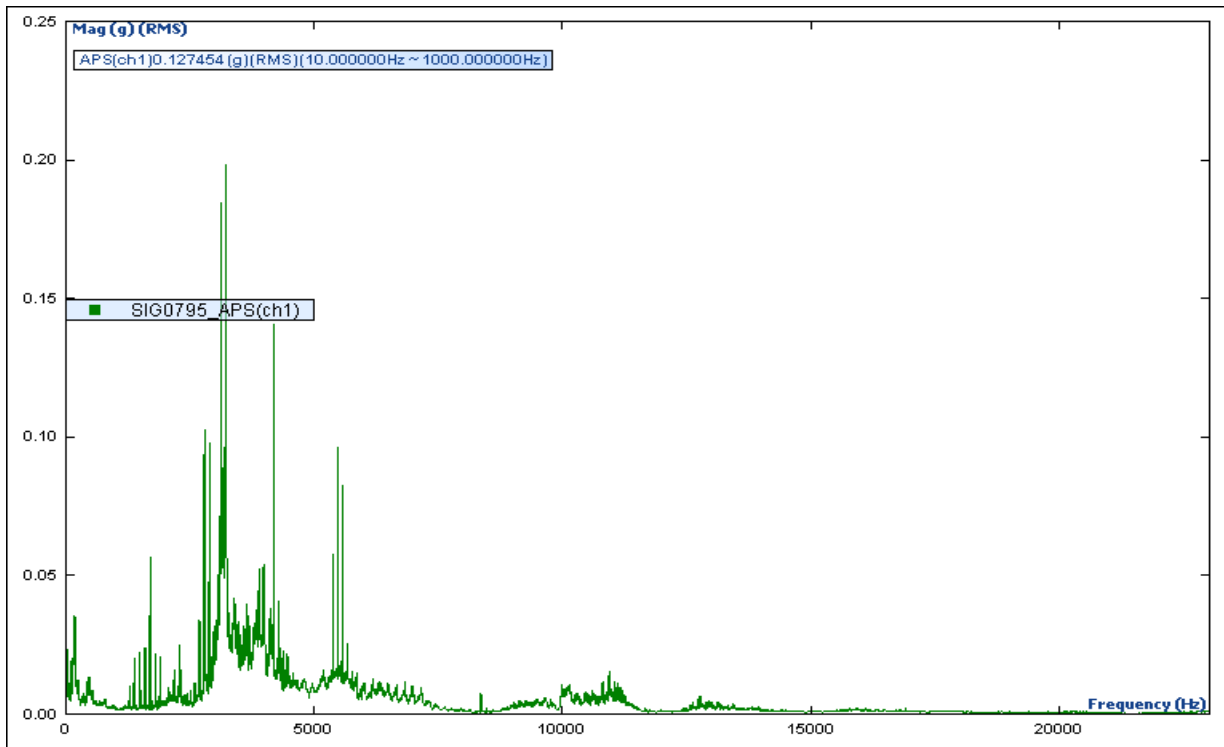


(Signals SIG0794_APS(ch1))

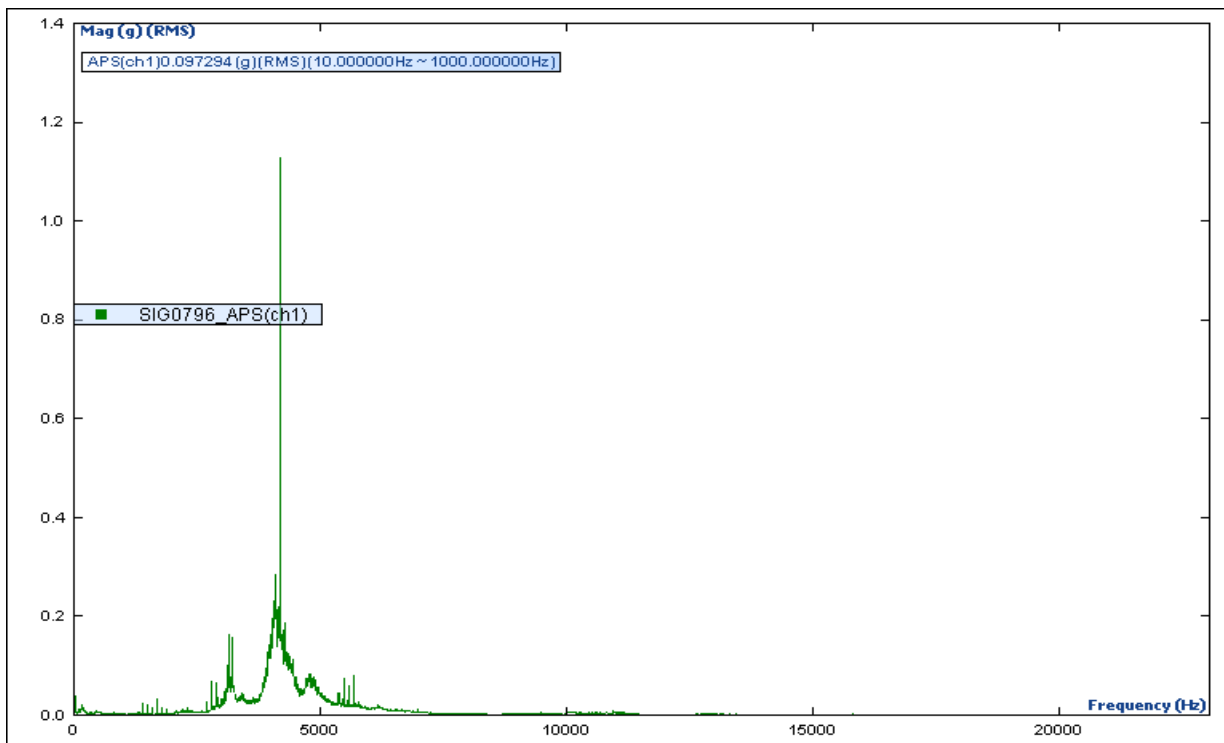




(Signals SIG0795_APS(ch1))

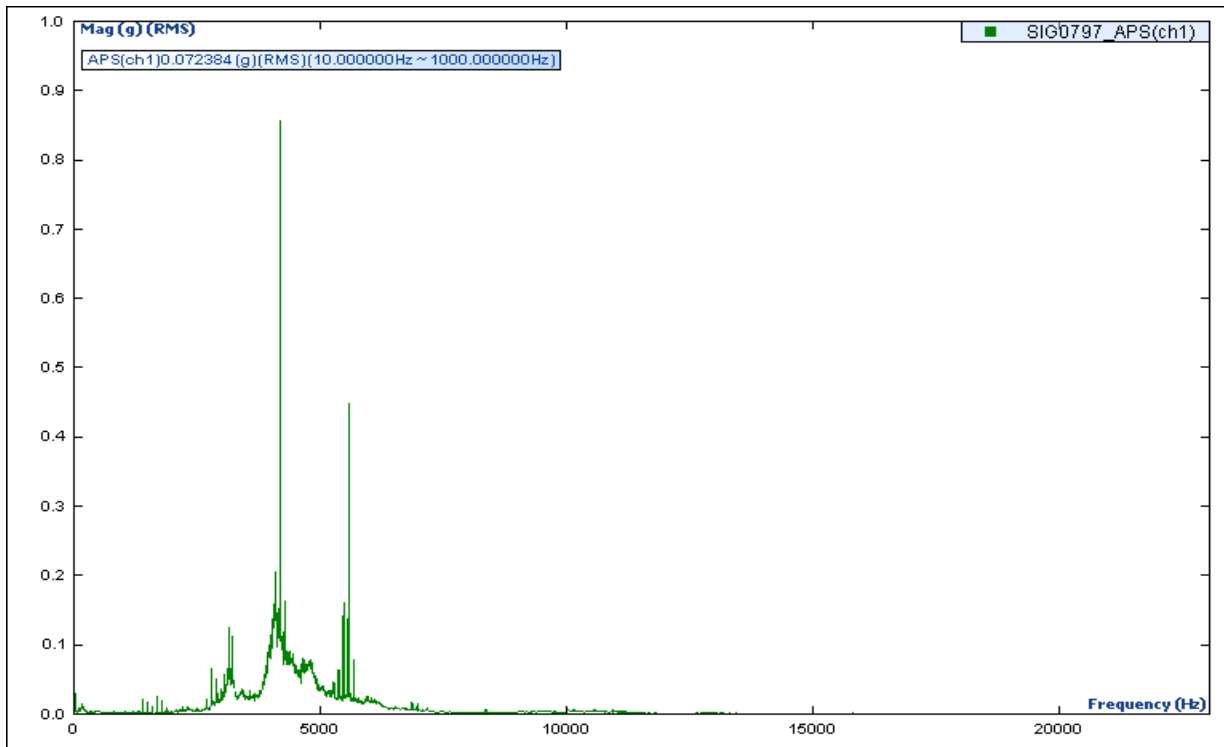


(Signals SIG0796_APS(ch1))

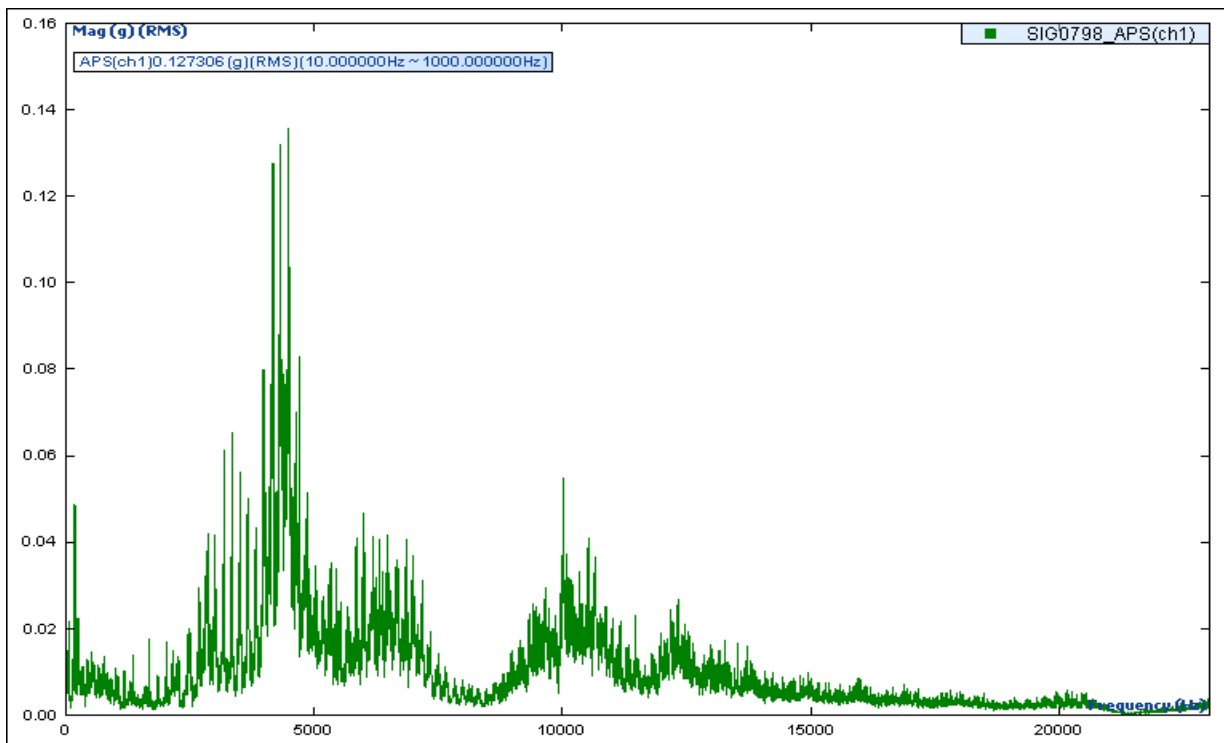




(Signals SIG0797_APS(ch1))



(Signals SIG0798_APS(ch1))





FICHE 4

V1

Observations et recommandations

	Moteur	Ventilateur
Marque	LEROY SOMMER	
Vitesse/fréquence de rotation	1480	
Puissance	200	
Fondation	SOUPLE	

Pour que l'analyse soit la plus précise possible il nous faut **toutes** les caractéristiques des roulements se trouvant dans vos équipements

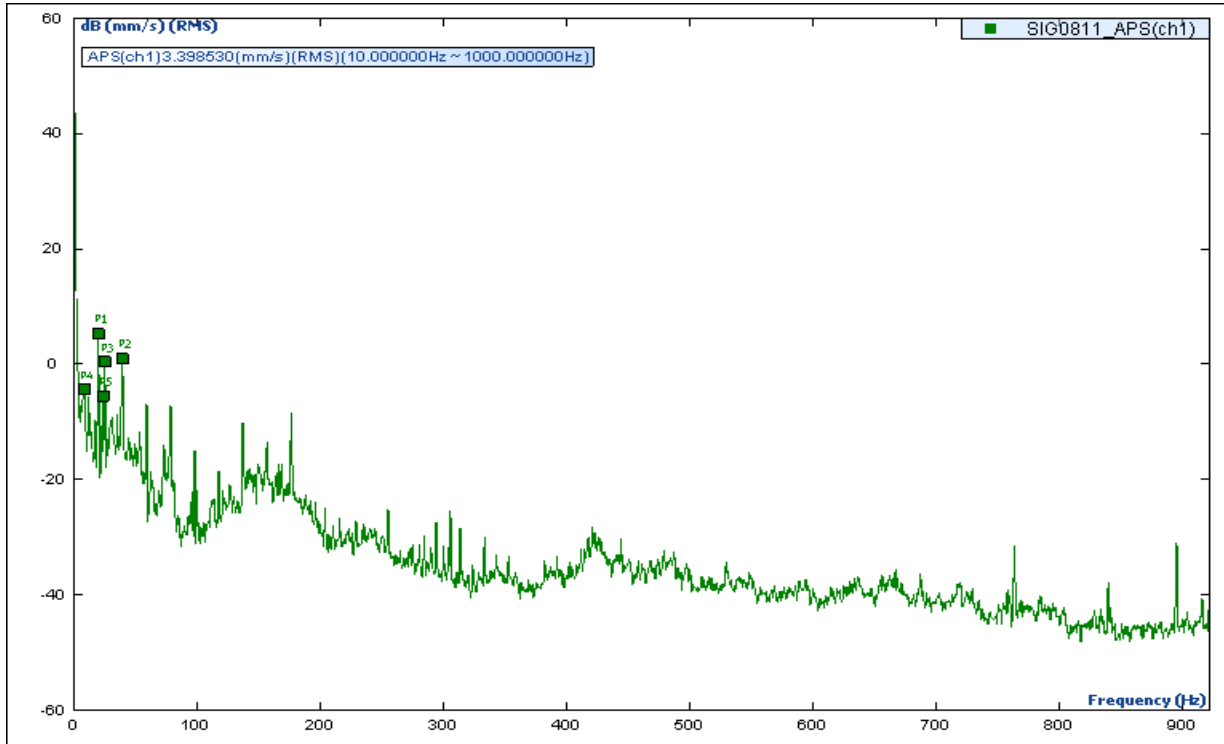
Machines	N° du point	Type de mesure	Mesure globale			Mesure spectrale	
			N° de courbe	Niveau Global (mm/s)	Urgence	N° de courbe	Observation / Recommandation
Moteur (arrière)	1	Radial	814	3.59	ACCEPTABLE	832	
		Axial	NC				
Moteur (avant)	2	Radial	813	4.05	ACCEPTABLE	830	
		Axial	812	4.66	ACCEPTABLE	81	
Palier (côté moteur)	3	Radial	811	3.39	ACCEPTABLE	829	
		Axial	NC				
Palier (côté turbine)	4	Radial	815	3.67	ACCEPTABLE	833	
		Axial	816	4.25	ACCEPTABLE	834	

Observations :



January-25-2015 13:16:35

(Signals SIG0811_APS(ch1))

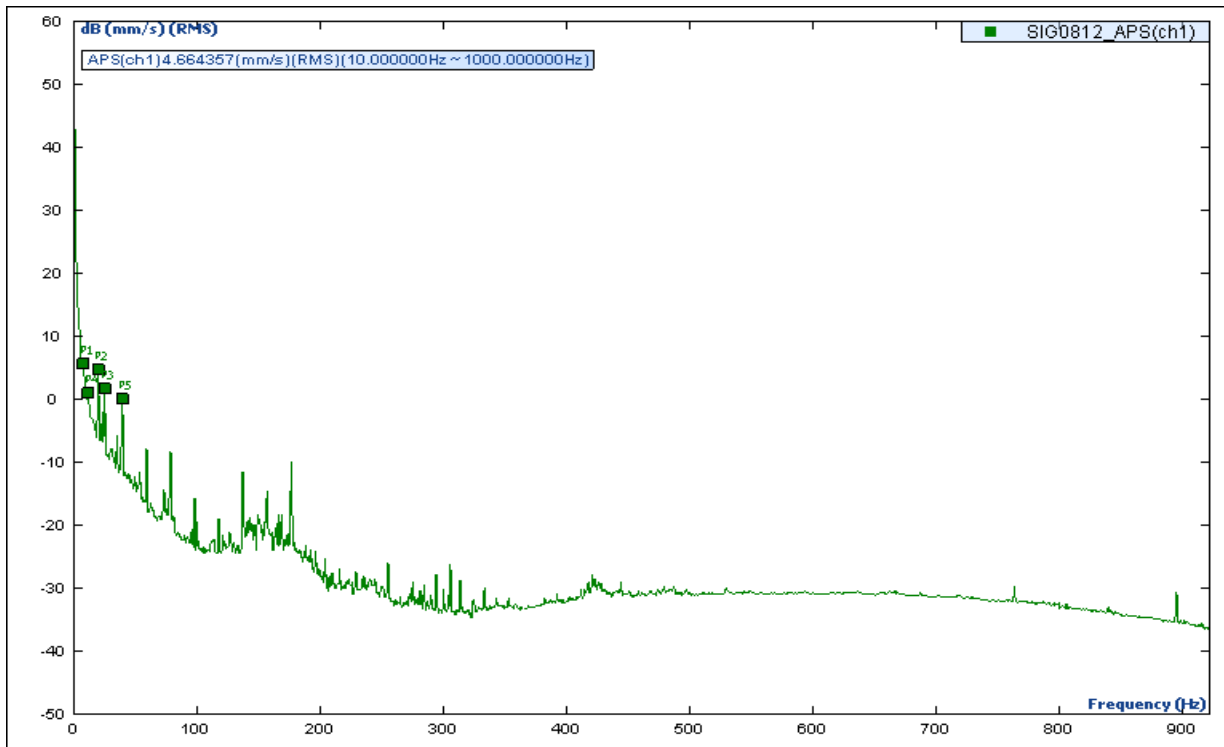


Peak Marker Values

SIG0811_APS(ch1)	X	Y
P1	19.5000 Frequency (Hz)	5.3171 dB (mm/s) (RMS)
P2	39.0000 Frequency (Hz)	1.0074 dB (mm/s) (RMS)
P3	25.0000 Frequency (Hz)	.3841 dB (mm/s) (RMS)
P4	8.5000 Frequency (Hz)	-4.3793 dB (mm/s) (RMS)
P5	23.5000 Frequency (Hz)	-5.4621 dB (mm/s) (RMS)



(Signals SIG0812_APS(ch1))

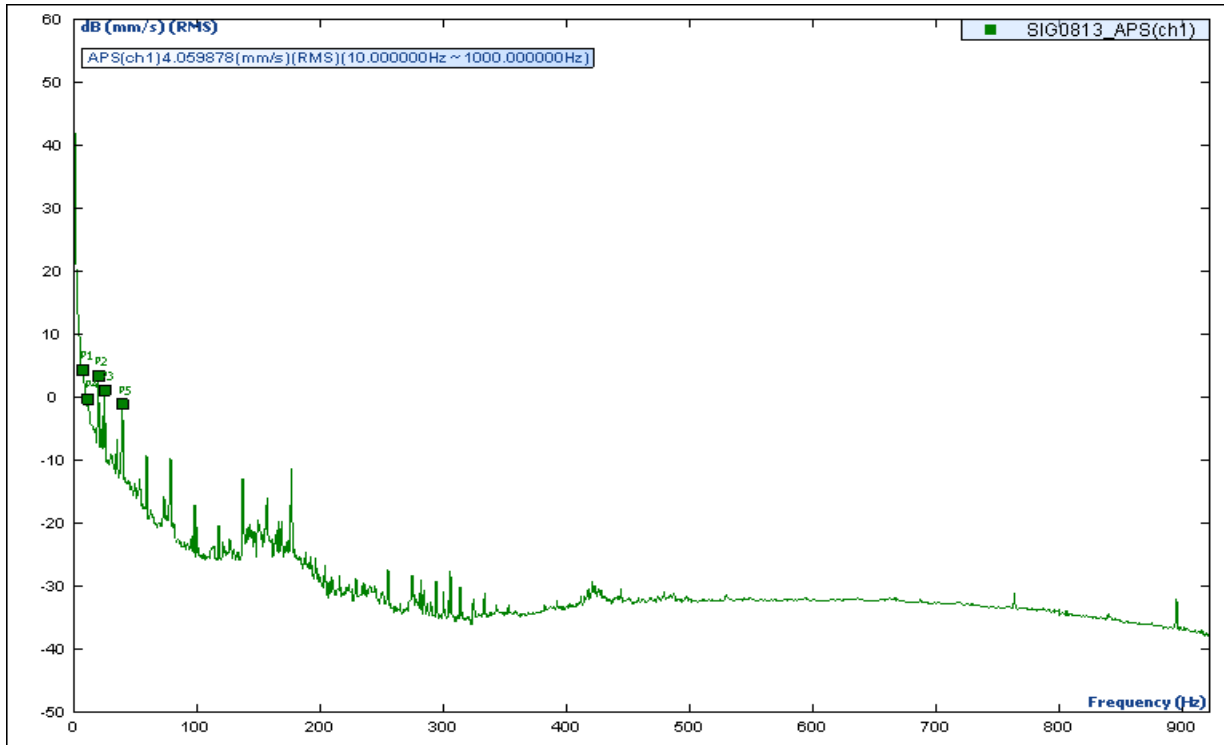


Peak Marker Values

SIG0812_APS(ch1)	X	Y
P1	7.5000 Frequency (Hz)	5.6042 dB (mm/s) (RMS)
P2	19.5000 Frequency (Hz)	4.6742 dB (mm/s) (RMS)
P3	25.0000 Frequency (Hz)	1.6622 dB (mm/s) (RMS)
P4	11.5000 Frequency (Hz)	.9961 dB (mm/s) (RMS)
P5	39.0000 Frequency (Hz)	.0070 dB (mm/s) (RMS)



(Signals SIG0813_APS(ch1))

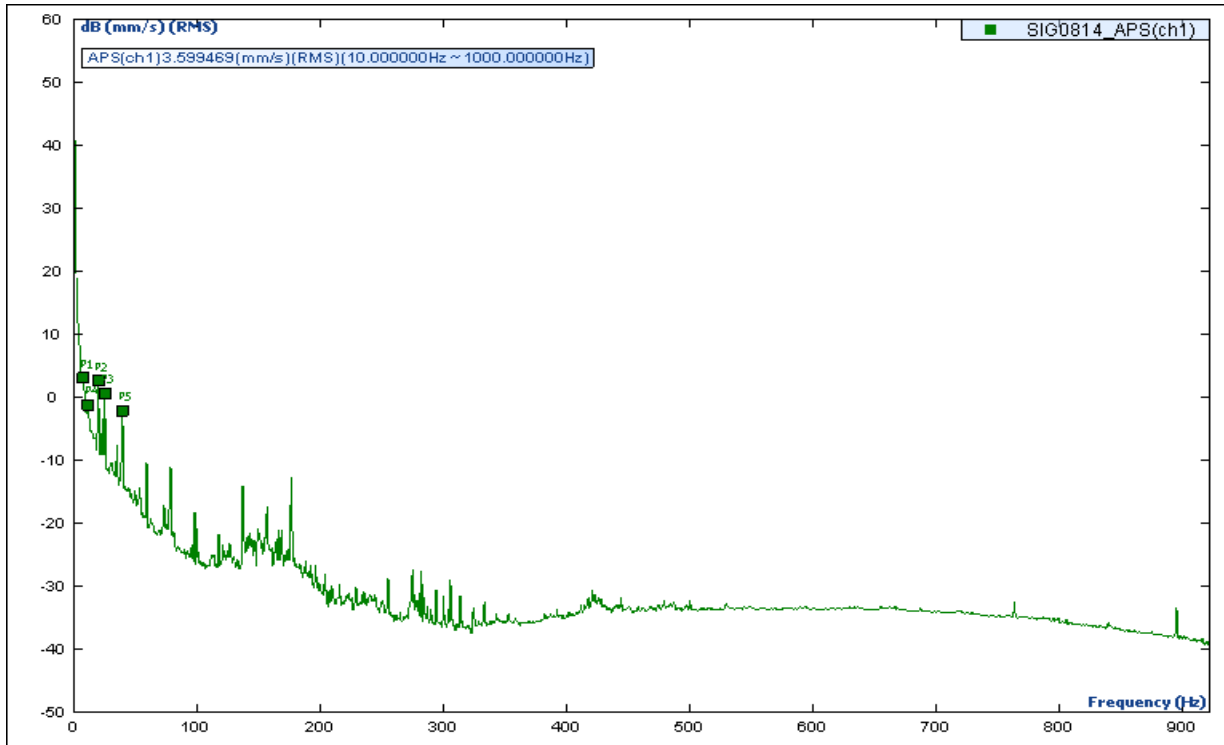


Peak Marker Values

SIG0813_APS(ch1)		
	X	Y
P1	7.5000 Frequency (Hz)	4.3140 dB (mm/s) (RMS)
P2	19.5000 Frequency (Hz)	3.3748 dB (mm/s) (RMS)
P3	25.0000 Frequency (Hz)	1.1483 dB (mm/s) (RMS)
P4	11.5000 Frequency (Hz)	-.2906 dB (mm/s) (RMS)
P5	39.0000 Frequency (Hz)	-1.0985 dB (mm/s) (RMS)



(Signals SIG0814_APS(ch1))

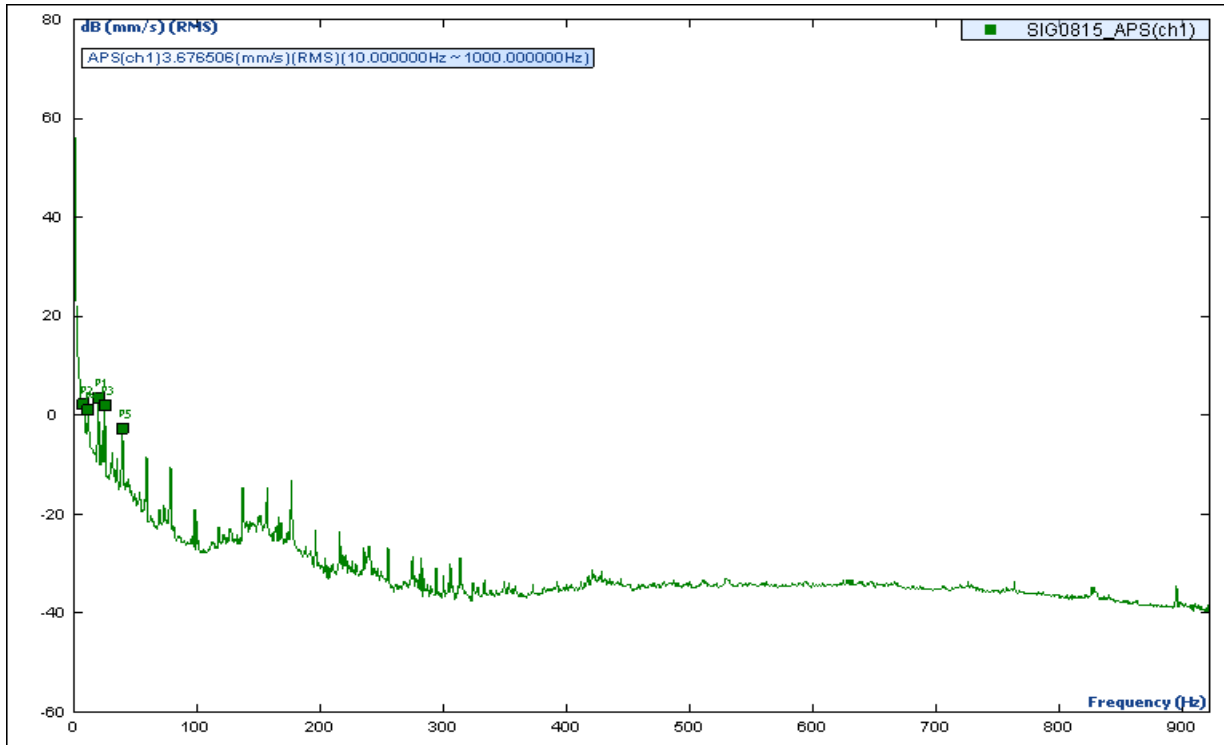


Peak Marker Values

SIG0814_APS(ch1)	X	Y
P1	7.5000 Frequency (Hz)	3.0404 dB (mm/s) (RMS)
P2	19.5000 Frequency (Hz)	2.5852 dB (mm/s) (RMS)
P3	25.0000 Frequency (Hz)	.5914 dB (mm/s) (RMS)
P4	11.5000 Frequency (Hz)	-1.2138 dB (mm/s) (RMS)
P5	39.0000 Frequency (Hz)	-2.1814 dB (mm/s) (RMS)



(Signals SIG0815_APS(ch1))

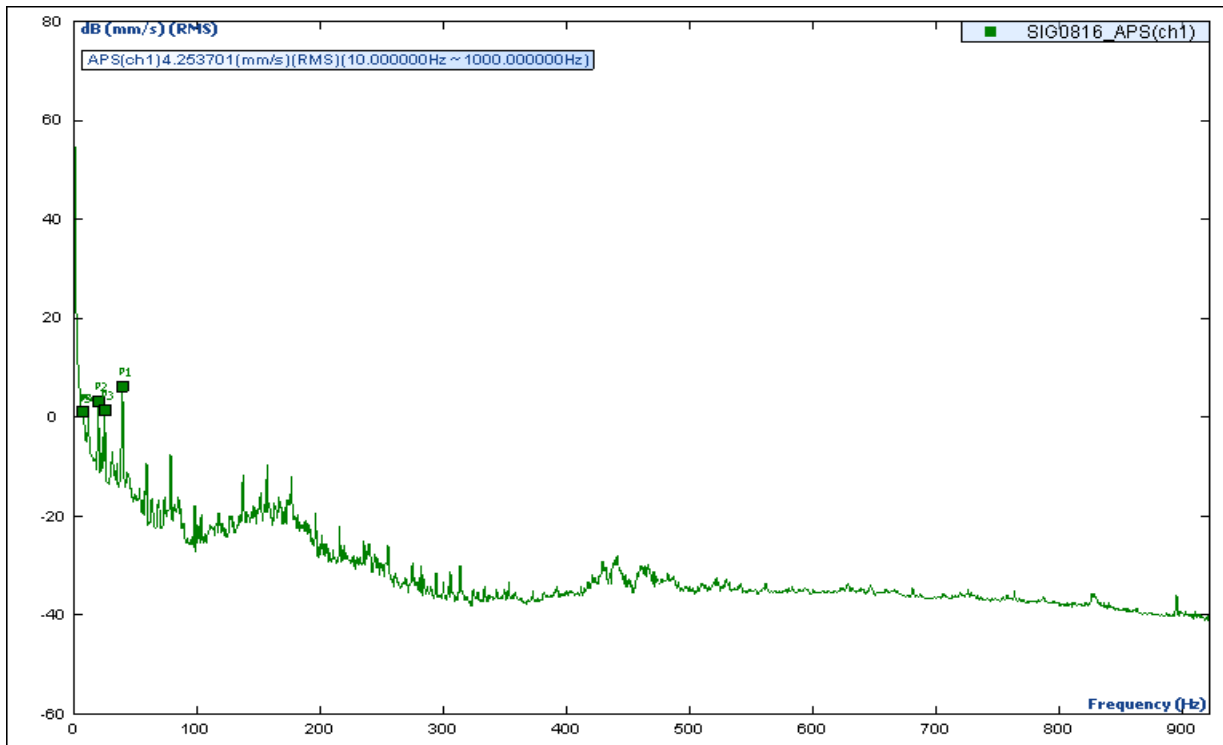


Peak Marker Values

SIG0815_APS(ch1)	X	Y
P1	19.5000 Frequency (Hz)	3.6313 dB (mm/s) (RMS)
P2	7.5000 Frequency (Hz)	2.2494 dB (mm/s) (RMS)
P3	25.0000 Frequency (Hz)	2.0818 dB (mm/s) (RMS)
P4	11.5000 Frequency (Hz)	1.0118 dB (mm/s) (RMS)
P5	39.0000 Frequency (Hz)	-2.5860 dB (mm/s) (RMS)



(Signals SIG0816_APS(ch1))

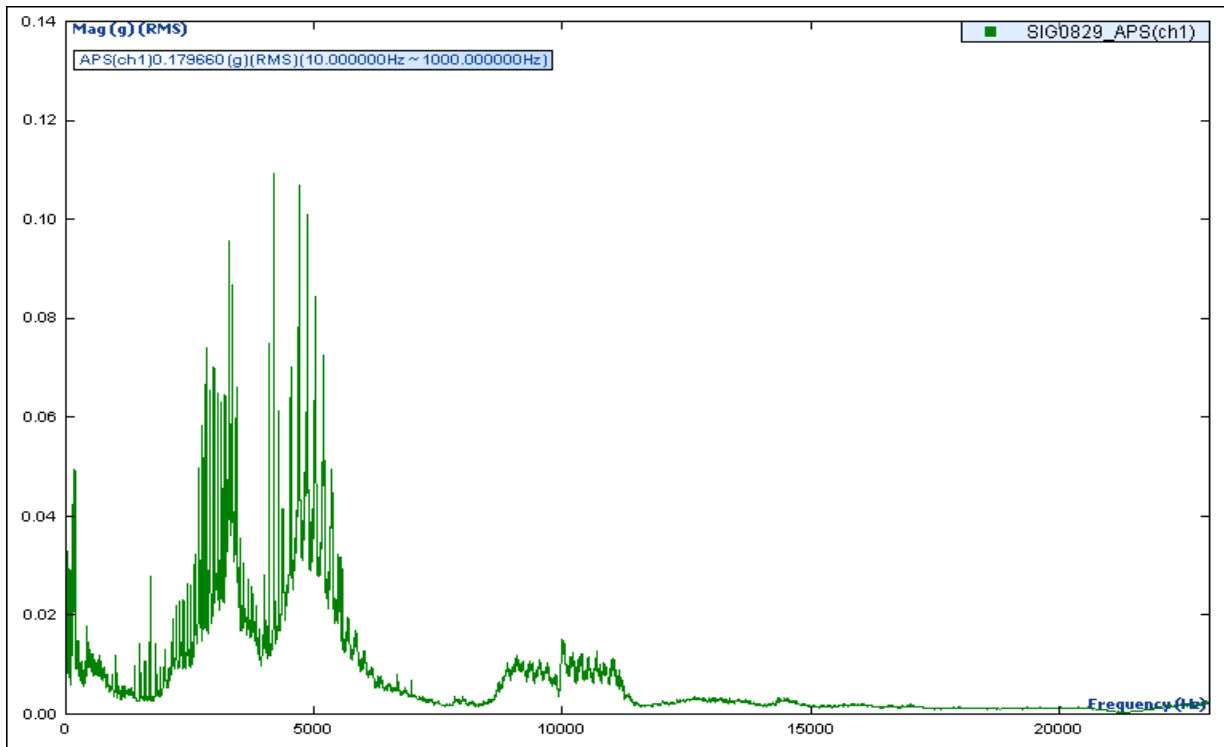


Peak Marker Values

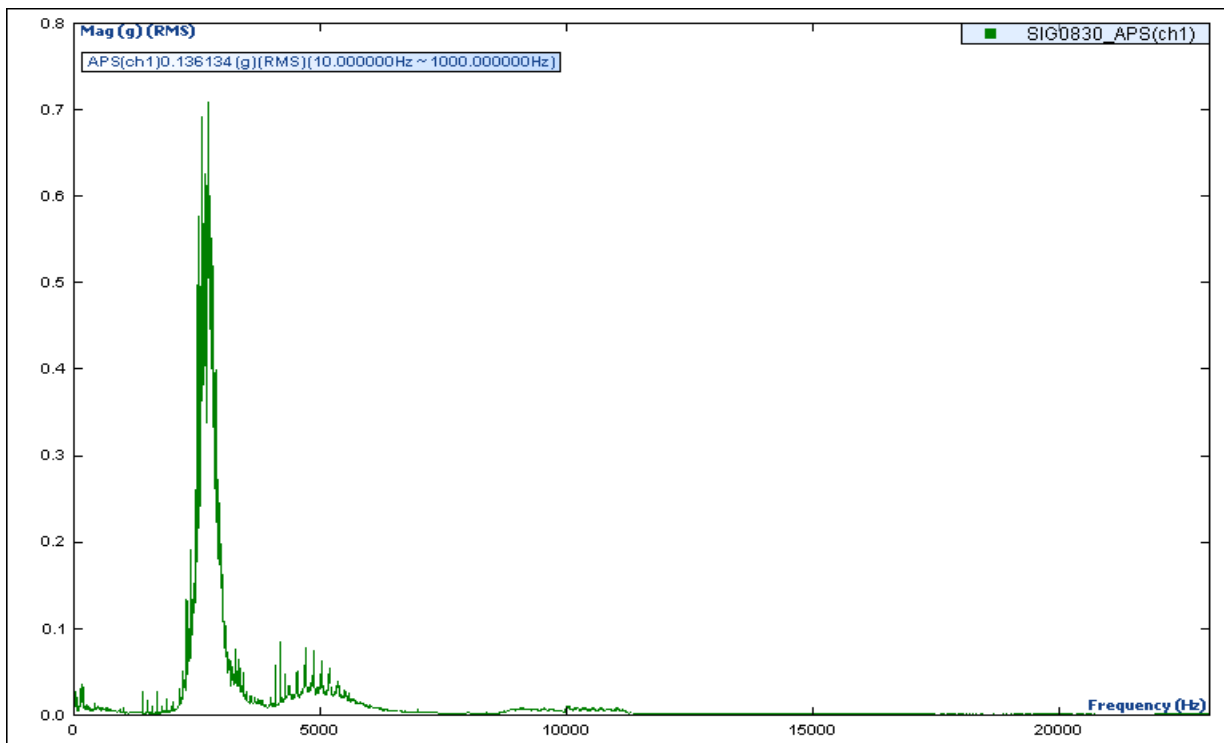
SIG0816_APS(ch1)	X	Y
P1	39.0000 Frequency (Hz)	6.1770 dB (mm/s) (RMS)
P2	19.5000 Frequency (Hz)	3.2205 dB (mm/s) (RMS)
P3	25.0000 Frequency (Hz)	1.3827 dB (mm/s) (RMS)
P4	7.5000 Frequency (Hz)	1.0515 dB (mm/s) (RMS)
P5	6.5000 Frequency (Hz)	.9950 dB (mm/s) (RMS)



(Signals SIG0829_APS(ch1))

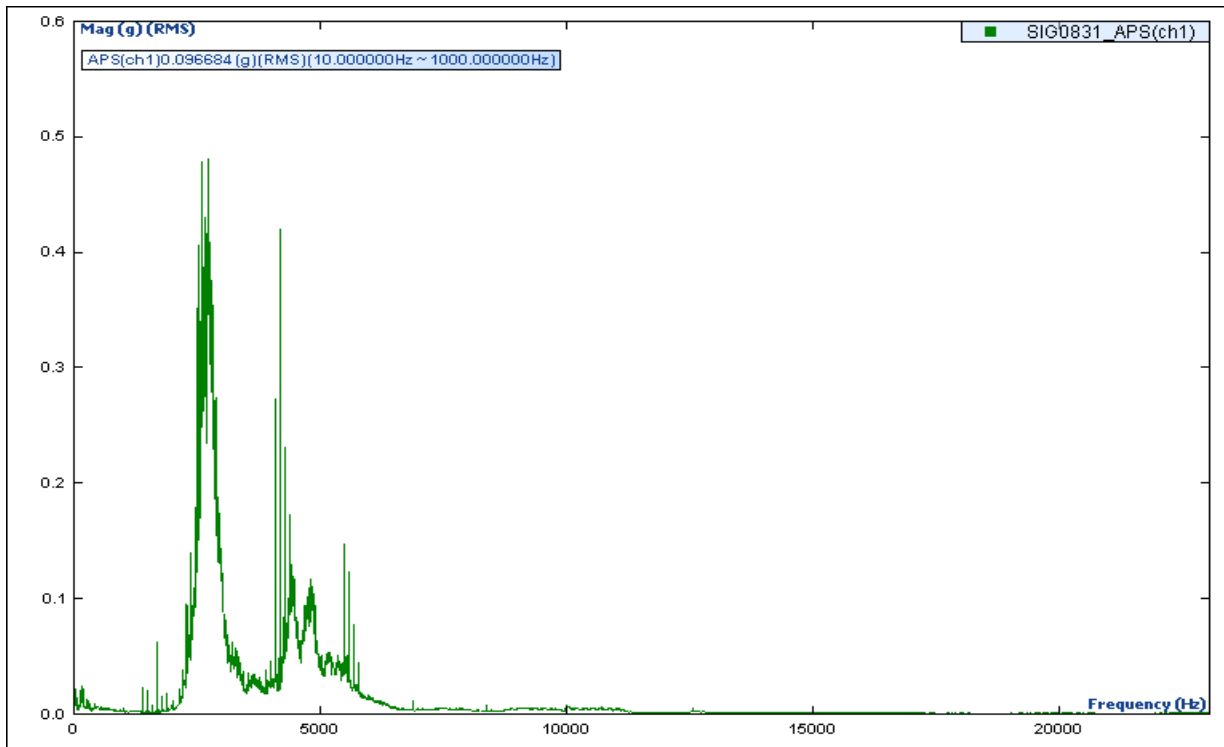


(Signals SIG0830_APS(ch1))

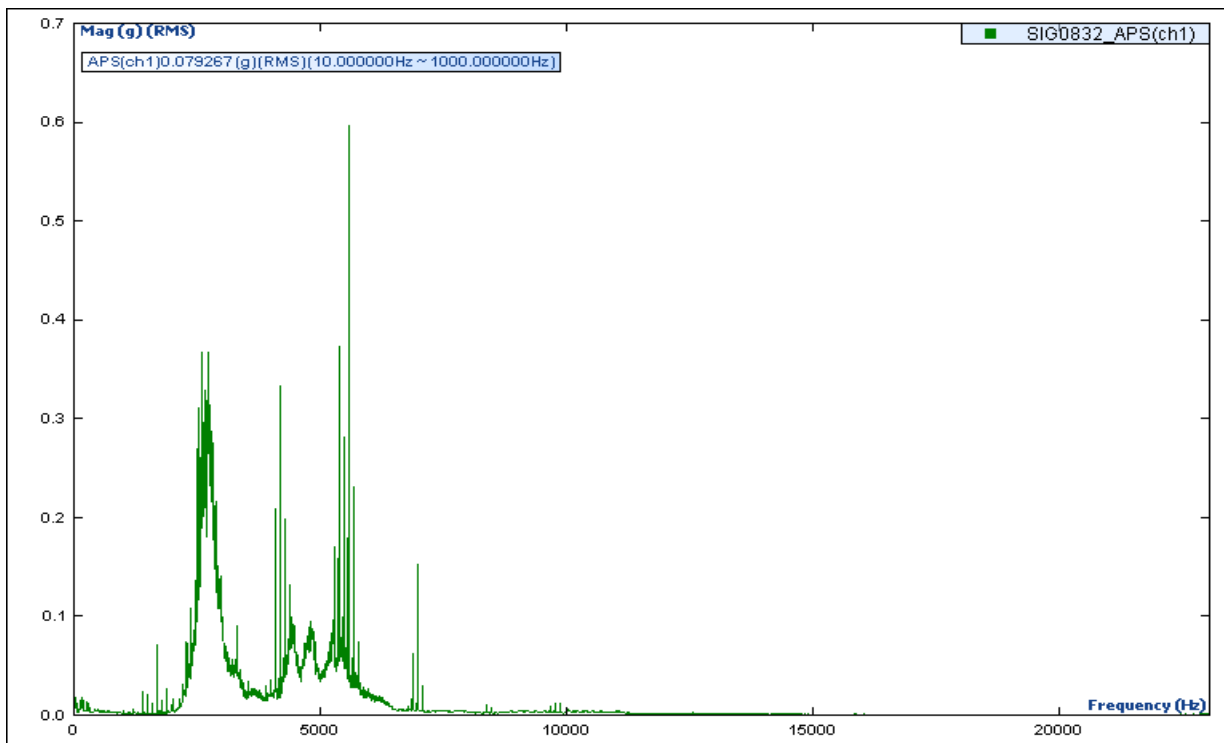




(Signals SIG0831_APS(ch1))

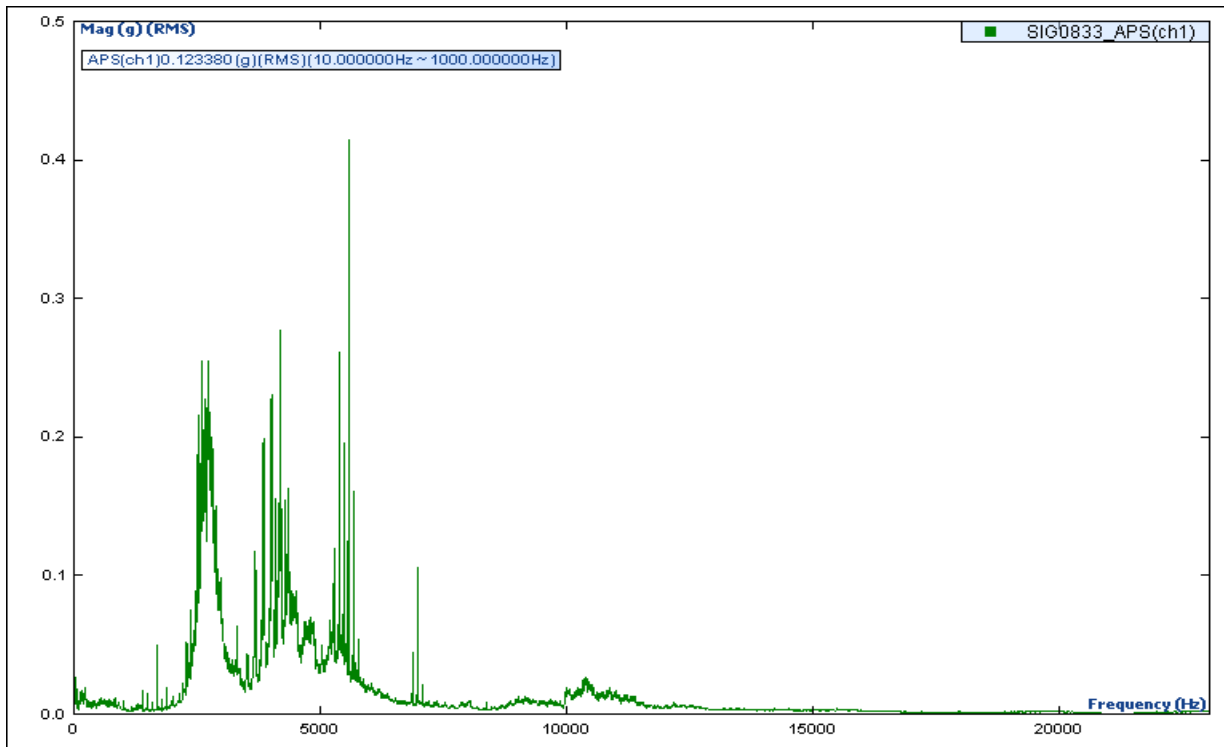


(Signals SIG0832_APS(ch1))

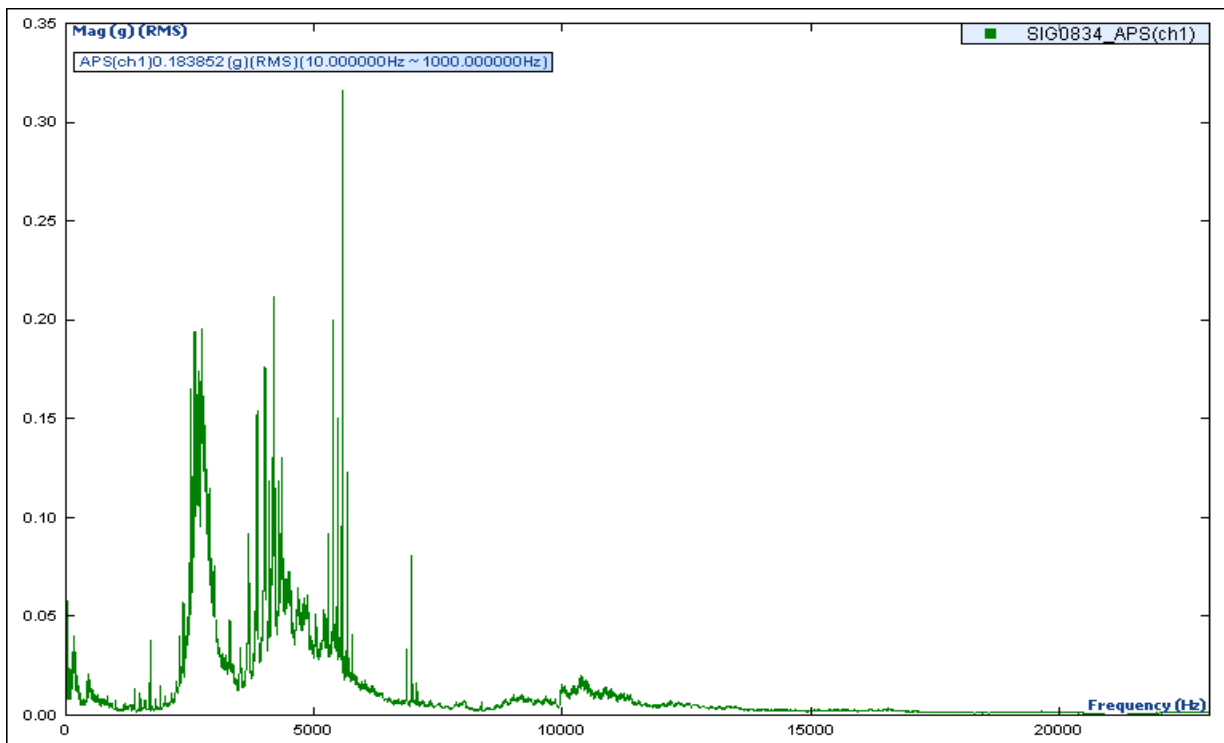




(Signals SIG0833_APS(ch1))



(Signals SIG0834_APS(ch1))





FICHE 5

V2

Observations et recommandations

	Moteur	Ventilateur
Marque	LEROY SOMMER	
Vitesse/fréquence de rotation	1480	
Puissance	200	
Fondation	SOUPLE	

Pour que l'analyse soit la plus précise possible il nous faut **toutes** les caractéristiques des roulements se trouvant dans vos équipements

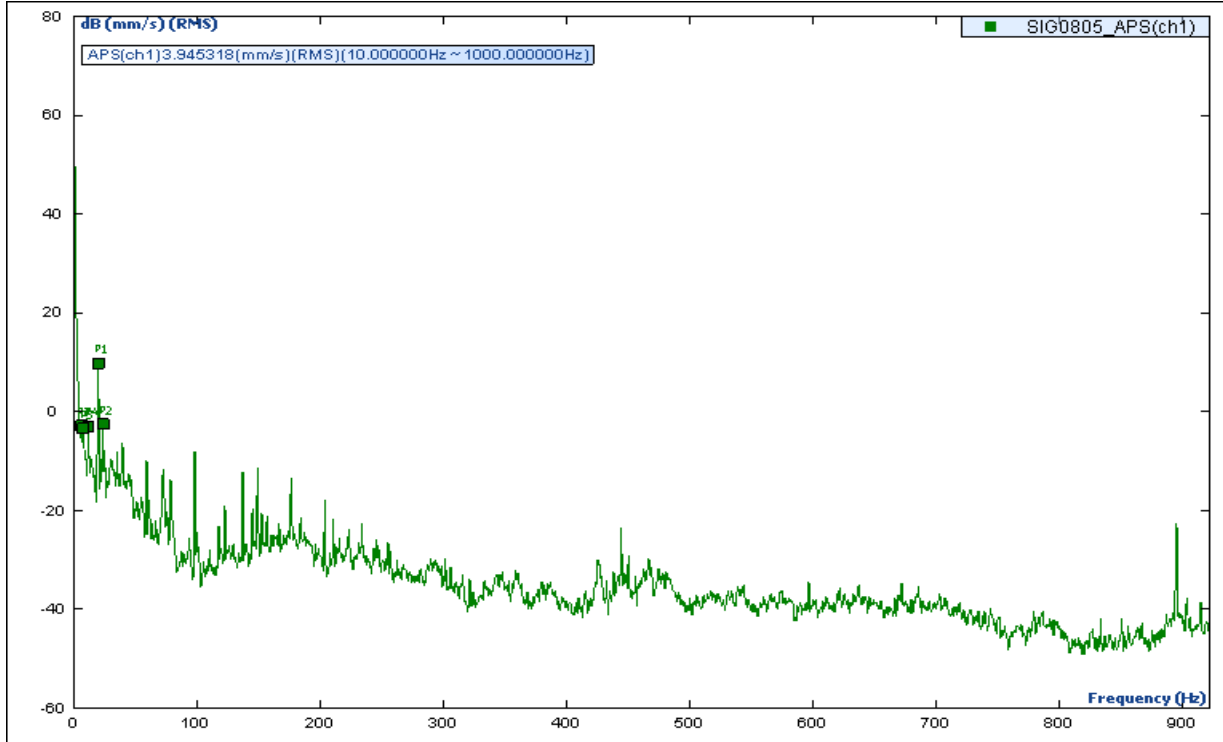
Machines	N° du point	Type de mesure	Mesure globale			Mesure spectrale	
			N° de courbe	Niveau Global (mm/s)	Urgence	N° de courbe	Observation / Recommandation
Moteur (arrière)	1	Radial	808	2.08	NORMAL	826	
		Axial	NC				
Moteur (avant)	2	Radial	807	3.30	NORMAL	824	
		Axial	806	3.71	NORMAL	825	
Palier (côté moteur)	3	Radial	805	3.94	NORMAL	823	
		Axial	NC				
Palier (côté turbine)	4	Radial	809	2.74	NORMAL	827	
		Axial	810	3.56	NORMAL	828	

Observations :



January-25-2015 13:28:09

(Signals SIG0805_APS(ch1))

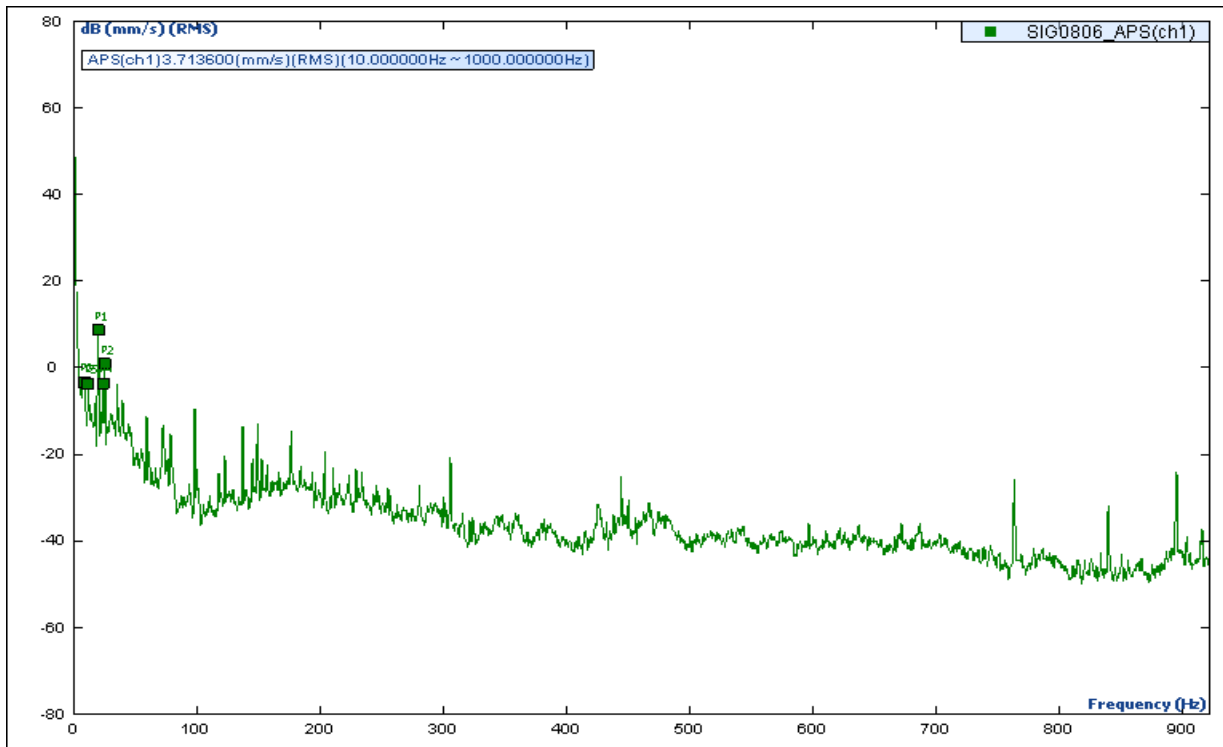


Peak Marker Values

SIG0805_APS(ch1)	X	Y
P1	19.5000 Frequency (Hz)	9.8347 dB (mm/s) (RMS)
P2	23.5000 Frequency (Hz)	-2.5679 dB (mm/s) (RMS)
P3	6.0000 Frequency (Hz)	-2.8692 dB (mm/s) (RMS)
P4	11.5000 Frequency (Hz)	-3.0553 dB (mm/s) (RMS)
P5	7.5000 Frequency (Hz)	-3.3959 dB (mm/s) (RMS)



(Signals SIG0806_APS(ch1))

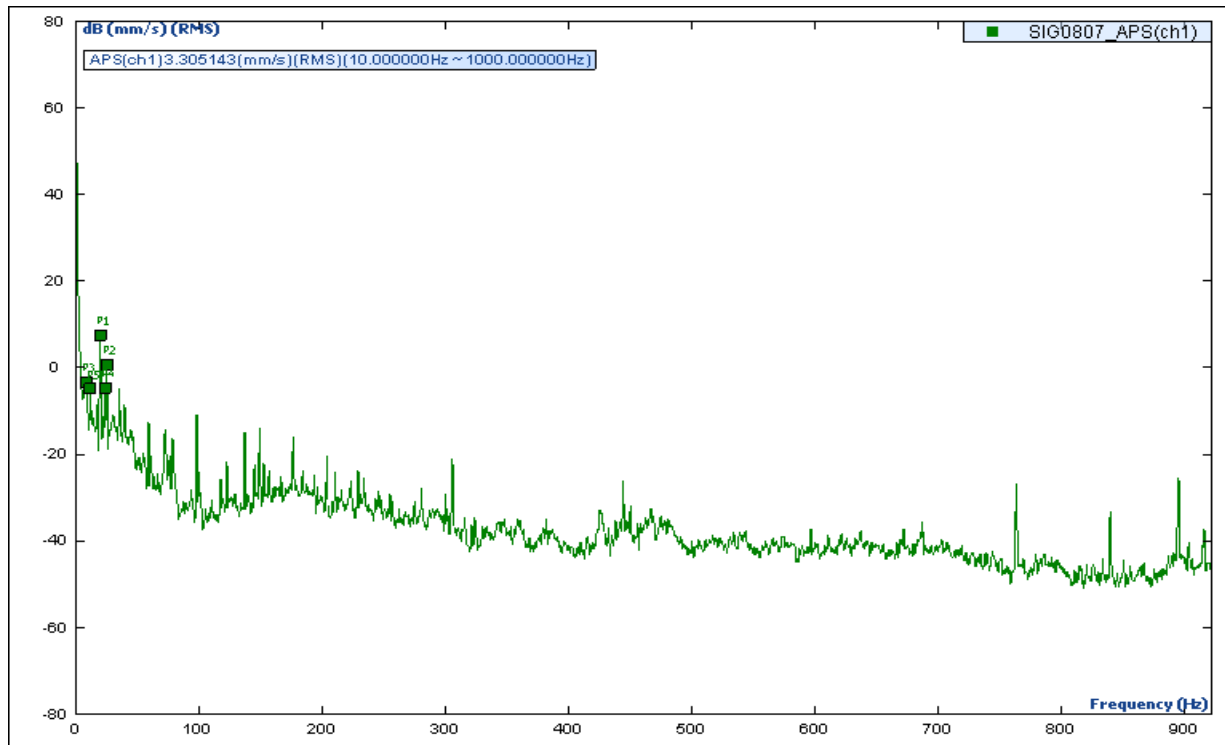


Peak Marker Values

SIG0806_APS(ch1)	X	Y
P1	19.5000 Frequency (Hz)	8.6472 dB (mm/s) (RMS)
P2	25.0000 Frequency (Hz)	.8602 dB (mm/s) (RMS)
P3	8.5000 Frequency (Hz)	-3.3382 dB (mm/s) (RMS)
P4	23.5000 Frequency (Hz)	-3.6382 dB (mm/s) (RMS)
P5	11.5000 Frequency (Hz)	-3.7385 dB (mm/s) (RMS)



(Signals SIG0807_APS(ch1))

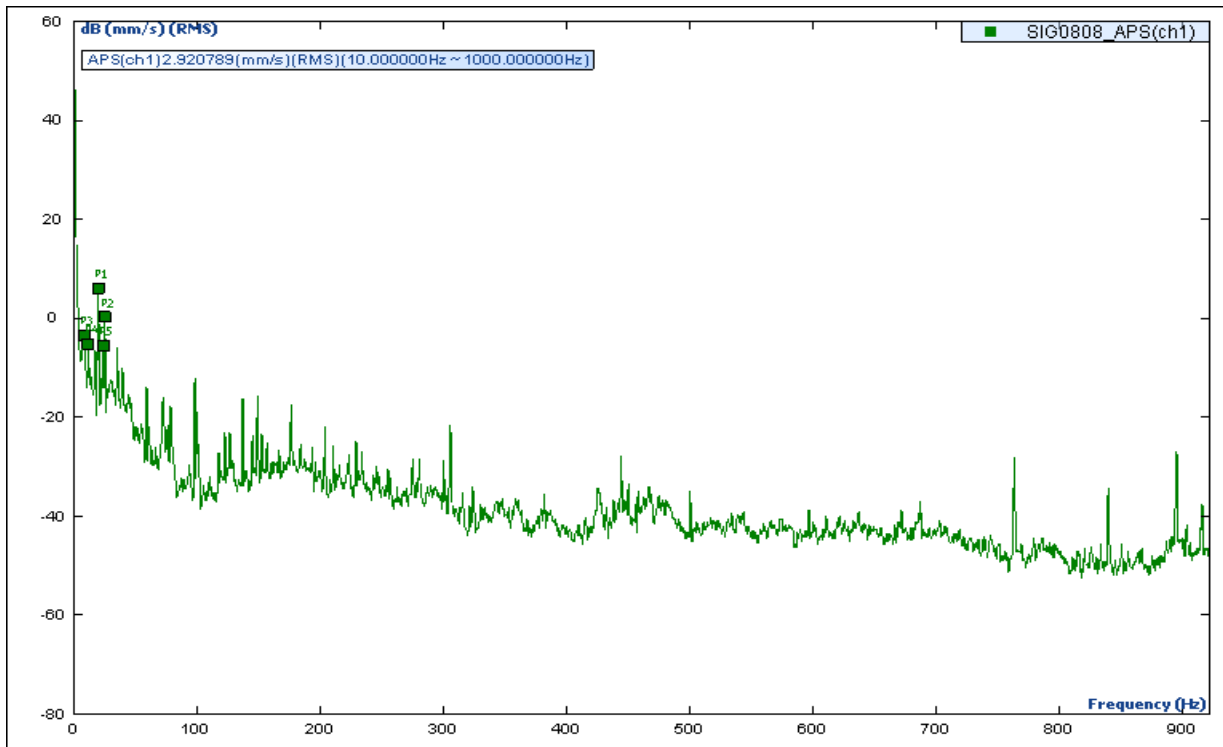


Peak Marker Values

SIG0807_APS(ch1)	X	Y
P1	19.5000 Frequency (Hz)	7.4715 dB (mm/s) (RMS)
P2	25.0000 Frequency (Hz)	.7624 dB (mm/s) (RMS)
P3	8.5000 Frequency (Hz)	-3.3273 dB (mm/s) (RMS)
P4	23.5000 Frequency (Hz)	-4.6598 dB (mm/s) (RMS)
P5	11.5000 Frequency (Hz)	-4.9009 dB (mm/s) (RMS)



(Signals SIG0808_APS(ch1))

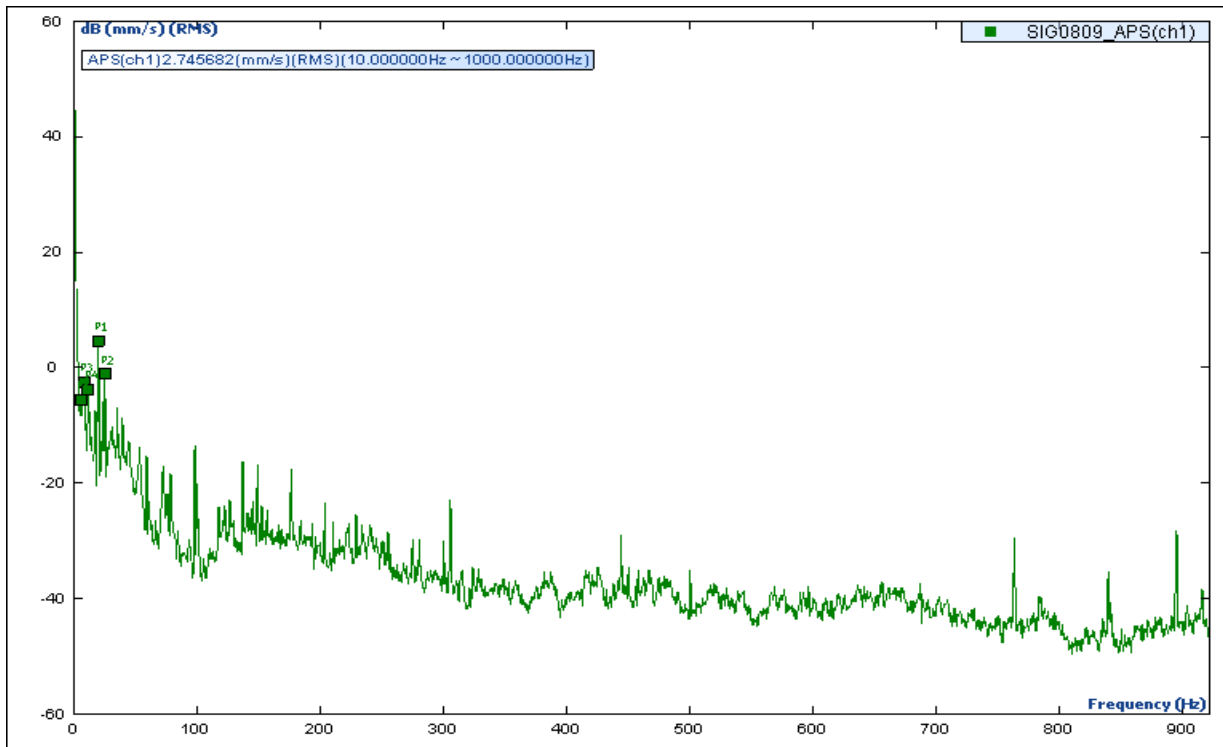


Peak Marker Values

SIG0808_APS(ch1)	X	Y
P1	19.5000 Frequency (Hz)	6.0154 dB (mm/s) (RMS)
P2	25.0000 Frequency (Hz)	.2770 dB (mm/s) (RMS)
P3	8.5000 Frequency (Hz)	-3.3706 dB (mm/s) (RMS)
P4	11.5000 Frequency (Hz)	-5.1951 dB (mm/s) (RMS)
P5	23.5000 Frequency (Hz)	-5.5345 dB (mm/s) (RMS)



(Signals SIG0809_APS(ch1))

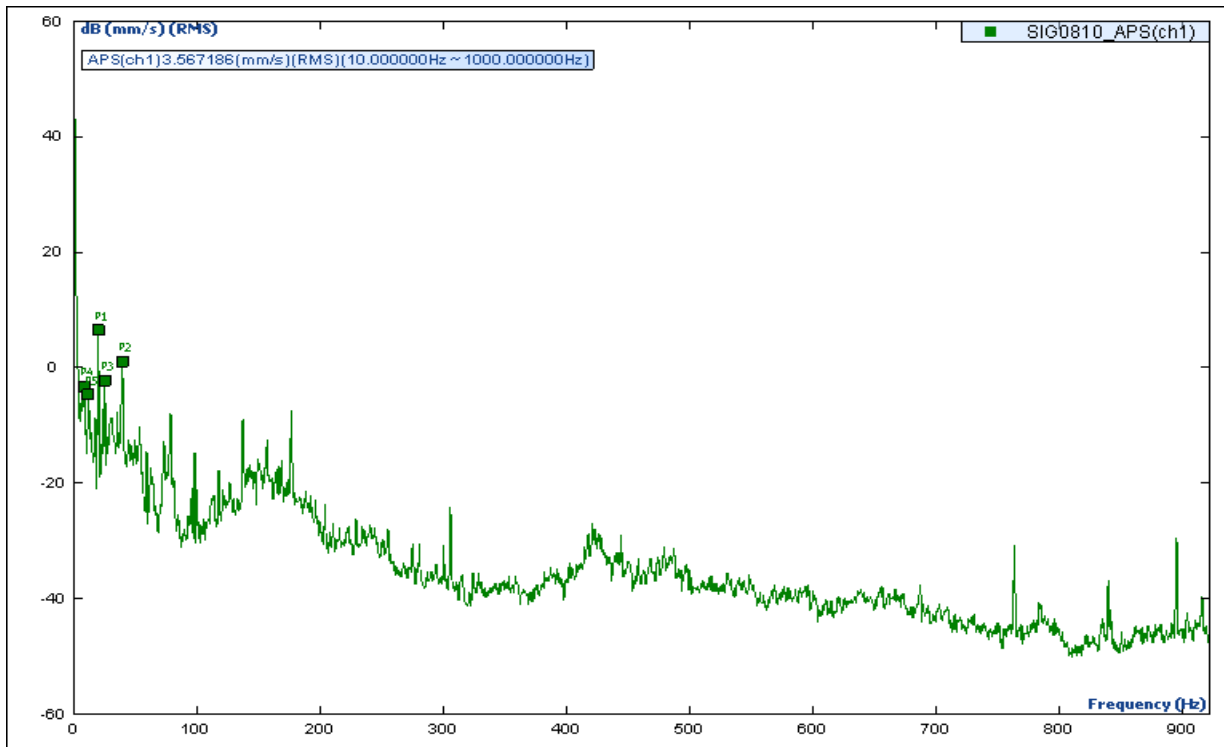


Peak Marker Values

SIG0809_APS(ch1)	X	Y
P1	19.5000 Frequency (Hz)	4.6851 dB (mm/s) (RMS)
P2	25.0000 Frequency (Hz)	-1.0720 dB (mm/s) (RMS)
P3	8.5000 Frequency (Hz)	-2.5448 dB (mm/s) (RMS)
P4	11.5000 Frequency (Hz)	-3.8257 dB (mm/s) (RMS)
P5	6.0000 Frequency (Hz)	-5.5224 dB (mm/s) (RMS)



(Signals SIG0810_APS(ch1))

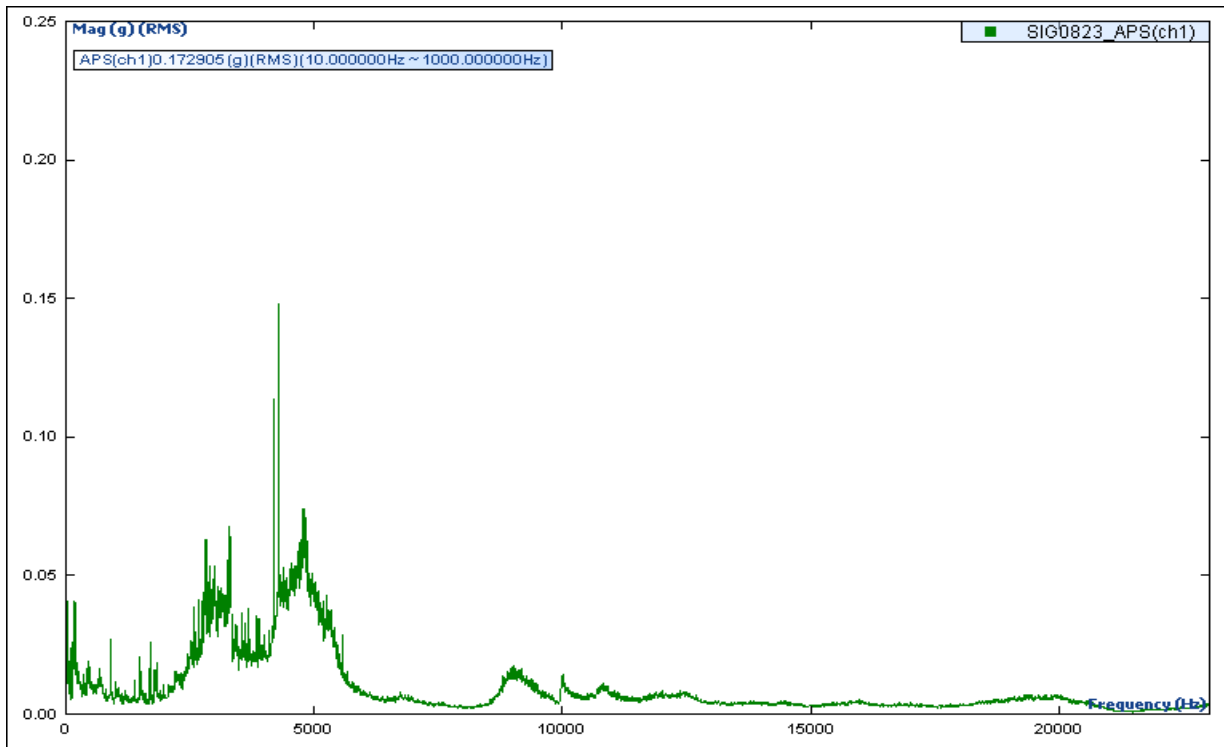


Peak Marker Values

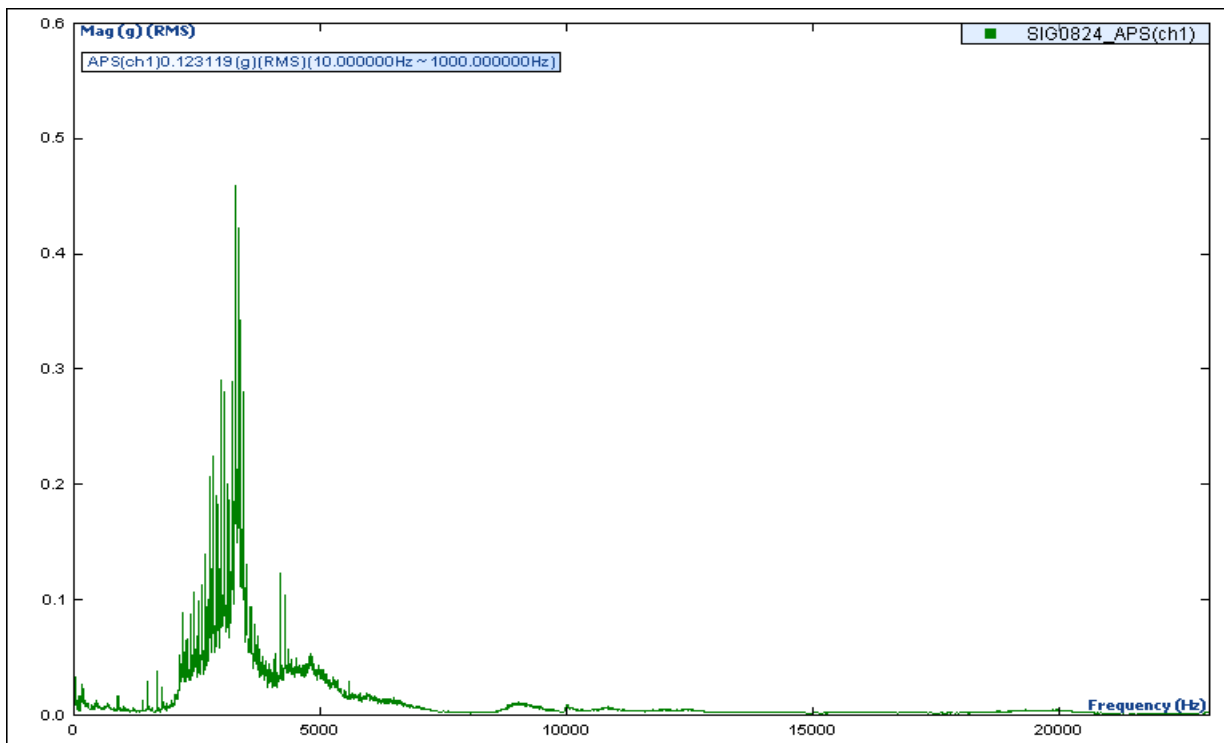
SIG0810_APS(ch1)	X	Y
P1	19.5000 Frequency (Hz)	6.4769 dB (mm/s) (RMS)
P2	39.0000 Frequency (Hz)	1.0948 dB (mm/s) (RMS)
P3	25.0000 Frequency (Hz)	-2.1985 dB (mm/s) (RMS)
P4	8.5000 Frequency (Hz)	-3.3244 dB (mm/s) (RMS)
P5	11.5000 Frequency (Hz)	-4.6125 dB (mm/s) (RMS)



(Signals SIG0823_APS(ch1))

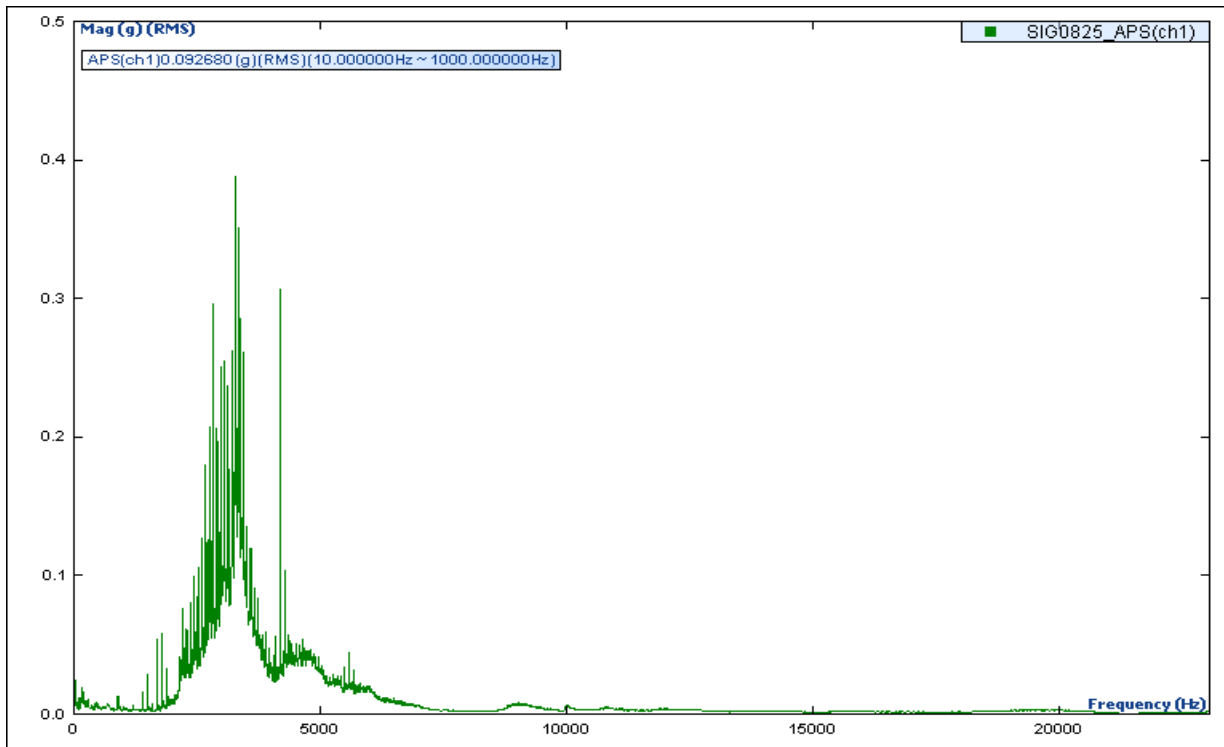


(Signals SIG0824_APS(ch1))

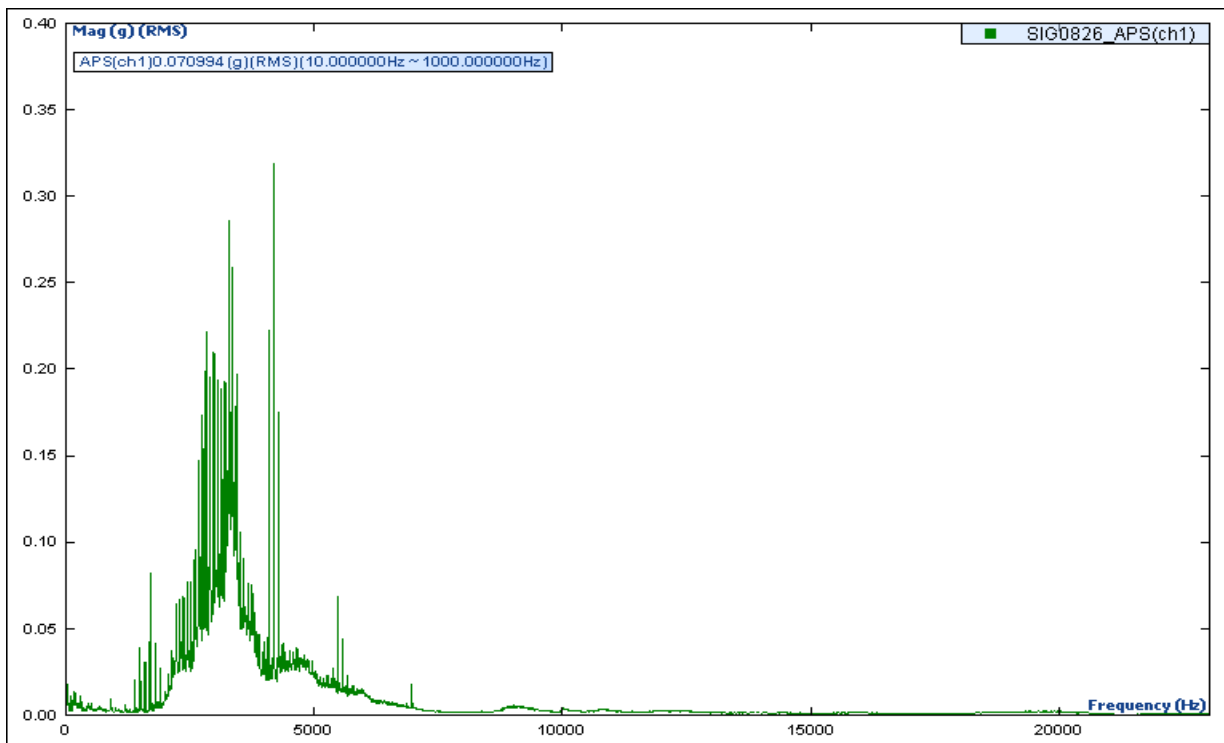




(Signals SIG0825_APS(ch1))

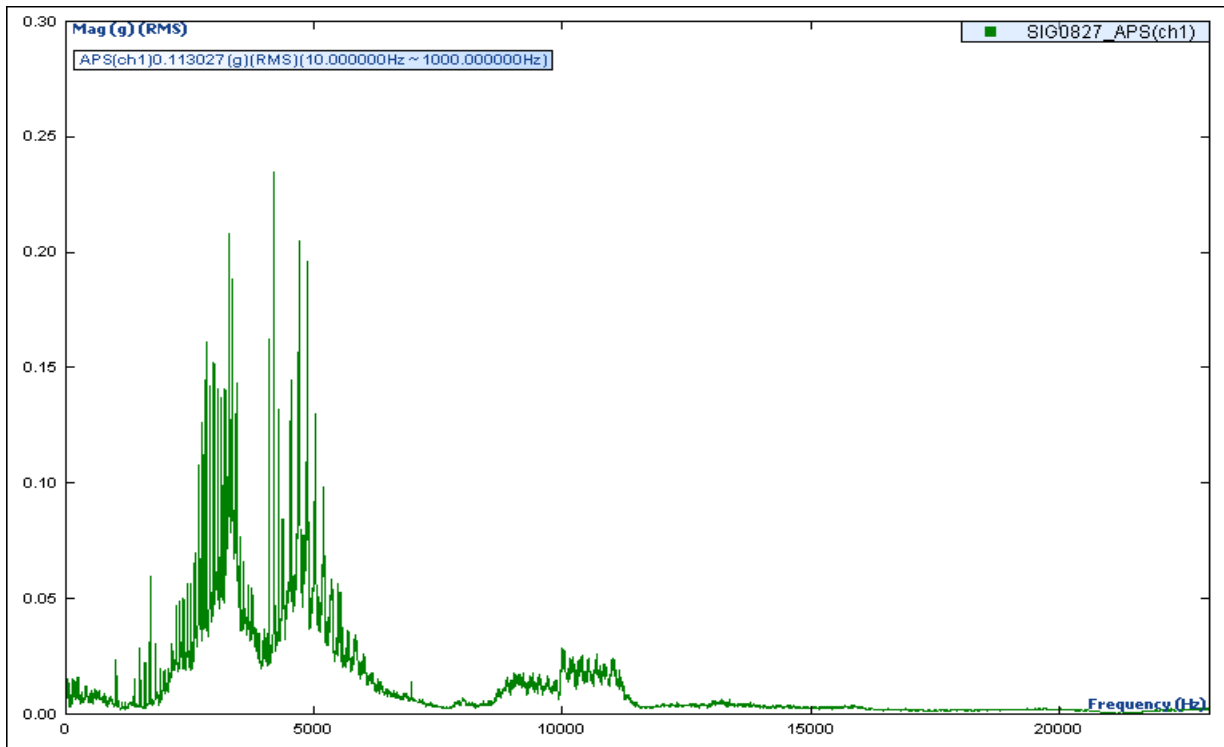


(Signals SIG0826_APS(ch1))

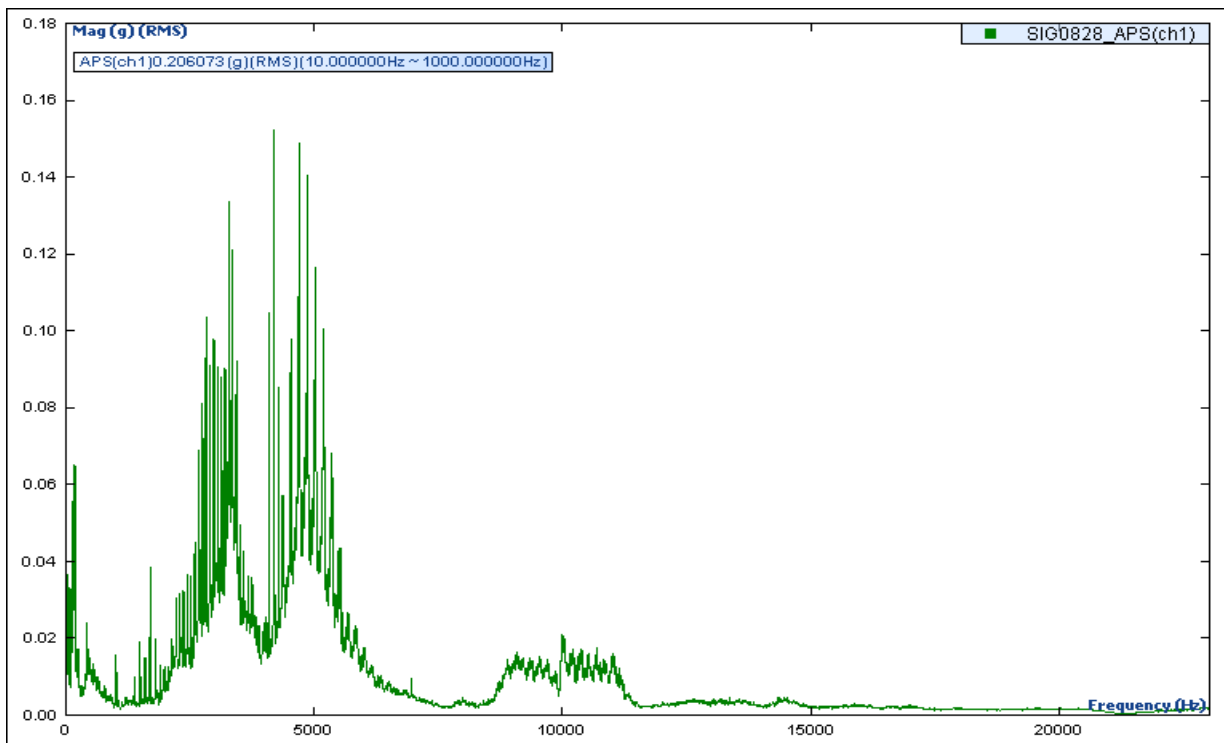




(Signals SIG0827_APS(ch1))



(Signals SIG0828_APS(ch1))





FICHE 6

V3

Observations et recommandations

	Moteur	Ventilateur
Marque	LEROY SOMMER	
Vitesse/fréquence de rotation	1480	
Puissance	200	
Fondation	SOUPLE	

Pour que l'analyse soit la plus précise possible il nous faut **toutes** les caractéristiques des roulements se trouvant dans vos équipements

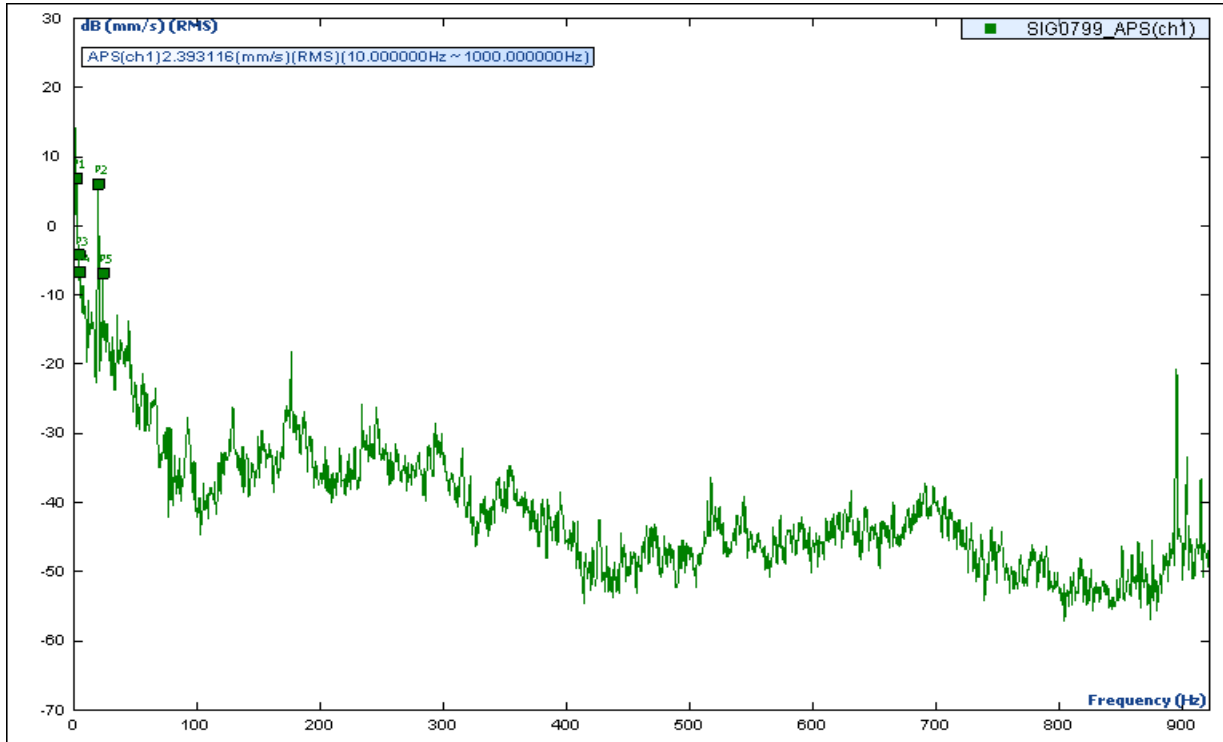
Machines	N° du point	Type de mesure	Mesure globale			Mesure spectrale	
			N° de courbe	Niveau Global (mm/s)	Urgence	N° de courbe	Observation / Recommandation
Moteur (arrière)	1	Radial	802	2.74	NORMAL	820	
		Axial	NC		NORMAL		
Moteur (avant)	2	Radial	801	2.69	NORMAL	818	
		Axial	800	2.93	NORMAL	819	
Palier (côté moteur)	3	Radial	799	2.39	NORMAL	817	
		Axial	NC				
Palier (côté turbine)	4	Radial	804	3.93	ACCEPTABLE	821	
		Axial	803	4.07	ACCEPTABLE	822	

Observations :



January-25-2015 13:39:57

(Signals SIG0799_APS(ch1))

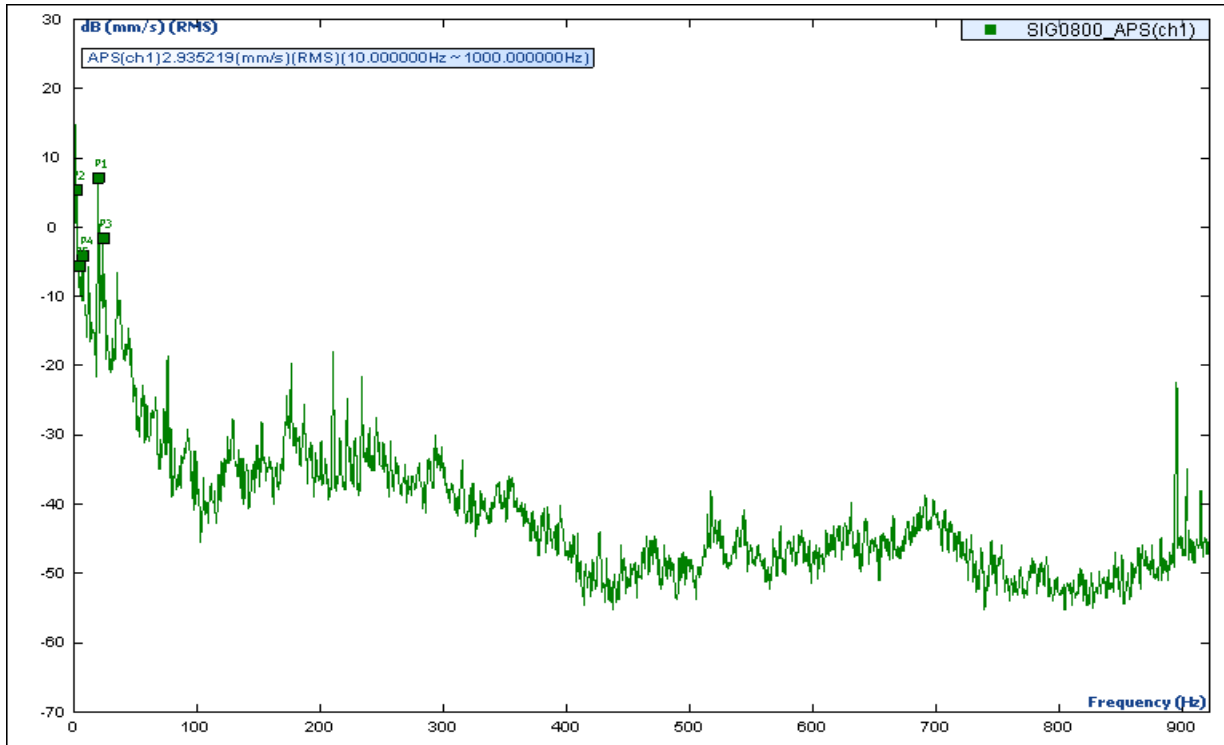


Peak Marker Values

SIG0799_APS(ch1)	X	Y
P1	2.0000 Frequency (Hz)	6.9068 dB (mm/s) (RMS)
P2	19.5000 Frequency (Hz)	6.0743 dB (mm/s) (RMS)
P3	4.0000 Frequency (Hz)	-4.1934 dB (mm/s) (RMS)
P4	5.0000 Frequency (Hz)	-6.7812 dB (mm/s) (RMS)
P5	23.5000 Frequency (Hz)	-6.8178 dB (mm/s) (RMS)



(Signals SIG0800_APS(ch1))

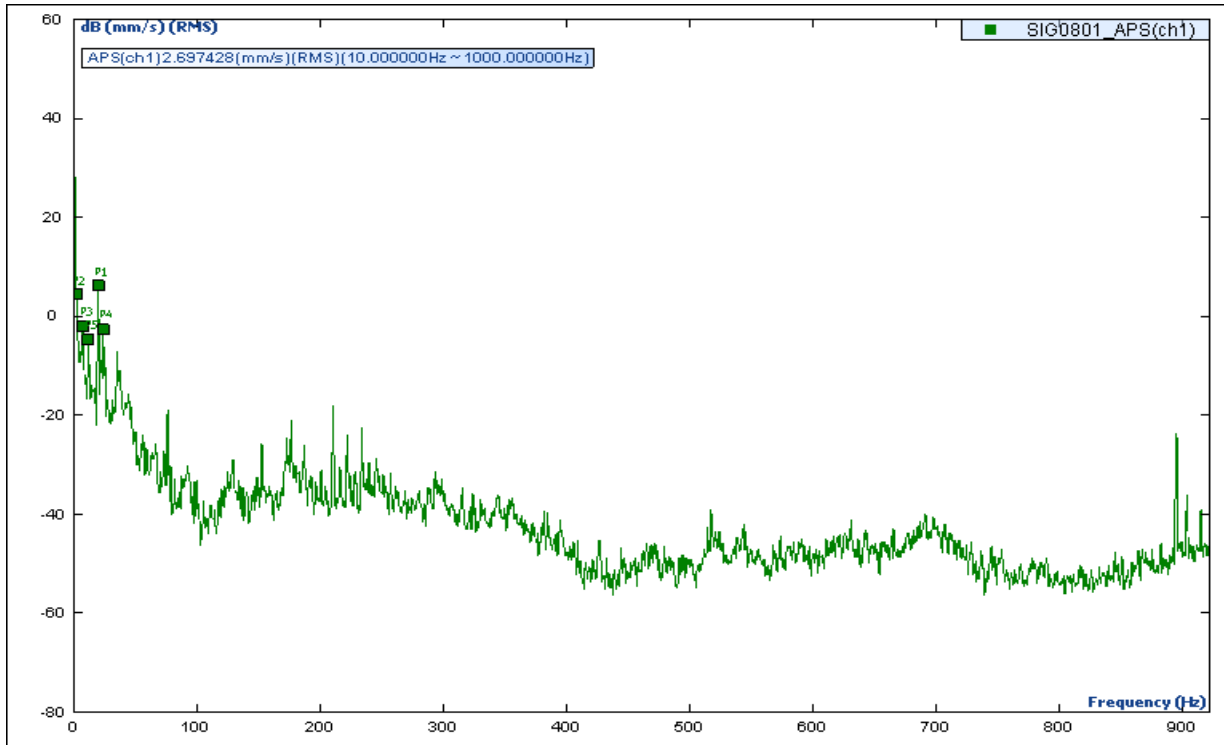


Peak Marker Values

SIG0800_APS(ch1)	X	Y
P1	19.5000 Frequency (Hz)	7.1586 dB (mm/s) (RMS)
P2	2.0000 Frequency (Hz)	5.3834 dB (mm/s) (RMS)
P3	23.5000 Frequency (Hz)	-1.5981 dB (mm/s) (RMS)
P4	7.5000 Frequency (Hz)	-4.0910 dB (mm/s) (RMS)
P5	4.0000 Frequency (Hz)	-5.6465 dB (mm/s) (RMS)



(Signals SIG0801_APS(ch1))

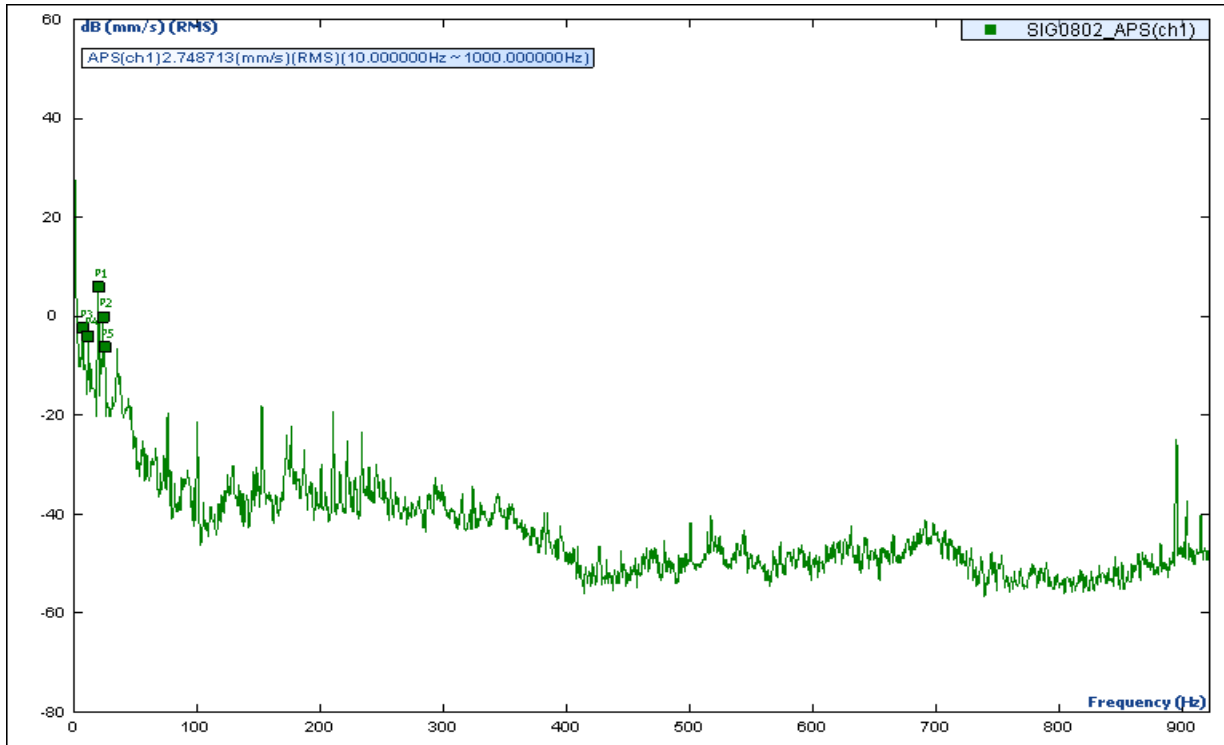


Peak Marker Values

SIG0801_APS(ch1)	X	Y
P1	19.5000 Frequency (Hz)	6.2343 dB (mm/s) (RMS)
P2	2.0000 Frequency (Hz)	4.3845 dB (mm/s) (RMS)
P3	7.5000 Frequency (Hz)	-2.0337 dB (mm/s) (RMS)
P4	23.5000 Frequency (Hz)	-2.6344 dB (mm/s) (RMS)
P5	11.5000 Frequency (Hz)	-4.6991 dB (mm/s) (RMS)



(Signals SIG0802_APS(ch1))

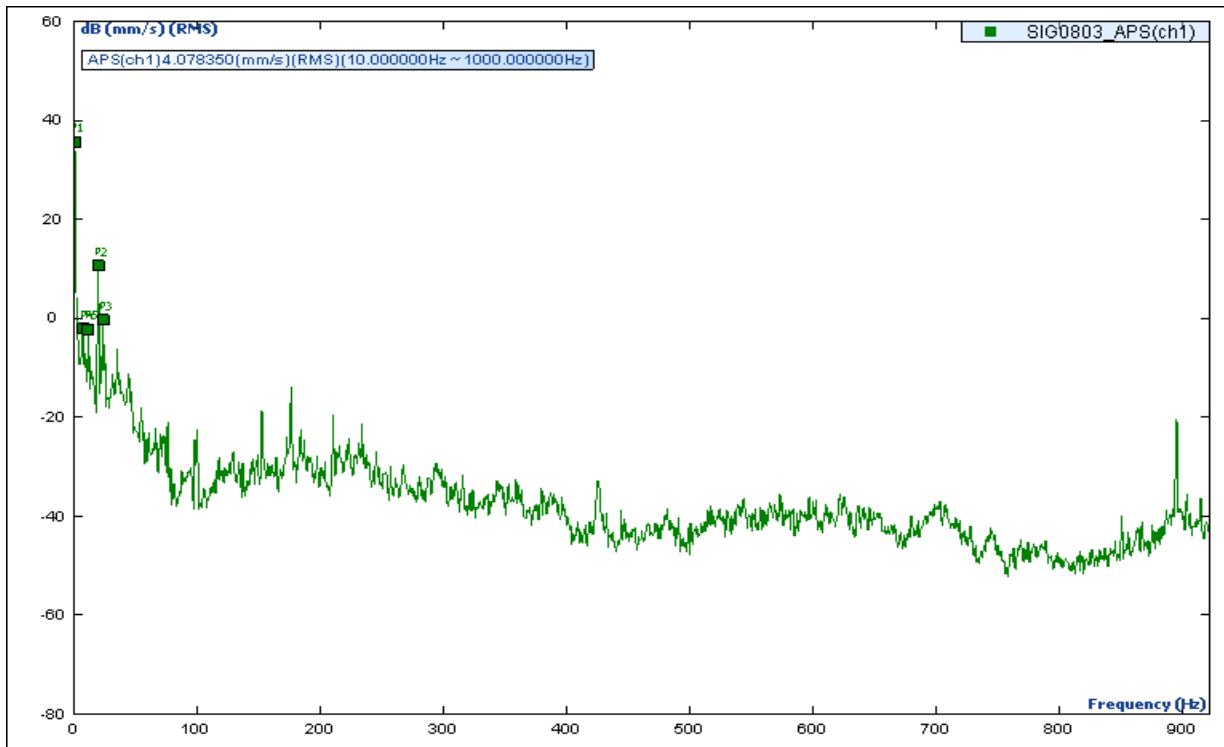


Peak Marker Values

SIG0802_APS(ch1)	X	Y
P1	19.5000 Frequency (Hz)	5.9213 dB (mm/s) (RMS)
P2	23.5000 Frequency (Hz)	-.1654 dB (mm/s) (RMS)
P3	7.5000 Frequency (Hz)	-2.4172 dB (mm/s) (RMS)
P4	11.5000 Frequency (Hz)	-3.9849 dB (mm/s) (RMS)
P5	25.0000 Frequency (Hz)	-6.2957 dB (mm/s) (RMS)



(Signals SIG0803_APS(ch1))

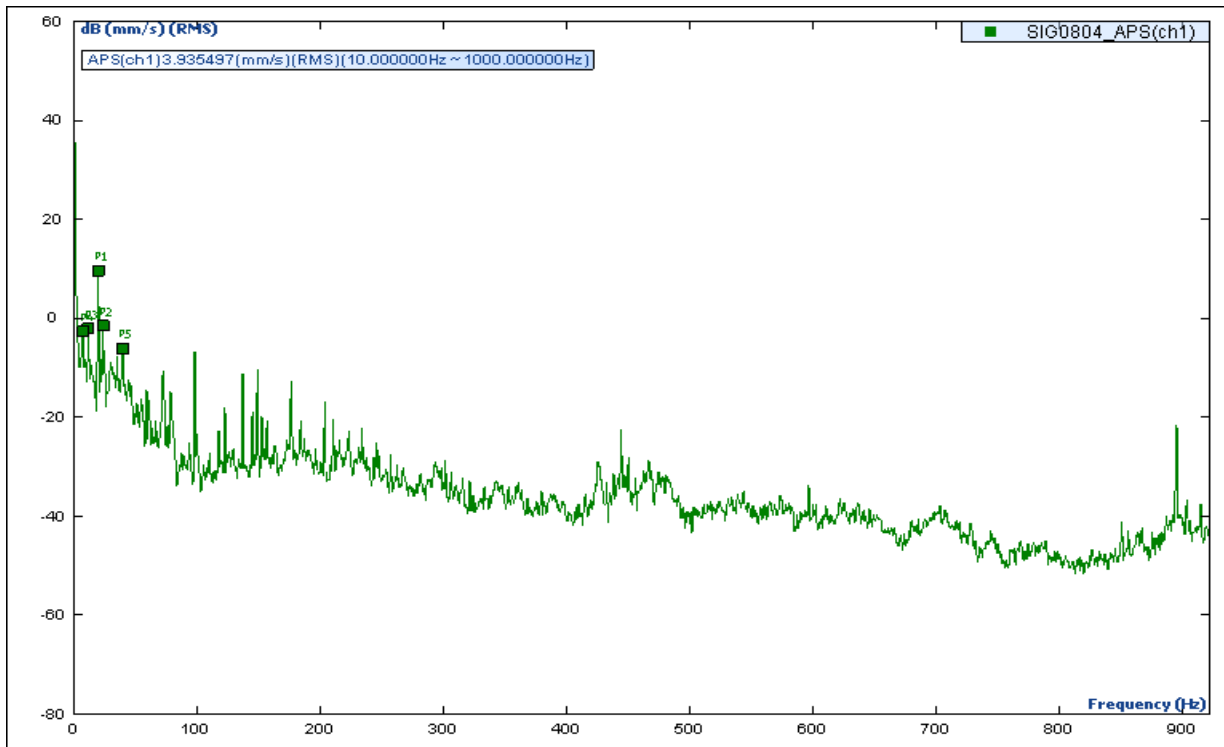


Peak Marker Values

SIG0803_APS(ch1)	X	Y
P1	.5000 Frequency (Hz)	35.7020 dB (mm/s) (RMS)
P2	19.5000 Frequency (Hz)	10.6266 dB (mm/s) (RMS)
P3	23.5000 Frequency (Hz)	-.3466 dB (mm/s) (RMS)
P4	7.5000 Frequency (Hz)	-2.0910 dB (mm/s) (RMS)
P5	11.5000 Frequency (Hz)	-2.1589 dB (mm/s) (RMS)



(Signals SIG0804_APS(ch1))

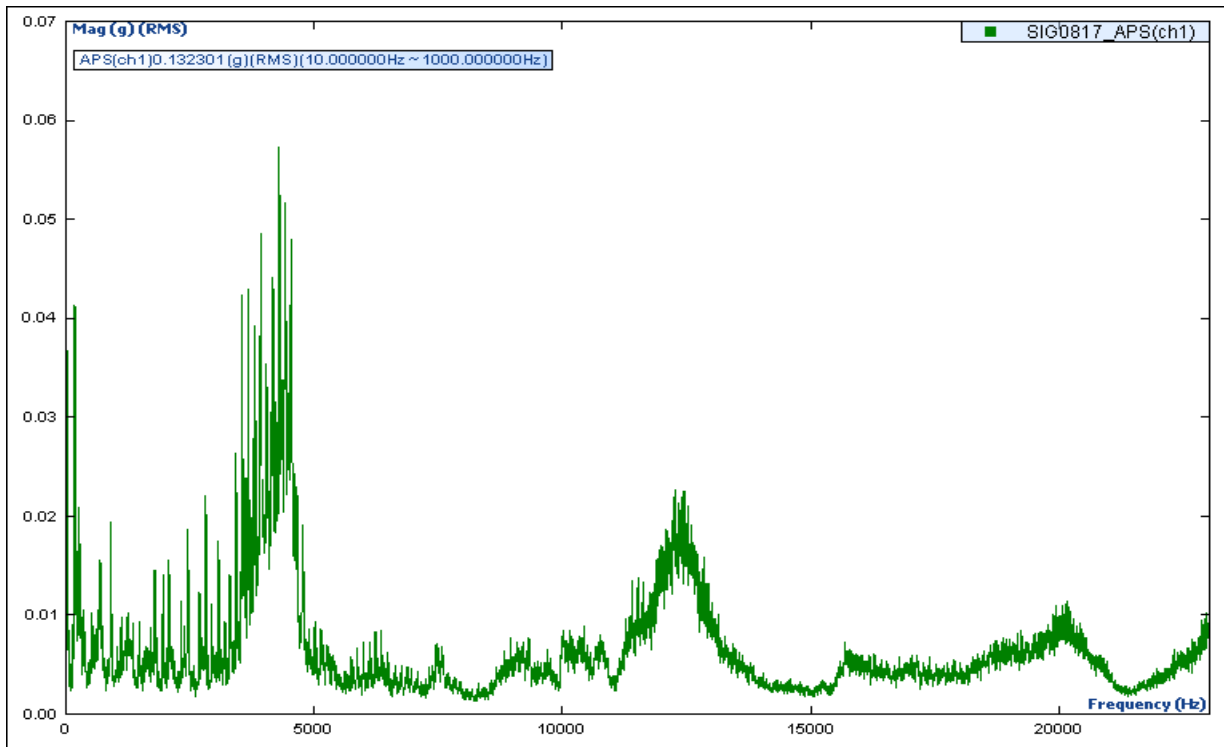


Peak Marker Values

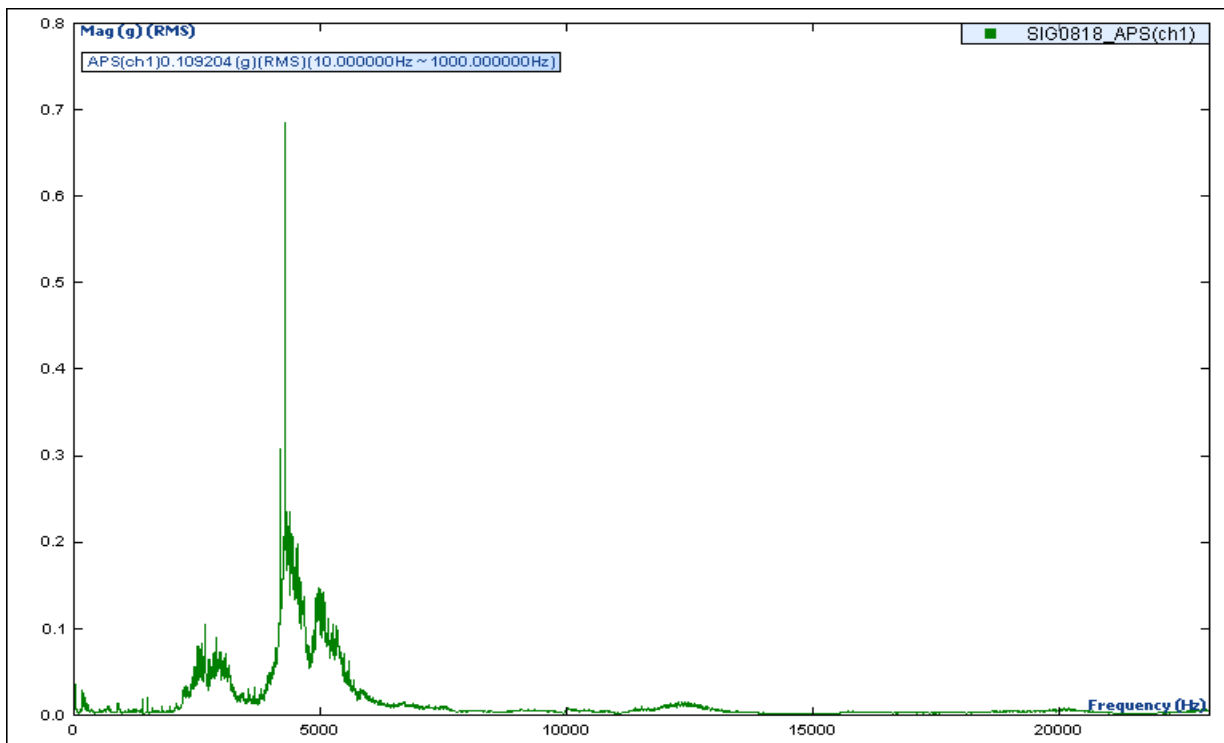
SIG0804_APS(ch1)	X	Y
P1	19.5000 Frequency (Hz)	9.5639 dB (mm/s) (RMS)
P2	23.5000 Frequency (Hz)	-1.5041 dB (mm/s) (RMS)
P3	11.5000 Frequency (Hz)	-2.0736 dB (mm/s) (RMS)
P4	7.5000 Frequency (Hz)	-2.7242 dB (mm/s) (RMS)
P5	39.5000 Frequency (Hz)	-6.1240 dB (mm/s) (RMS)



(Signals SIG0817_APS(ch1))

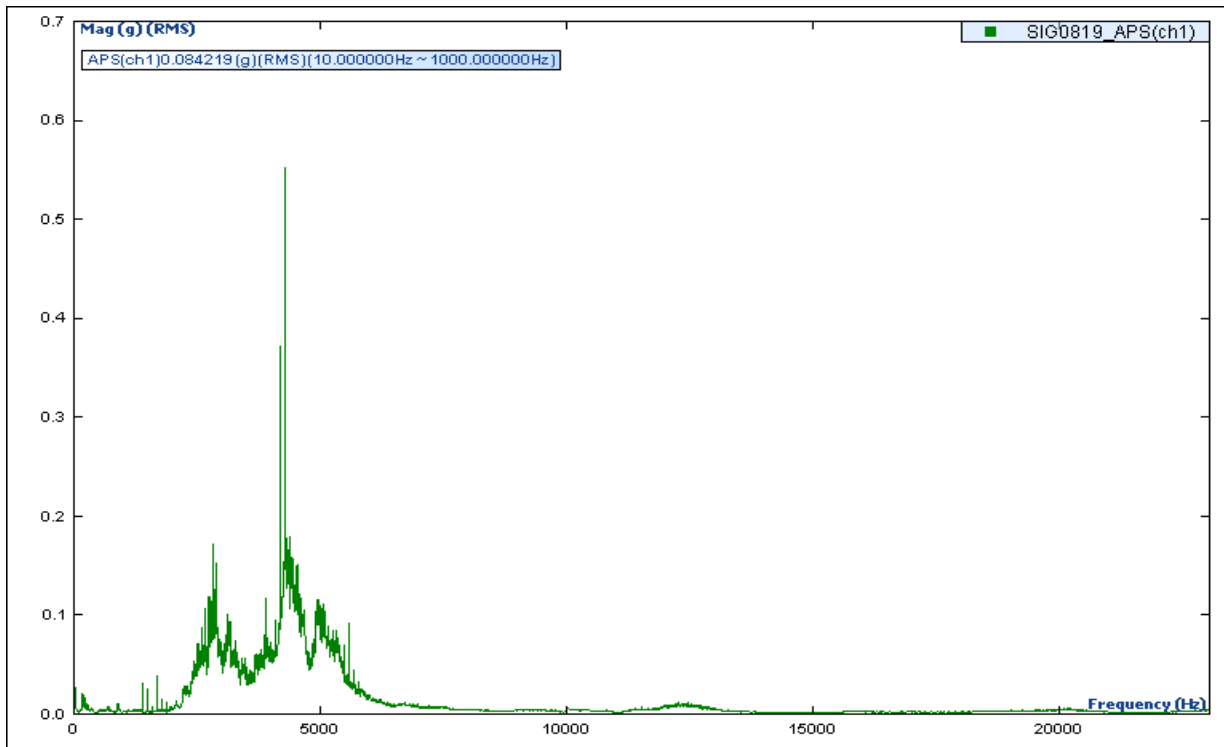


(Signals SIG0818_APS(ch1))

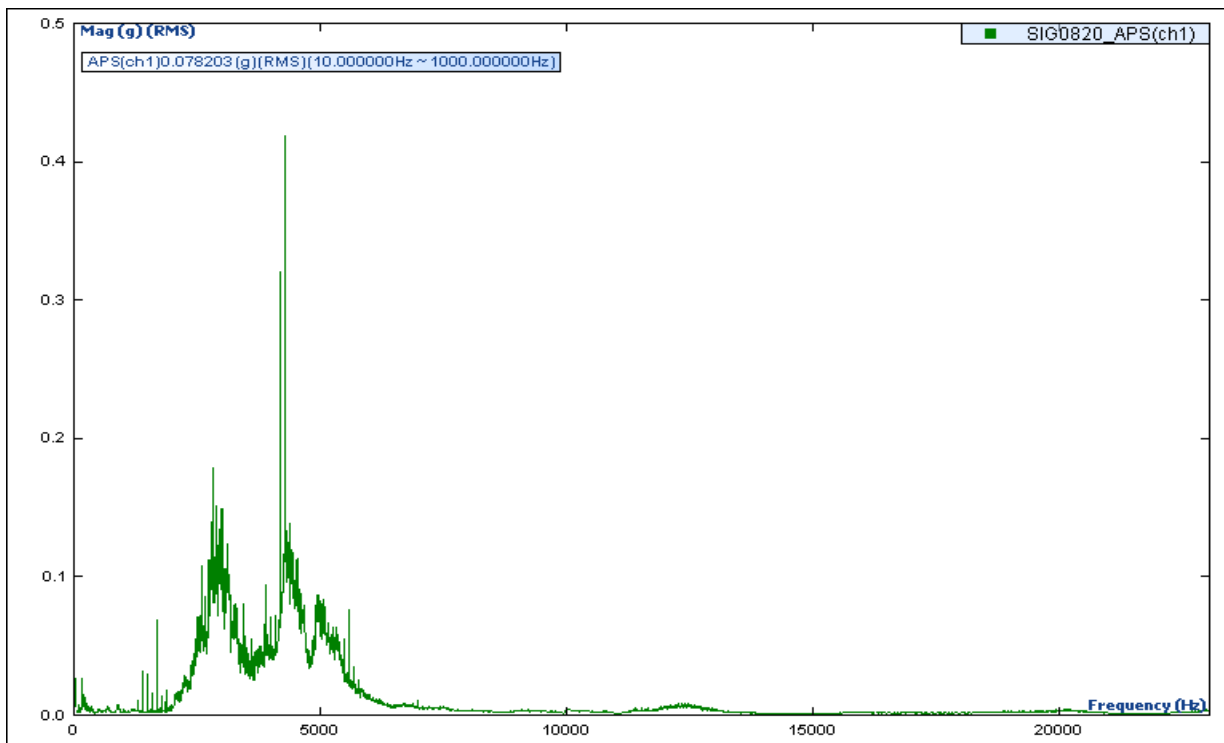




(Signals SIG0819_APS(ch1))

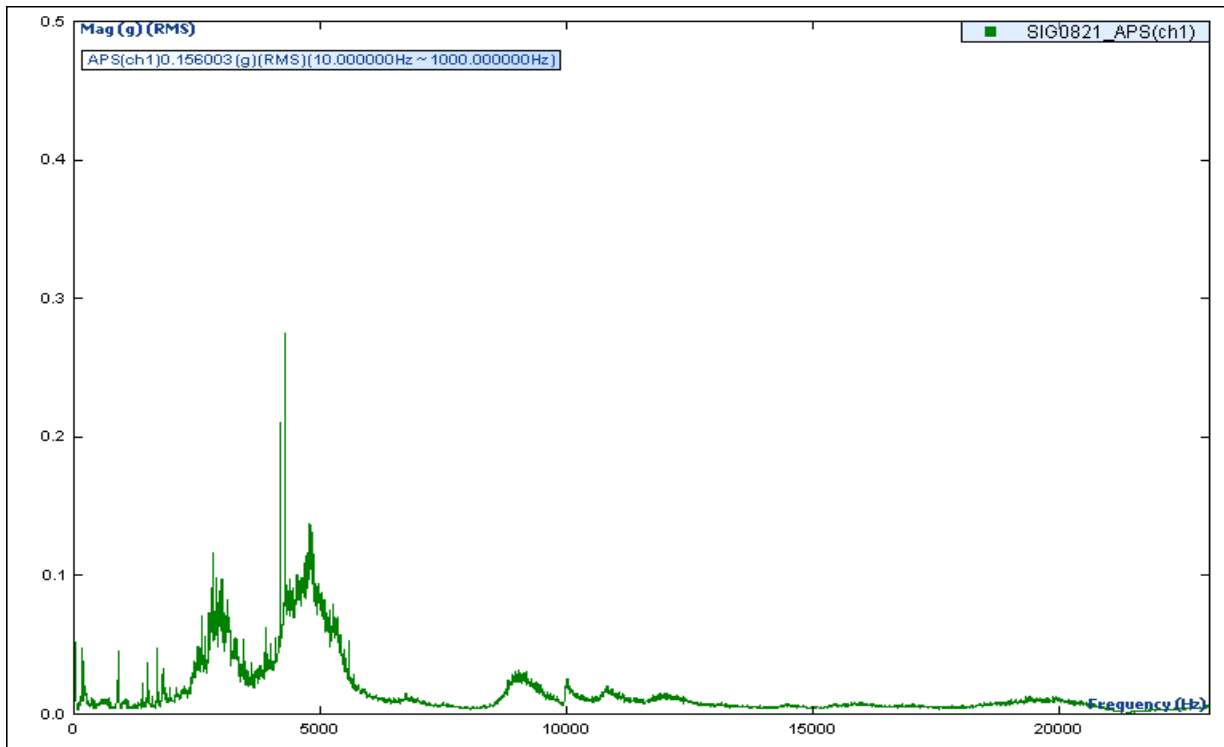


(Signals SIG0820_APS(ch1))

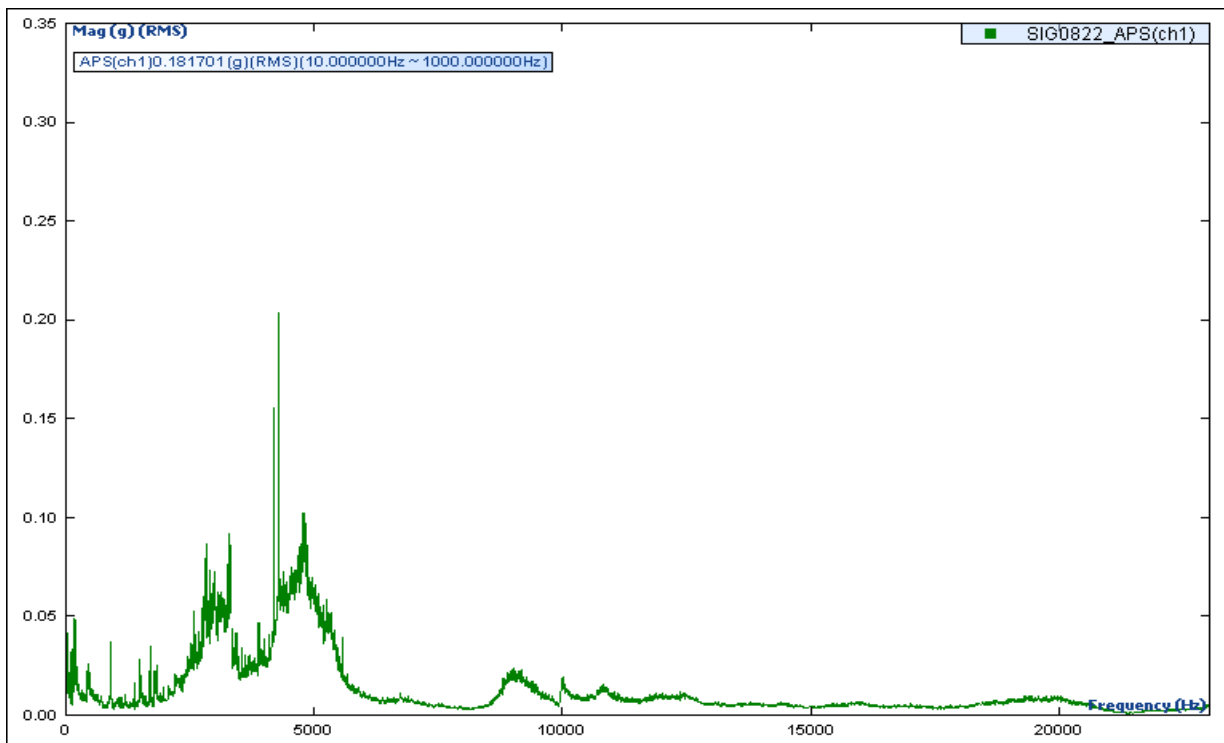




(Signals SIG0821_APS(ch1))



(Signals SIG0822_APS(ch1))





Annexes

- Attestation de compétence
- Certificat de calibration du collecteur
- Certificat de calibration du capteur



ATTESTATION DE STAGE

La Société dBVib CONSULTING, organisme de formation déclaré sous le n° 82 38 02298 38, sise Montée de Malissol - 38200 VIENNE, certifie par la présente que :

- **Monsieur** **Gérald DUMONT**
- **Société** **LA PREDICTIVE, 11 avenue de la paix 80080 AMIENS**

a régulièrement suivi le(s) stage(s) de formation suivant(s), ayant fait l'objet de la convention de formation professionnelle continue n° **110401F**

Nature de la formation	Lieu	Durée	Dates
• Formation à l'utilisation d'un analyseur de vibrations	VIENNE	1 jour	27/04/2011

Fait à VIENNE,
Le 27 avril 2011

dBVib Consulting SARL
Montée de Malissol
38200 VIENNE
Tél : 04 74 16 19 90 - Fax : 04 74 16 19 99
SIRET : 384 854 436 00019

L'expertise « dynamique »

Montée de Malissol - 38200 Vienne - France

Tél : +33 (0)4 74 16 19 90 - Fax : +33 (0)4 74 16 19 99 - Email : contact.cons@dbvib.com

SARL au capital de 23 000€ - Siret: 384 854 436 00019 - RCS VIENNE 384 854 436 - Code APE 742C - TVA intracommunautaire : FR62 384 854 436



4633 Old Ironsides Dr., Suite 304
Santa Clara, CA 95054, USA
Phone: (408) 986-8880
Fax: (408) 834-7818
E-Mail: sales@go-ci.com
Website: www.go-ci.com

CERTIFICATE OF CALIBRATION

Manufacturer:

Crystal Instruments
4699 Old Ironsides Dr., STE.100
Santa Clara, CA 95054
Phone: 408--986-8880

Cal Date: 3/4/2010
Due Date: 3/4/2011
Cal Int: 12 Mo.

Cal Date File: Cal_32834.dat
Cal Report File: Cal_32834.txt

INSTRUMENT/ID

Model: CoCo-80
Description: Dynamic Signal Analyzer

Serial No: 32834

CALIBRATION CONDITIONS

Certified: In Tolerance
Cal'd At: Crystal Instruments
Cal Procedure: CI User's Manual (Version1.0)

Cal Spec: Manufacturer

CALIBRATION EQUIPMENT USED

Serial Number	Manufacturer	Model No.	Calib.Date	Due Date	Traceability Cert.No.
6966078	FLUKE	45	8/14/2009	8/14/2010	6206-1

REMARKS/COMMENTS

Crystal Instruments certifies that all calibration has been performed using standards whose accuracies are traceable to the National Institute of Standards and Technology. Alternatively, accuracies have been derived from accepted values of natural physical constants, or have been derived by the ratio of self-calibration techniques. This certificate applies only to the instrument identified above and shall not be reproduced, except in full, without the specific written approval by the calibration organization issuing this report.

TECHNICIAN: 

QC: 



~ *Calibration Certificate* ~

Per ISO 16063-21

Model Number: 622B01

Serial Number: 29029

Description: ICP® Accelerometer

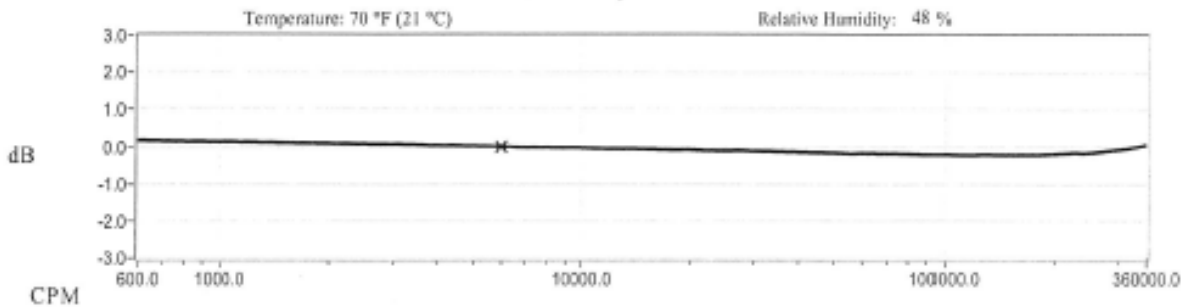
Method: Back-to-Back Comparison (AT401-3)

Manufacturer: IMI

Calibration Data

Sensitivity @ 6000 CPM 99 mV/g Output Bias 10.9 VDC
 (10.1 mV/m/s²) Transverse Sensitivity 3.8 %
 Resonant Frequency 1590 kCPM

Sensitivity Plot



Data Points

Frequency (CPM)	Dev. (%)	Frequency (CPM)	Dev. (%)	Frequency (CPM)	Dev. (%)
600	2.0	18000	-1.0	360000	0.5
900	1.7	30000	-1.4		
1800	1.2	60000	-2.1		
3000	0.8	180000	-2.5		
REF. FREQ.	0.0	300000	-1.0		

Mounting Surface: Stainless Steel w/Silicone Grease Coating Fixture Orientation: Vertical

Acceleration Level (rms): 1.00 g (9.81 m/s²)

The acceleration level may be limited by shaker displacement at low frequencies. If the level cannot be obtained, the calibration system uses the following formula to set the vibration amplitude: Acceleration Level (g) = 0.017 s (freq).

The gravitational constant used for calculations by the calibration system is: 1 g = 9.80665 m/s²

Condition of Unit

As Found: n/a
 As Left: New Unit, In Tolerance

Notes

1. Calibration is NIST Traceable thru Project 822/277342 and PTB Traceable thru Project 1254.
2. This certificate shall not be reproduced, except in full, without written approval from PCB Piezotronics, Inc.
3. Calibration is performed in compliance with ISO 9001, ISO 10012-1, ANSI/NCCL Z540-1-1994 and ISO 17025.
4. See Manufacturer's Specification Sheet for a detailed listing of performance specifications.
5. Measurement uncertainty (95% confidence level with coverage factor of 2) for frequency ranges tested during calibration are as follows: 5-9 Hz; +/- 2.0%, 10-99 Hz; +/- 1.5%, 100-1999 Hz; +/- 1.0%, 2-10 kHz; +/- 2.5%.

Technician: Elton Lewis

Date: 02/24/10



CALIBRATION CERT #1982.02



Headquarters: 3425 Walden Avenue, Depew, NY 14043

Calibration Performed at: 10869 Highway 903, Halifax, NC 27839

TEL: 888-684-0013 - FAX: 716-685-3886 - www.pcb.com

en7 - 131458459.44

