Revision 6

Aircraft radio station – Form CAA 2129

15 February 2002

General

Civil Aviation Authority (CAA) advisory circulars (ACs) contain information about standards, practices, and procedures that the Director has found to be an Acceptable Means of Compliance (AMC) with the associated rule.

Consideration will be given to other methods of compliance that may be presented to the Director. When new standards, practices, or procedures are found to be acceptable they will be added to the appropriate AC.

Purpose

This AC describes an acceptable means of compliance with standards for providing radio station approval level information to aircraft operators.

This material is intended for operators of aircraft and licensed aircraft maintenance engineers carrying out modifications and other maintenance that requires the replacement of form CAA 2129.

Related Rules

This AC relates specifically to Part 43 Subpart B, Part 91 Subpart F, Part 19 Subpart D.

Change Notice

The data in this AC supersedes the information in AC43-10 Revision 5 Appendix A.

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Introduction

Under old legislation operators were required to carry the Ministry of Commerce radio station licence but this requirement has been removed. In accordance with Part 91, equipment of a certain approval level is required for VFR, VFR over water, and IFR operations and it is the operator's responsibility to ensure that the equipment is of the appropriate level for the operation to be conducted.

Part 91, Subpart F details the equipment requirements for aircraft operating under Part 91. Certain types of operation require communication and navigation equipment that meet appropriate specifications. An equipment's specification is commonly associated with that equipment's approval level. To enable flight crew to determine the approval levels of fitted equipment, form CAA 2129 is commonly found in the flight manual.

Part 19, Subpart D mandates that any person operating aircraft under IFR using GPS equipment as a Primary/Sole means of navigation system must have CAA 2129 form endorsed to this effect.

If the communication or navigation equipment in an aircraft is changed, normally as a result of a modification, the person authorised to certify the aircraft release to service should raise a new form CAA 2129 detailing the approval levels of the equipment

Aircraft Radio Station Approval Levels – form CAA 2129

General

This AC contains acceptable practices for the completion of the form CAA 2129 – Aircraft Radio Station Equipment Approval Levels.

Aircraft operators are required to ensure that the aircraft is equipped with the appropriate quantity and level of radio and navigation equipment for the operation being flown. The equipment requirements are detailed in Subpart F of Parts 91, 121, 135, and Part 19 Subpart D for GPS. The rules require that equipment must be approved to—

- Level 1 standards for IFR operations

- Either Level 1 or Level 2 standards for VFR operations

The form CAA 2129 is intended to provide the operator, and pilot, with the approval levels assigned to each item of transmitting and/or receiving equipment installed in the aircraft.

Definitions

For the purpose of this AC the following definition applies:

Approval Level means a number allocated to a particular item of equipment indicating the capabilities and technical specifications met during the approval of the equipment.

Part 91 requirements

The rules no longer require the carriage of a radio licence in each aircraft. However, the Radio communications (Radio) Regulations 1993 still require a radio licence for the operation of a radio.

Rules 91.513, 91.515, and 91.519 detail the communication and navigation equipment required for a particular type of flight operation. It is the operator's responsibility to determine, before the particular type of flight operation is commenced, that the relevant requirements of Parts 91, and any other operational rule, are met for—

- The range of equipment installed

- The equipment approval levels

Requirement for a new CAA 2129

A new form CAA 2129 should be completed whenever⎯

- An aircraft is issued with an initial Airworthiness Certificate

- There is a change to the transmitting and/or receiving equipment installed on the aircraft

Equipment to be included on the form CAA 2129

The form CAA 2129 should list all items of the following types of equipment in Section 2:

- Communication equipment

- Navigation equipment

- Radar equipment

- Identification transmitting and receiving equipment

- Removable and fixed emergency locator transmitters

- Intercom systems

- Cellular telephones

Aircraft entertainment systems that are not transmitters or receivers (cassette tape player systems, CD players) and hand-held communication units are not required to be listed on the form.

Determination of approval levels

Approval levels are set by assessing the equipment's ability to meet the minimum performance standards of the relevant technical specification. The form CAA 337 relating to the modification should include the approval level of the equipment being fitted.

Approval levels are allocated with reference to the appropriate specification as follows:

Level 1
- Federal Aviation Administration TSO

  - Communication equipment C31, C32, C37, or C38 as applicable

  - Navigation equipment C40, C41, C60, C94, and C129 as applicable

- British Civil Aviation Publication (CAP) 208 Class WR, VC, or LA I

- Australian Airborne Radio Navigation Publication No. 50 (Pub 50) Class I; or

Level 2

- CAP 208 Class LA II

- Pub 50 Class L or V

Level 3

- CAP 208 Class LA III or G

Level 4

- The requirements of the Radio-communications (Radio) Regulations 1993

- Compass safe distances determined in accordance with British Standard 3G.100: Part 2, Section 2

For equipment without an approval level allocated, the Civil Aviation Authority should be contacted.

Recording of approval levels

The person authorised to certify the aircraft release to service should record equipment approval levels in Section 2 on form CAA 2129.

Conditions

Where there are conditions associated with the use of the equipment, normally specified in the modification package, these should be listed in Section 4 by the person completing the CAA2129 form.

Following incorporation of an IFR GPS installation in accordance with Part 19, the IFR operational approval granted after flight test evaluation by the CAA will be entered on the CAA 2129 form by the CAA.

Form CAA 2129 — certification

On installation of an approved avionics modification to the aircraft radio station the certifying person should—

- Ensure that the CAA 2129 has been completed

- Certify the form CAA 2129 in Section 3

- Remove the existing form and ensure that the completed new form is placed in the aircraft flight manual

- Forward a duplicate copy of form CAA 2129 to the CAA.

The certification of form CAA 2129 indicates that the form contains the information and approval levels in accordance with the modification package. A person authorised under Part 43 should enter a release-to-service statement for the modification in the aircraft's logbook.

Obtaining form CAA 2129

- CAA web site **http://www.caa.govt.nz**

- CAA Aircraft Certification Unit on request

APPENDIX A

Equipment approval levels

Date last amended: 15 February 2002

Manufacturer	Type	Approval	Level
Audio System			
Aerotalk	AT200, AT200 (Mod 2), AT200S (Mod 3), AT200EX (Mod 4, 4-1), AT200TR (Mod 5, 5-1), AT200G (Mod 6, 6-1), ASE-4H, ASE-4H (Mod 1)	NZATD CTA CT-R3	2
	AT202E		3
Aircraft Radio & Control	F1010A, B	VC329	1
AlliedSignal	KA25		1
	KA134( ):071-2009-XX	C50b	1
	KAA445	C50	1
	KMA20( )	C50b	1
	KMA24	C50a	1
	KMA24H(-50,-55), 24H-70/71	C50b, C50c	1
	KMA26	C50c, C35d	1
	KMA28	C50d, C35d	1
	AS451A, B	C50c	1
Andrea (ARC)	A301-6( ), -12( ), -61( ), -62( ), -64( ), -65	C50b	1
Avtech	1866-1	C50b	1
Baker	M1035( )	C50b	1
Becker	AL3		2
Bell	212 / 077 / 200-1		1
Boeing	65B47511 (B747-200) [1]		1
	285T0001-23, -37 (B767-200) [1]		1
Bose	ANC		3
Carter Audio System	CE806D-35		2
	CE704D-15		3
Collins	346A-1, B-1 Isolation Amps	Pub 50	1
	356F( )	C50	1
	387C-4 Audio Control	C50	1
	AUD-250H Audio Control	C50b	1
	AMR-251H Audio Control	C50b	1
	ALT-50A	C87	1

Manufacturer	Type	Approval	Level
	ALT-50/860F-2	C87c	1
	AMR-350H Audio Control	C50b	1
	C1611D / AIC		3
Concept	Softcom ATC-2, -4, -6		3
Dacom Electronics	ICS-41		3
David Clark	Isocom [2]		2
Flightcom	403, 403d, 403mc		3
	Flightcom Iigx		3
Gables	G3425	C50b	1
Garmin	GMA-340	C50c, C35c	1
Hughes	1167014 (B747-400) [1]		1
Multitech	Airmarc ACP188	Pub 50	2
Narco	CP125, 126, 127, 135, 136	C50b	1
NAT	AMS42 / AMS44 [3]	CAA UK	3
	AMS43H		3
	AMS50	C50c (CL 2 Audio), C35d(CL A)	1
	AA12-001		3
	AA34, AA80, AA83, AA85, AA90		3
	AA92H-407		3
	AA95 [4]	UK MIS00002	1
	AA95-453		3
	AA95-750		3
	ACS300		3
PS Eng.	PM501		3
	PM1000TSO	C50c	1
	PM1000II, PM2000, PM3000, PM4000/4000-IRS		3
	PMA6000, 6000M, 7000S, 7000MS	C50c	1
	PCD7100-I/P/EX	C50c	1
Racal	B692		4
Sigma Tek	F1010A, B	C50b	1
Sigtronics	SPA400, SPA600	C50b	1
	TranscomII, SPO-22, 42, 62		3
Softcom	ATC-2, ATC-4, -6P		3
Telex	PC4 (ZK-MBO)		3

Manufacturer	Type	Approval	Level
	TC200		3
Terra	TMA230D	Pub 50	2
UPS Aviation	SL-10/-10M/-10MS	C50c, C35c	1
	SL-15/-15M/-15D/-15MD	C50c, C35c	1

Notes:
1. Flight I / Phone
2. An alternative means must be provided for the operation of the R / T communications equipment in the event of a failure of the David Clark ISOCOM I / C
3. CAA Approved <5700 kg police work
4. Police / Emergency only

Manufacturer	Type	Approval	Level
Marker / Audio			
AlliedSignal	KMA24	C50a / 35d	1
	KMA20		1
ARC	R402A		1
Collins	AMR350	C50b / 35d	1
	51Z4	VC159	1
Lightcraft	BR-3	LA142	3
Narco	CP25 series		1
	CP135, 136, 136T	C50b / 35d	1
	MBT / R	Pub 50	2
PS Engineering	PMA6000M	C50c/C35d	1
Terra	Terra TMA230 series	Pub 50	2
Public Address			
AEM	COM-70		2
AlliedSignal	AMA-10A (PA)		1
	CNA-2( ) Audio Sel		1
Collins	346D-1, -2		1
K D James	J91PA		3
HF Communications			
Aircom	10 / 60		2
	10 / 100	Pub 50	2
	SGC230 [1]	MCA / GAD / 56	3
AlliedSignal	KHF950	Pub 50	1
	KHF990	VC393	1
Ambassador	870-SSB		3
Barrett	F24	Pub 50	1
	B24		3

Manufacturer	Type	Approval	Level
	SB200RC		3
	530		3
Codan	1000	Pub 50	2
	2000	Pub 50	1
	7727		3
	8528		3
	SGC230 [2]	HQ101	3
Collins	618T, 628T series	C31 / C32	1
	HF-200, -220, -230	C31c / 32c	1
	HFS700	C31c / 32c	1
HF Communication Ltd	SGC SG-2000	Pub 50	2
Kenwood	TS50S	CASO 7	3
	TS440S	CASO 7	3
KTR953	C32c		1
Sunair	ASB60		1
	ASB100, A		1
	ASB125		1
	ASB130		1
	ASB500		1
	ASB850		1
Yaesu	FT747GX		3
Bendix/King	KHF-950	C31, C32	1
Notes:	*1. Tuner used with SSB100* *2. Tuner used with Codan HF1000*		
VHF Communications			
AlliedSignal	KLX-135 [4]	C37d / 38d	1
	KFM985		3
	KTR900, KTR9000	C37 / 38	1
	KTR905, KTR908	C37b / 38b	1
	KY92	C37b / 38b	1
	KY95, 95E	LA71	1
	KY96A / KY97A	C37c / 37c	1
	KY195	C37b / 38b	1
	KY195B, BE	LA195	1
	KY196( )	C37b / 38b	1

Manufacturer	Type	Approval	Level
	KY196A	C37c / 38c	1
	KY196E	Pub 50	1
	KY197A	C37c / 38c	1
	KY197E	Pub 50	1
	KA93a, 94a	C37c/C38c	1
	RTA43, 44A	C37b / 38b	1
	RT241A	C37b / 38b	1
ARC	ARC-45 (RT295B)		3
	RT524A	Pub 50	2
AWA	VC10 series	Pub 50	2
	TR235A [1]		3
Baklan	Baklan 5	LA301034	3
Becker	AR400	Pub 50	1
	AR2008, 2008 / 25B	Pub 50	2
	AR2010	Pub 50	1
	AR3201	C37c / 38c	1
	AR4201	WR-01019	1
	Comm 2000	C37b/38b	1
Collins	VHF-20A, -20B	C37b / 38b	1
	VHF-21A, -21B, -22A, -22B	C37c / 38c	1
	VHF250	C37b / 38b	1
	VHF 251, E, S	C37b / 38b	1
	VHF 253, 253S	C37b / 38b	1
	17L-4, -7		1
	17L-8 (TX)	C37	1
	51X-2 (RX)	C38	1
	618M-1, -2	C37 / 38	1
	618M-3	C37b / 38b	1
	VHF700	C37b / 38b	1
	VHF900	C37d / 38d	1
Davis Electronics (Whangarei)	AV335 'Condor 2'		4
Delcom	Air 960 (GW2960-AIR)	LA3-01000	3
Dittel	ATR720, A, B, C, M	LA301	1
	FSG12B		3

Manufacturer	Type	Approval	Level
	FSG15 / 16		2
	FSG40S		2
	FSG50 / 60 / 60M		1
	FSG70	C37c / 38c	1
	FSG71M		1
Edo-Aire	RT551, A	LA1-00240	1
Exicom	835	E4862	3
Garmin	GNC250, 300, 250XL	C37d/38d	1
Geneve	Alpha / 100		2
ICOM	IC-A2, A3, A20, A21, A22		3
	IC-200 [2]		2
	IC-A200	Pub 50'V'	2
Kenwood	TK-709 [3]		4
Microair	720 [7]	Pub 50	2
	760 [8]	Pub 50	2
Narco	Com10, A		2
	Com11 A (50 kHz)	LA199	1
	Com11 B (25 kHz)	LA199	1
	Mk 12, 12A (50 kHz)	LA84	1
	Com111	C38	1
	Com111B	C37b / 38b	1
	Com120	C37b / 38b	1
	Com810 / 811	C37b / 38b	1
	HT800 / 830		3 / G
NAT	NPX 138		4
	NT150		4
Radair	360	Pub 50	2
	10B	Pub 50	2
RCA	AVC110, A		1
Tait	Miniphone [5]		3
	T172 [6]		2
	T373		2
Terra	TPX720	CASA Level V (Special conditions) UK CAA L3	3

Manufacturer	Type	Approval	Level
	TX760D	Pub 50	2
TKM	(Michel) MX11	C37d / 38d	1
VAL	COM760	C37c / C38c	1
WIN	WIN747		4
IIMorrow	Apollo SL40, SL60, GX60/65	C37d / C38d	1

Notes:
1. *10 Ch Mod RJH / MG / RAD88 - CH650*
2. *CASA approval VFR*
3. *VHF FM*
4. *GPS portion Level 3*
5. *Single channel*
6. *Not helicopters*
7. *CASA approval VFR, not to be used as a required comm above 10,000'*
8. *CASA approval VFR; Limitations: not to be used as a required comm above 25,000' and must be installed in a controlled temperature location*

	SELCAL		
Motorola	NA-126, -134, -135	VC233	1
	NA-137-714A, -138-714A	VC390	1

	ACARS		
Collins	DLM709B	ARINC	1
Teledyne	2229385	ARINC	1

	Non-aeronautical Communications		
AWA	RT85		4
Kenwood	TK-705D		4
Motorola	Syntrx	RFS	4
	MCX 100	RFS	4
Plessey	VF31	RFS	4
Pye	P125AM		4
Standard	GX-2310S Marine Com		4
Tait	T162C, T496, T498, T500, T730, T700		4
	T2020 series		4
Uniden	MC535		4

	Navigation / Communications		
Aire Science	RT563A	LA259	1
AlliedSignal	KI203 / 204	Pub 50	1
	KLX135, A [2]	C37d / 38d	1
	KX99		3
	KX125	C37c / 38c / 36e / 40c	1

Manufacturer	Type	Approval	Level
	KX145 Com	Pub 50	2
	KX145 Nav	LA247	1
	KX155, 165	C37b	1
	KX170 / KI201, 211B / KA38	LA180	1
	KX170A / KI201C, 211C / KA39	LA180	1
	KX170B, 170BE / KI201C, 211C, 212, 213, 214 / KA39	LA180	1
	KX175, B, BE / KI201C, 211C, 214, 525 / KPI553B / KA39	LA180	1
	KN72	C40a, 36c	1
	KN53	C40a, C36c, 34c	1
	KN40	C40, C34e, 66c,36e	1
	KNS80		1
ARC	RT308C (COM / VOR)	LA196	1
	RT308C (ILS)	Pub 50	2
	RT328A, C, D, T / IN514B	LA196	1
	RT385A/IN385A, AC/IN386A, AC/IN485, AC/IN486AC	LA264	1
	422A srs (RT432A, R442A)		1
	RT485A, B	LA264	1
	RT508A / IN514R		2
	RT528A, 528E / IN514R, 525A / P528A / 41260 [1]	LA196	1
	RT516A	Pub50 / LA101	2
Garmin	GNC250 [2]	C37d / 38d	1
Genave	Alpha 500	Pub 50	2
	GA / 1000	Pub 50	2
Narco	ESCORT II [3]	LA328 / V10(K)	2
	ESCORT 110		2
	Mark 8		2
	Mark 12, A, B		2
	Mark 12, A + VOA4, 5 [4]	LA84	1
	Mark 12, 12( ) A, B + VOA( ) 8, 9	LA84	1
	Mark 12D / ID824, 825	C37/38c/36c/40b	1
	Mark 12E	C37/38c/36c/40b	1
	Mark 24		1

Manufacturer	Type	Approval	Level
	VOA8, 9 [5]		1
	VOA8, 9		2
TKM	(Michel) MX170, B	C37d, C38d	1
	(Michel) MX300	LA333	1
Notes:	1. *Cessna 313A* 2. *GPS portion Level 3* 3. *1 function level 3 if no other nav / com* 4. *Chassis no. CN 63C 3 and above* 5. *Converter with Export SB E-5*		
Navigation			
ARC	R319G / B3174	Pub 50	1
AlliedSignal	KI201 (ILS)	LA104	1
	KI201 / C (VOR)	LA104	1
	KI202 VOR / LOC Ind	Pub 50	1
	KI203, 204, 206,	C36c / 40a	1
	KI207, 226, 229, 209: 066-3056-01	C40a	1
	KI267:066-3052-00	C40a	1
	KI208:066-3056-00	C36c / 40a	1
	KI208:066-3056-01	C36c / 40a	1
	KI206, 207 VOR / LOC / GS Ind	Pub 50	1
	KI203, 208, 209 VOR / LOC Conv / Ind	Pub 50	1
	KI204 VOR / LOC Conv / Ind & GS Ind	Pub 50	1
	KI210	LA44	1
	KI211	LA104	1
	KI214	LA180	1
	KI229 (RMI)	C40a	1
	KI525, A		1
	KNR630( )	C36c40a	1
	KN53 Rx	C36c / 40a	1
	KN72 Conv.	Pub 50	1
	KN74 (VOR / LOC function only)	C36c / 40a	1
	KN77	C36c / 40a	1
	KNI 500( )	C34b/35c/36b/40a	1
	KNI 520( )	C34b/36b/40a	1
	KNR600, 600A, 601, 660, 660A, 661	VC210	1
	KNR630	VC280 / 36c	1

Manufacturer	Type	Approval	Level
	KNR634	C36c	1
	KNS80	LA277	1
	KNS81 (VOR / LOC / G / S)	Pub 50	1
	RVA-35A	C36C	1
	RVA-36A	C35d / C40a	1
	RIA-35A	VC384	1
	RNA34A	C36c / 40a	1
	RN222AE		1
	IN831 (HSI)		1
Becker	NR3301	Pub 50	1
Century	NSD 360A Ind		1
Collins	VIR-30A	Pub 50	1
	VIR-31	Pub 50	1
	VIR-32	C36c / 40b	1
	VIR350 / VIR351 / IND351 / IND350	C36c / 40a	1
	51RV-1	C36 / 40	1
	51RV2( ) (Localiser)	C36b	1
	51RV-4( )	C36c / 40a	1
	ILS700	VC397	1
	VOR700	C40a	1
Narco	NAV10, NAV 11, NAV 12 [1]		1
	NAV 100 / VOA110	C40a, 40	1
	NAV 100 / VOA 100	C40a, 40	1
	NAV 111, 112	C36	1
	NAV 121	C36c	1
	NAV 122, A	C36c	1
	NAV825 / ID825	Pub 50 / C40a	1
	NS800	LA330	3
RCA	AVN210A		1
	AVN211		1
Notes:	*1. 10 & 11 only if 50 kHz readout*		
Glideslope			
AlliedSignal	KGM691	VC211	1
	KI211	LA104	1
	KI212 / 213 / 214	Pub 50	2

Manufacturer	Type	Approval	Level
	KN73, KN75		1
ARC	R443A, B		1
	R543B		1
Collins	GLS350		1
	51RV-1	C34	1
	51RV-2	VC39	1
	ILS700	C34c	1
Narco	UGR2, A		1
	UGR3		1
	Nav124		1
Marker			
AlliedSignal	KA35A (Light Assembly)		1
	KI203, 204	C35d	1
	KMA26	C35d	1
	KMR675( )	C35	1
	KR21( )	C35c	1
	KR22	Pub 50	2
ARC	R402A, B	Pub 50	1
	R502A, B	Pub 50	2
Arret	IM692	ZK-FOX	3
Collins	51Z-1	Pub 50	1
	51Z-2 Ser, -3, -4	C35	1
	51Z-6	Pub 50	1
	MKR350, -351	C35d	1
	VOR700	C35d	1
	VIR32	C35d	1
Narco	CP135, 136, 136T	C35d	1
	MBT-( ):12, 24	LA32	1
	MKR101, 101R, 101PL	C35d	1
Piper	PM1	LA109	2
ADF			
AlliedSignal	T12B, C	LA92	2
	T12B, C	LA92	2
	T12B, C, D [1]	LA92	1
	DF2071A / IN2072A	Pub 50	1

Manufacturer	Type	Approval	Level
	DFA70( )	C41a	1
	DFA-74	Pub 50	1
	DFA-75A	C41c	1
	KDF800	C41b	1
	KDF805, 806	C41c	1
	KR80	LA134	2
	KR80 [2]	LA134	1
	KR85 / KI225 / KA42, A, B	C41b	1
	KR86	LA229	2
	KR87 / KI227, 228, 229 / KA44	C41c	1
	551C	Pub 50	1
ARC	21A	Pub 50	1
	R318A, G	C41b	1
	R324A	C41b	1
	R346A, B	C41b	1
	R446A	C41b	1
	R521A, A-1	LA81	2
	R521B	LA121	1
	R521E	LA115	1
	R546A	Pub 50	2
	R546E	C41b	1
	IN324A, B, C	Pub 50	1
	IN346A, B, C, D	Pub 50	1
	IN501A	Pub 50	2
	IN521A, B	Pub 50	2
	IN546A	Pub 50	1
ARK	ARK-15M (111-7A)	LA301038	3
Collins	ADF-60A, B	Pub 50	1
	ADF650, A	C41c	1
	DF203(51Y-4, 4A)	C41	1
	DF206(51Y-7)	C41b	1
	ADF700	C41c	1
Kett	Polaris S	LA150	2
Motorola	T12B	LA74	2
	T12B [3]	LA74	1

Manufacturer	Type	Approval	Level
Narco	ADF31	LA114	3
	ADF31A	Pub 50	2
	ADF 31-UK, 31-AB	LA114	1
	ADF140	C41a	1
	ADF141/IND101	C41c	1
	PDF35	LA214	3
Notes:	*1. B & C with tuning meter & BFO* *2. With tuning meter & BFO & s / n to 2200 marked SB KR80 8.4.66* *3. With BFO and tuning meter*		
RMI			
AlliedSignal	KI 229, KI 226, KI 525A, KNI 581, KNI 582, IN831( )	C6c	1
Collins	331A-3G	C6	1
	RMI 30	Pub 50	1
	RMI 36	C6c	1
Omega			
Can. Marc.	CMA771, 734	C94a	1
Global	GNS X	C94a	1
Wolfsberg	GNS500A	C94a	1
DME			
AlliedSignal	KDM705	C66a	1
	KDM706	C66a	1
	KN62, A	LA279	1
	KN63 / KDI572 / KDI573, B	C66a	1
	KN64	LA279	1
	KN65( )	C66a	1
	DMA-37A	C66a	1
AWA	VAN-X	Pub 50	1
Collins	DME-40	C66a	1
	DME-42	C66b	1
	DME451	C66a	1
	DME700	C66a	1
	860E-1, -2 (126 channels)	C66	1
	860E-3, -4, -4A, -5	C66a	1
	IND 339F-12	C66a	1
Narco	DME190, 195	C66a	1

Manufacturer	Type	Approval	Level
	DME890	LA294	1
Transponder			
ARC	RT359A / RT459A / RT859A	LA234	1
AlliedSignal	KXP750( )	C74	1
	KXP755( ), KXP756	C74c	1
	KT71, KT76c	C74c	1
	KT76, 78	C74b	1
	KT76A	LA208	1
	KT78A (15000')	Pub 50	1
	KT79( )	C74c	1
	KA60	C74c	1
	TR-421B	C74c	1
	TPR710, A, 720	Pub 50	1
Becker	ATC 2000	Pub 50	1
	ATC 2000/R-(2)	C74c	1
Collins	TDR-90	C74c	1
	TDR950	C74c	1
	621A-3	C74	1
	621A-6( )	C74c	1
	TPR-710, A	Pub 50, VC394	1
Genave	Beta / 5000	Pub 50	1
Narco	AT6-A	LA174	1
	AT50	C74	1
	AT50A	C74a	1
	AT150	C74c	1
RCA (Sperry)	AVQ95	C74b	1
Terra	TRT250	C74c	1
UPS	SL 70	C74c	1
Garmin	GTX-320, -320A	C74b	1
	GTX-327	C74	

Mode S Transponder			
Honeywell	4061400 ( )	C112	1
Allied Signal	KT-70, -71+, -73+, -67A	C112	1
Collins	TDR-94,-94D	C112 cl 2A	1

Manufacturer	Type	Approval	Level
TCAS I			
AlliedSignal CAS	66A [TPU 66A:066-01145-0101]	C118	1
TCAS II			
Collins	TTC920	C119	1
	TTR920	C119a	1
Honeywell	4066010( )	C119a	1
TCAD			
Ryan	ATS8000		3
	ATS9000		3
	TCAD 9900( )		3
Encoding Altimeter			
IIMorrow	Apollo 428-2003	C88a	1
ACK	A30	C88a	1
ARC	EA401A	C88	1
Aerosinic	101635	C88a	1
AlliedSignal	KE127		1
	KEA129 / 130A	C10b / 88	1
	KEA346	C10b / 88	1
Ameri-AlliedSignal	AK-350, AK-35035, -35040, -35050, -35060, -35080	C88a	1
Evergreen Systems International	580-( )	C88	1
Narco	AR500	C88	1
	AR850	C88a	1
Shadin	8800T	C88a	1
Terra	AT3000	C88a	1
Transcal Industries (TCI)	DI( )-P2-T [TCI -]	C88	1
	SSD120, SSD-RS232	C88a	1
	LE50-18		1
United Instruments	5035, 5500( ), 5035P2-P43, -P44, -P45, -P46	C88	1
Radio Altimeter			
AlliedSignal	KRA10, A / KI250	Pub50	2
	KRA405 / KNI415 / KNI416	C87	1
	ALA-51A, -52A	C87	1
Bonzer	TRN71	LA235	3

Manufacturer	Type	Approval	Level
	MK10X RT		3
Collins	AL101A(860 F-4)	C87	1
	AL101(860 F-1)	C87	1
	ALT-50/860F2	C87	1
	ALT-50A	C87	1
	ALT-55B	VC-00292, Pub50, C87	1
	ALT556	C87	1
	LRA700	C87	1
Sperry	AA-215, AA(RT)-300	VC243	1
TRT	AHV8( )	C87	1
	ERI530 (LRRA)	C87	1
Weather Radar			
AlliedSignal	RDR2000	C63c	1
	RDR1E( )	C63	1
	RDR4A	C63b	1
	RDR130, 140, 150, 1100, 1200, 1300	C63b	1
	RDR160	Pub 50	1
	RDS81	Pub 50	1
	RDS82	C63b	1
BF Goodrich	WX-8, -9	LA311	3
	WX-10, -11	LA320	1
Collins	RDR4A		1
	WXR270	Pub 50	1
	WXR300	VC-00338	1
	WXR700C / X, WRT701X	C63b	1
Narco	KWX56	C63b	1
	RDS81	VC428	1
RCA	AVQ20	C63	1
Sperry	Primus 300SL	C63a	1
	Primus 800	C63b	1
Thunderstorm Detection			
Goodrich	WX1000 BF	C110, VC453	1
	WX 900	C110b	1
Area Navigation			

Manufacturer	Type	Approval	Level
AlliedSignal	KA90	C60b	1
Universal	UNS 1B	C115b	1
Satellite Navigation			
IIMorrow	Apollo 360		3
	Apollo Flybuddy 819/820 GPS		3
	2001GPS	C129(A1)	1
	2001TSO (+ sensor)	C129(A1)	1
	Apollo 2101	C129(A1,B1,C1) C115b, 8110.60	1
	Apollo SL 50, SL 60	C129(A2)	1
	GX50/60/65	C129a	1
AlliedSignal	KLN35A		3
	KLN89B	C129(A1)	1
	KLN90		3
	KLN90A	C129(A2)	1
	KLN90B, KLN-94, -900	C129(A1)	1
	KA-90(HIS/GPS Interface Adapter)	C60b	1
	KLX-135, A [1]		3
Filser	LX5000		3
Garmin	GPS55		3
	GPS95		3
	GPS100		3
	GPS150		3
	GPS155	C129(A1)	1
	GPS165	C129(A1)	1
	GNC 300 XL	C129a A1	1
	GNC 420	C129aA1	1
	GNS 430	C129aA1	1
	GNS 530	C129aA1	1
	GPS 500	C129aA1	1
	GPS 400	C129aA1	1
	GPS III		3
	GA56	C129(A1)	1
	GNC 250		3
	GNC 250XL		3

Manufacturer	Type	Approval	Level
	GMC 300	C129a	1
	GPSMAP 105		3
Honeywell	GNSSU HG2021GC01	C129(C3)	1
	HT9000	C129(A1) N8110.60	1
	HT9100	C129(A1) N8110.60	1
Magellan	Skynav 5000		3
	EC-10X		3
Mid-Continent	MD41- ( ) [2]	C129	1
Skyforce	GPS2		3
	Skymap II, SkymapIIIC		3
	Color Skymap		3
	Color Tracker		3
Star	Star 5000		3
Trimble [3]	Transpak		3
	TNL1000, 2000GPS, 2000A		3
	TNL-2000 Approach	C129(A1)	1
	TNL-2000T / 2100T [4]	C129(A2)	1
	TNL-2101	C129(A1)	1
	TNL-3000T / 3100T [5]	C129(A2)	1
	TNL-8100	C129(A2)	1
	Trimflight		4
UPS Aviation	GX 55, GX55R	C129a A2	1
North Star	M3	C129a A1	1
	GPS 60		3
Notes:	1. VHF portion Level 1 2. Switch / annunciator 3. TNL-2000 & -3000 srs approval limited to aircraft without Satcom equipment 4. With software version -0212 5. With software version -0312		
ACARS			
Collins	DLM709B	STC5594NM, 5473NM	3
Satellite Communication			
Honeywell / Racal	MCS 6000	STC 5594NM	3
Flightfone			
Hughes	1167014	STC5594NM, 5473NM	3

Manufacturer	Type	Approval	Level
ELT			
ACK	E-01	C91a	1
Ameri-AlliedSignal	AK-450, AK-450-1	C91a	1
Artex	SHARC 7	C91	1
	ELS-10HM	C91a	1
	ELT100 HM	C91a	1
	ELT110, ELT 110-6	C91a	1
	ELT200	C91a	1
	ELS-10, ELS-10HM	C91c	1
	ELT-110-406, ELT-110-406 RA, HM-BA	C126	1
	00-10-009	C91	1
Comm. Comp.	CIR-10, 11	C91	1
Dayton	EB-2B(CD) [1]	C91	1
D&M	ELT6( ), ELT8	C91	1
Deft Labs	Sharc-7	C91	1
EBC	EBC102A / 302	C91	1
Emergency Beacon	EBC302V	C91	1
Garrett	Rescue 99	C91	1
Jolliet	JE2	DM20219 [2]	1
Kannad	406	C91a & C126	1
Narco	ELT10	C91	1
	ELT910	C91a	1
Pointer	3000	C91	1
	3000-10	C91a	1
	4000	C91a	1
Notes:	*1. Martech Division* *2. DM20219 is equivalent to TSO-C91*		

EFIS			
AlliedSignal	EFIS 40 (SG465 / ED461)	C113	1
Eventide	Argus 7000	C113	1
Passenger Entertainment			
Avionics West	EC 200		4
AWA	TC752B Stereo Radio Cassette		4
	EC100 Broadcast Rx		4

Manufacturer	Type	Approval	Level
Panasonic	CQ-K04EW Radio Cassette		4
Sanyo	Radio Cassette		4
PS Engineering	PCD 7000/7100/7100 ex CD players	C50c	1
Avionics Innovations (AI)	AI CDIII, AM/FM RX, AI Multi CD, AI Amp		3
GPWS			
AlliedSignal	CPA -83A	C92	1
Sunstrand	965-0577-003	C92b	1
	965-0476-088 (GPW MKII)	C92b	1
CVR			
Loral Fairchild	A100A	C84	1
Miscellaneous			
Becker	ZVG-2002 Homer	NH	4
Collins	ANS-351 RNAV [2]	C36c	1
Emergency Beacon Corp	DF-88, DF-88A		3
Indcom	AZE146-25-079-001 [1]	NH	4
JPA	JPA 91 PA / Siren		4
L-Tronics	LA-16A Homer	NH	4
Taiyo	TD-L1626 VHF DF	NH	4
Notes:	*1. Cellphone base unit* *2. Not approved for IFR within NZ*		